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New Trends in Sustainable Business and Consumption

2019

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Circular Economy: A Theoretical Approach for a Modern Economy

Professor Giovanni Lagioia is Full Professor of Commodity Science at Department of Economics, Management and Business Law in University Aldo Moro of Bari. He is author of more than 150 papers published on the main scientific journals and academic volumes. He has been involved in several national and international projects related to his principal research interests such as impacts of commodity production and consumption and environmental management systems.
Since February 2018 he is Director of above mentioned Department and until April 2019 Dean of Faculty of Economic, Political and Social Sciences at Catholic University "Our Lady of Good Counsel" in Tirana.

Dănuț Iorga

Building Sustainable Business Through Lean Six Sigma Continuous Improvement

Dr. Eng. Dănuț Iorga is member of the American Society for Quality Romanian Local Membership Community, former American Society for Quality Country Counselor for Romania, senior member of the American Society for Quality, Associate Professor at Faculty of Entrepreneurship, Business Engineering and Management, University Politehnica of Bucharest. Dănuț Iorga has been certified in 2005 as Six Sigma Black Belt by American Society for Quality and Master Black Belt by SixSigma.us and has been involved in more than 200 Improvement and Design Projects in companies such as NCH Group and Accenture. Since 2009, Dănuț Iorga is CEO in a Real Estate American Investment Company that activates in Romanian market.

Cosimo Ranieri

The Mission of Tourism

Dr. Cosimo Ranieri is President at Section Tourism of Confindustria Bari-BAT, the most representative local association of entrepreneurs in the hospitality industry, whose activities mainly focus on education, training, destination marketing and networking with all local stakeholders.
Cosimo Ranieri is also Vice President at Bari Convention Bureau, company which promotes and sells the Metropolitan City of Bari as destination for large conferences and events.
Since 2013, he is Managing Director at Mercure Hotel Villa Romanazzi Carducci, awarded as the best business hotel of South of Italy and islands in 2017.

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MIGRATION AND REFUGEE CRISIS IN EUROPE. THE GERMAN AND UK RESPONSE TO THIS EXODUS

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Abstract

In the present paper, the authors intend to make an exploration upon the political and legislative studies of the European Union regarding the refugee crisis, through an analisys of the EU studies on the migration and the asylum policy, presenting new potential approaches in this difficult situation and trying to offer political recommendations and possible suggestions for further analyses. The imigrants entered the European Union using maritime and terrestrial ways, ways that proved to be dangerous and fatal in many cases, thus leading to a devastating humanitarian crisis in all Europe. In this respect, the European Union officials tried to create immigration policies based on the cross-border management and increased security norms. Nevertheless, many authors, researchers, groups and non-governmental organizations counter-attacked this approach and invited the European Union to extend its policies for including also less radical measures. Until now, the Union stays fragmented and undecised about offering a concrete answer for this situation.

The authors refer to: the individual interest of the immigrating persons, the quantitative-type interest, operating the analysis of the official public written documents with certain judgement and responsibility, the bibliographic method, the theoretic modelling method. For a better understanding, the paper presents a comparative analysis between the approaching modalities of the refugee crisis in Germany and Great Britain, evidencing the differences between the two countries EU members in managing the increased number of refugees.

Keywords

refugee crisis, European Union, migration, refugees, political asylum.

JEL Classification

F00, F01, F2, F22

Introduction

The illegal migration cases and the request for asylum have rapidly increased, from one day to another, to become overwhelming for the countries in the Southern Europe, fact that facilitated an unprecedented crisis that suprised both the European Union and the entire world. **The general objective** of the present paper is to explore the political and legislative approaches of the European Union about the refugee crisis, trying to highlight the effects that these had upon the European countries. In this respect, the paper tries to respond to the

following questions: *Are the actual policies concerning the immigrants requesting asylum in the European Union viable enough to respond in an adequate way to the migration crisis that threatens the EU existence itself? If not, what measures coud be taken to help sorting this problem out?* More precisely, this paper investigates the way in which the EU regulations approach this subject, analyses the critical factors within the crises and concludes in what measure the European Union solutions facilitated solving the crises. The paper also grants a particular importance to the way in which the solidarity concept between the European Union Member States has become a greater and greater obstacle concerning the management of this problem and tries to determine if the actual preocuppations within the EU Agenda concerning the migration adequately approach this aspect. For a better understanding, the paper presents a comparative analysis between the ways to approach the refugee crisis in Germany and Great Britain, evidencing the differences between the two countries - EU members, in managing the increased number of refugees.

The research methodology is selected in accordance with the specificity of the research directions, being different from other methodologies by a particular vision that harmonizes the aspects of dynamics, of rapid and unpredictable modifications, derived from the European migration that economically and socially affected all the EU member states. The authors refer to: the individual interest of the immigrating persons, the quantitative-type interest, operating the analysis of the official public written documents with certain judgement and responsibility, the bibliographic method, the theoretic modelling method. At the same time, the research appeals to data, practical methods, applications in the field of economic, social and political sciences, and also of the international relations. The main method used by the authors to collect data was the method of document analyzing, particularly of the activity reports of the European Union, documents of policies, official statistics.

Many studies upon migration indicate that an incomplete data provided from the population side represents one of the strongest barriers of the migration (Seifert-Vogt, 1991; Heitmueller, 2005; Baláž, 2012). According to the social theory on migration based on the risk of abhorrence, the decision to leave the country is a slow process, based on the hypothesis according to which the connections between the destination country and the mother country are setlled by the pioneer immigrants on the their own. (Kotyrlo, 2017). Among the decisions concerning the migration, we can mention the will to live in a free and democratic society, personal security or quality health and educational services, that to contribute to a high quality of life. (Kotyrlo, 2017).

Most of the European Commission reports acknowledegd that the goverments have a negative impact upon migrants integration and that a closer cooperation among the EU countries must exist when it comes about managing the migrants and refugees flow (European Commission, 2011, 2014). It was also acknowledged that the mass-media had a negative impact upon the migrant's portraying, the implementation of a "more positive vision upon the migrants and their contribution for the society, through a more precise, impartial and realistic image of the migrants" being a necessity (European Commission, 2011: 9). As Richardson and Colombo (2013) argue, the inflammatory language about the migration and the migrants is currently more and more heard from the traditional national politicians side (Berry, Inaki, Moore, 2015). For example, in July 2015, the British Prime-Minister, David Cameron was criticized for describing the migrants trying to arrive in the Great Britain as "swarms of people that come in the Mediterranean Sea" (BBC News, 2015a). The European agenda on the migration (2016) analyzed the flow of refugees in a structured manner, on criteria related to the incentives reduction for the illegal migration, life-saving and external borders security, consolidating the EU policy in terms of asylum granting and developing new policies concerning the legal migration (Racheru, 2016).

The key limitation of this research is the fact that, although the peak of immigration to Europe has ended, the mass migration is still ongoing and continuously changing. Given this dynamics, many of the investigated processes, including the trends, the problems related to the legislative processes and the presented ideologies, are dificult to asses in strict terms and, most probably will suffer substantial modifications in the upcoming period.

The Management of the Refugees Crisis in Germany

According to the data provided by the German Agency for Refugees, within 2011-2016, Germany recorded a hystoric peak of 1,091,894 asylum requesters, the largest number of refugees arriving to an Occidental country after The World War II. The dynamics of the asylum requests increase is impressive. Thus, in 2011, a number of 53,347 refugees had sought asylum in Germany, their number increasing with almost 400% along a period of three years, and consequently, in 2014, Germany received approvimately 202,843 asylum requests. This asscending trend was mainly determined by an increasing number of refugees coming from Syria, Afghanistan and Irak, that are among the most important six countries of AOAV (Action on Armed Violence), as most affected by the explosive violence between 2011 and 2016 (Eurostat, 2016).

The German politicy towards refugees cand be presented through the following approaches (Euractiv, 2015c):

- Irak, Syria and Afghanistan are among the most affected by violence and are constantly counted among the countries with positive results when it comes to asylum granting;
- the refugees from the Balcanic countris are not affected by the explosive violence and are usualy rejected;
- the applicants from Nigeria, Yemen and Pakistan are also preponderently rejected, although all the three countries are amoung the most affected by the explosive violence according to the AOAV list;
- Iran and Eritrea, where the refugees are often prosecuted, have a constant acceptance rate of approximately 40%.

From the point of view of the **motivational factors,** that generated the migration from third countries in 2016, an analysis developed by the Federal Office for Migration and Refugees reveals the fact that 7% from the immigrants chose to relocate to Germany from family reasons, approximately 3% received a residence permit that also proves their right to work, and 6% out of these aimed to continue their studies. Due to the increased flow of Syrian refugees, the immigration, from humanitary reasons, continued to stay at a high level (approximately 8%), and the residence permits granted for finalizing the asylum procedures increased by 24% (compared with 2014), also reflecting the increase of immigrants asking for political asylum (Bâlgăr, 2017).

The German citizens do not entirely reject the Syrian immigrants running away from the war, but are worried by the proportions this problem has reached and by the possible society and security consequences. The agreement with Turkey, signed on March, 18th, 2016, stipulating a trade system between EU and Turkey, applicable only for the Syrian refugees, seemed to have brought a temporary and pretty isolated solution for the situation taken into consideration (EU Turkey Statement, 2016). The main focus of this agreement is releasing

the pressure put upon Greece by stopping and taking over the refugees by Turkey, mission for which Turkey received a financing of EUR 3 billion, following that, if necessary, this budget to be increased along the way (Manolache, 2016).

Germany faces **a demographic aging**, the German business sector highlighting that, given the crucial advantages offered by the good education, training and the abilities the refugees have, they shoud be integrated in the German society (Ageing Report, 2016). By this logic, the German business sector drew the attention upon the necessity to speed up the regulation that allow finding a job and integrating the admitted immigrants. Consequently, the private sector has the role to ensure covering its necessity of labour force, especially in the context of foreshadowing the long term necessities for Germany (Manolache, 2016).

Another extremely important aspect brought by the increased number of immigrants is related to **enhancing the religious diversity,** that generates a series of institutional, political and legal challenges. This way, as Turkey has been representing one of the main source-countries for immigrants to Germany along the past few decades but also in the context of the recent „waves" of immigrants coming from the muslim countries, the Islam became the third majority religion, after Christianity and Judaism (The Expert Council of German Foundation on Integration and Migration, 2016). Consequently, a survey accomplished in 2016 by the above mentioned Council, reveals the fact that, most of the interviewed citizend approve the Islamic religious education (for the ones belonging to this religion), but disagree about the increased numerical weight of the Islam sympathizers.

Another facet of the religious diversity is also *the potential discriminating attitude of the employees in the private sector*. In this respect, the national studies we consulted indicated the fact that the discrimination against the muslim population in the occupational process represents a rare phenomenon, having an exceptional character, consequently, no political actions in the field of labour force occupation is necessary. As the main difficulties in the process of integrating the muslim immigrants on the labour force market are more related to not speaking the German language well enough, to the lacks in education or to the lack of abilities and professional qualifications, the Government actions should be targeted more towards the educational sector.

The Management of the Refugees Crisis in Great Britain

In Great Britain, the number of asylum requests stayed relatively stable in the past few years. In 2015-2016, there existed significant increases in the number of requests coming from Irak, Sudan and Afghanistan. The number of the requesters from Syria increased by 29% in 2016 compared to 2015.

Table no. 1 The Dynamics of the Asylum Requests Between 2012-2017

2012	2013	2014	2015	2016	2017
25,898	27,978	29,875	32,344	39,968	38,517

Source: Eurostat, 2017

Here, the asylum requesters are asked to present themselves to the authorities immediately after their arrival. The immigration officers file a request on the behalf of the asylum requesters, while the latters have to explain the way they were persecuted in their origin country and why they are afraid to come back and also to provide any kind of proofs to sustain their request. The British system of asylum granting is complex and strictly monitored and controlled. It is very difficult for a person to be granted asylum, the process of decision making is extremely tough and the many of the requests are rejected. In 2016, 13,230 requesters were taken to detention centers. Unfortunately, half of the asylum requesters remain in detention during the process of asylum granting. Despite the Government's commitment in 2010 to end the detention for the immigrants, 71 children were taken to custody in 2016. Starting 2005, the majority of the refugees are permitted to stay in The United Kingdom only for five years. This makes it difficult for them to make any decision concerning their own future, to find a job and to make concrete plans for their lives in the Great Britain.

Great Britain hosts less than 1% from the refugees worldwide, that numbers more than 59.5 million forcely dislocated persons, globally (UNHCR, 2016). Among them, more than 5 million persons ran away from the conflict in Syria. Turkey is the biggest host country in the world for the refugees, presently offering sanctuary for 2.5 million Syrian refugees, while Jordan and Lebanon host 1.7 million. **Until the end of 2016, Great Britain reinstalled 5,706 Syrian refugees.**

A Comparative Analysis

Germany demonstrated an impressive attention towards the human rights when it symbolically opened its gates for the refugees coming from Syria, on August 25th , 2015. Seven months later, the doors were closed. The EU-Turkey Agreement, most of it negotiated by Angela Merkel after she was put under the pressure coming from the right-wing politics, represented a step behind from the opening initially manifested. Germany registered the largest number of asylum request applications, ***more than 18 times more the number of applications registered in The Great Britain***. Both Sweden and Hungary, having much smaller populations than The Great Britain, had, proportionally, more requests (Figure no 1).

Germany offers corresponding conditions for the refugees, the main problems being for those who have to live 100 persons in a shelter. The mass shelters may be an extremely stressing environment, particularly for children and pregnant women, but also for those with psychological problems. The free-of-charge psychological care, was considered to be extremely useful for integrating the refugees in the community. The efficient examination and granting pshychological assistance for more refugees that witnessed explosive violence is considered to have a positive impact upon them and also upon the German society, overall.

When it comes about approaching the European crisis in terms of asylum and refugees, The Great Britan left Europe many years ago. In fact, it is the direct consequence of the "opt-out" policy initiated by Tony Blair in 1997, for the EU issues related to immigration and asylum.

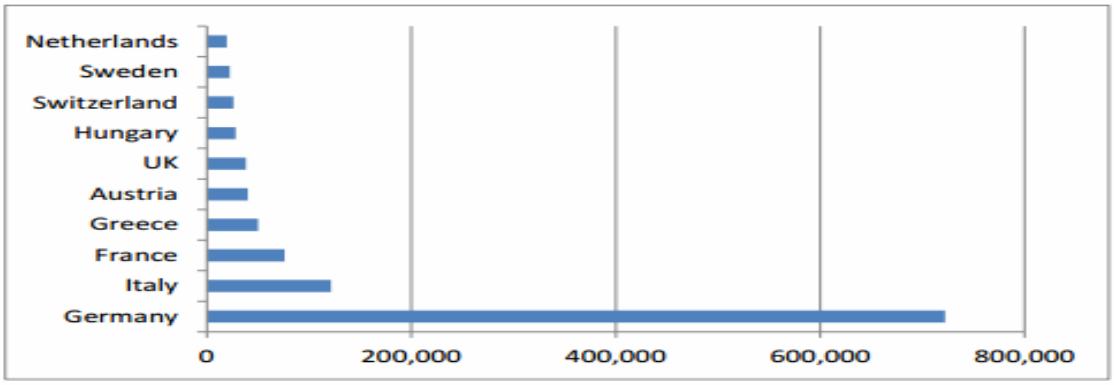

Fig. no. 1 The Number of Asylum Applications in the Main European Destination Countries
Source: Eurostat 2017

Theresa May succeeded in a keeping Great Britain at distance from the most severe refugee crisis, since The World War II. Only the moment the crisis was to spread along The Great Britain's shores – either the by the expected "invasion" coming from the camp in Calais, or by the images that showed how the immigrants died sailing in the Mediteranean Sea – the British politicians felt the need to take action. While Angela Merkel gave a humanitarian response by opening the German borders for hundreds of thousands of asyum requesters, Theresa May, as a Ministry of Interior argued that, supplying search and rescue ships in the Mediteraneean Sea represented an unintended " attraction factor" for "dangerous actions of crossing the sea and consequently, leads to tragic and useless deaths " May, Theresa (2015). In her speech at the Conservatives Conference in 2015, Theresa May described an asylum system that granted the statute of refugee to those having arrived to Great Britain and Europe, as „a reward coming from the richer, luckier and stronger "(The Guardian, 2015), not only to the most vulnerable. In exchange, she proposed a system on two levels that would discourage people to make this dangerous trip to Europe: some would benefit from temporary protection measures, while others could benefit from reinstallation programs that maintain a longer term protection (May, Theresa 2015). UNHCR considers that the proposal for a „differentiated treatment" for the refugees is not legal and that the British Government actually „activated a pause" in relation with the proposed policy. However, UK put into practice and followed exactly this policy towards the refugees European crisis. The paradox is that, while The Great Britain was almost alone in refusing to take part in solutioning the European crisis two years ago, even in principle, **Theresa May's policy is now the one asking for the majority support in Europe.** May is an unshaken supporter of the recent EU-Turkey agreement to reduce the refugees flow in the Aegean Sea and offered a significant number of asylum staff in Italy and Greece, to help process the asylum requests and facilitate the fast repatriation of the rejected ones. Theresa May did everything she could to resist the opening of a legal path to Great Britain for the ones seeking asylum, that had reached the camp in Calais.

This does not mean that the biggest refugee crisis after The World War II did not trigger a strong humanitarian response among the British population, the same it happened in the rest of Europe. When the crisis was the acutest, the British politicians responded. David Cameron committed himself to bring 20,000 of the most vulnerable Syrian refugees to Great Britain, within a direct rellocation program. Confronted with additional pressures, Cameron agreed bring extra 3,000 unaccompanied refugees from the Middle East. Yet, there is a field in which Great Britain wishes to develop a common European approach towards the asylum and refugees and that belongs to data bases area. Great Britain opted for the Schengen

information systems even if not a part of its open-border space and hardly admitted finger-printing the immigrants at their arrival.
Although in her speech at the Conference in 2015, Mrs. May stressed out the fact that "not in one thousand years" she would join a new common policy with EU in the field of immigration and asylum, given the position of Germany - to share the responsibility with the whole EU for the refugees crisis - Theresa May's approach has become the response common to all Europe. When we speak about the refugee policy, The Great Britain might not join Europe, but Europe rapidly lines up to the solutions proposed by Great Britain.

Conclusions

The comparative analysis between the ways in which two of the most important Member States of the European Union, Germany and repectively Great Britain, managed the refugees crisis, evidenced an absolute difference between a permissive policy, open to absorb a large number of immigrants, respectively the German one, and a restrictive, conservative policy, the British one. The failure the European Union experienced, in what the migration crisis in 2015 concerns, could have had much more reduced consequences if all the Member States had accepted a standard asylum procedure, to also include a correct and equitable responsibilities breakdown and the distribution of the number of asylum requesters, likewise. Unfortunately, the national policies and interests were more important than the common interest to stop the wave of refugees, fact that made the common asylum policy to be non-operating.
Another method by which the EU could have managed the wave of refugees better but also by which the number of life-wastes would have been dramatically reduced, would have been granting a fast and safe alternative by which to provide the transportation of refugees from the affected zones to the Member States of the European Union. Either planes had been granted for transporting the refugees or ships, to take them over in their attempt to cross the Mediteranean Sea, the number of dead refugees would have been considerably lower and the European Union could have had a better control about their destination country.
Although, along its history, the European Union faced other immigrant crisis, it seems that it did not learn much from the past experiences, in order to develop a common asylum policy, to be operational at the entire EU level. This aspect can be fixed if the Member States understand that, the cooperation relations and an equal distribution of the responsibilities represent a fundamental condition for being able to manage a future crisis in a common way. But, as long as the common European Union policies will not be unanimously accepted and implemented by the Member States and the national policies will be a priority before the common policies, concieving and implementing a completely functional strategy on immigration will be difficult to accomplish, the European Union being thenceforth exposed to the risk of facing such crisis again and not being able to properly and efficiently manage it.

Note

The paper is a continuation of a research in this field, belonging to the authors, *The Migration Crisis and the Impact on the European Union Economic Diplomacy. How to Solve It ?*, Authors: Anca Gabriela Ilie**,** Dan Dumitriu, IBIMA Publishing Journal of Eastern Europe Research in Business and Economics, (2017), http://ibimapublishing.com/articles/JEERBE/2017/562051/562051.pdf

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STUDY ON RELATIONSHIP AMONG REWARD, WORK PRODUCTIVITY AND EMPLOYEES' PERFORMANCE

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Abstract
Satisfactory reward is a continuing concern for organizational leaders, especially for the health industry. Appropriately rewarded employees will result in a higher labor productivity. Employee reward is the most important human resource productivity enhancer, given that the importance of human resources in the organization's resource palette, the human resource being the one that ensures the organization's operation at its maximum capabilities and high performance, regardless of the economic sector in which they operate (public, private or non-governmental). The purpose of our research is to analyze and evaluate the reward policies of employees and their effects on the productivity and performance of employees within a hospital unit belonging to the emergency medical system. In order to achieve this goal we conduct a research at the County Emergency Hospital Slatina (Romania), carrying out a statistical analysis of employees' perceptions regarding the impact of policy compensation on labor productivity and individual performance. The results of the research we have transposed into a tool which we have called pyramid of influences of the reward policies on labor productivity and employee performance.

Keywords
Reward policy, productivity, employee performance, motivation.

JEL Classification
J33, O15

Introduction

The efficiency and effectiveness of organizations depends not only on non-human factors (technological and non-technological) but also on labor efficiency. Employees are responsible and involved in all the activities of an organization, therefore their effective use and control must be the primary objective of the organization.

There are many challenges facing the health sector today, such as resources scarcity systemic deficiencies, the high cost of human resources, sanitary materials and drugs, labor productivity playing a crucial role, which can be improved by some proactive measures. Labor productivity occupies an important place in any organization, as employees are involved from the beginning to the end of any activity. If labor productivity is higher, it ultimately increases the overall performance of the organization. Labor productivity can be improved by an appropriate reward system that motivates employees and gives them

opportunities for growth and development. Constantinescu et al. (2008) state that labor productivity is useful to increase the overall productivity of any organization, as long as each employee provides maximum effort as a result of effective motivation. Motivation through its core element, reward, is an essential vector in the organization's work, which if not properly managed can affect the organization's productivity.

Over time, it has been remarked that there is a significant relationship between reward and work productivity and, implicitly, the performance of employees and organizations. For example, Mayson and Barret (2006) found that organization's capacity to attract, motivate and retain workers by providing competitive salaries has direct positive effects on organizational performance and growth. Also in areas where employees work directly with customers, and especially in sales, Noe et al. (2016) have found that the reward system has significant effects on individual performance and organizational effectiveness. Therefore, in a competitive business environment, many organizations are trying to identify innovative reward strategies that are directly related to increasing work productivity and improving organizational performance (Barbu et al., 2010).

According to Nebeker et al. (2001), organizations' performance is a result of employee satisfaction. Performance-based reward is the reward system that best relates reward policies to work productivity and employee performance (Collins and Clark, 2003). And other differentiated reward systems (reward based on competencies, contribution-based reward) can have positive influences on employee productivity and employee performance if its properly set up (Rue et al., 2015).

Noe et al. (2016) recognized performance-based rewards as the most powerful predictor of company performance. Both performance-based reward and merit-based promotion can be considered as key ingredients in organizational reward systems that encourage performance and employee retention. Although performance-based reward can motivate employees, occasionally workers perceive it as a mechanism for controlling individual and collective behavior. In such a case, workers become less loyal and engaged, so reward plans have an opposite effect than desired (Mathis et al., 2016). The rate of employee turnover can significantly slow down revenue growth, especially in knowledge-based industries (Dessler, 2016).

The overall objective of our paper was to assess the impact of reward on the work productivity and individual performance in the perception of the hospital employees from the County Emergency Hospital Slatina. In the first section of the paper we made an introduction to the research issue. The second section presents the methodology of the research and makes an exposition of the hypothesis resulting from the study of the specialized literature. The third section presents the results of empirical research on a sample of employees about their perceptions as well as interpretations of these results. The fourth section proposes a tool for analyzing employees' perceptions concerning the impact of reward policy on labor productivity and individual performance. The conclusions summarize the findings from the evaluation of the employees' perceptions from the County Emergency Hospital Slatina.

Research methodology

In order to achieve the objective of the paper, we conducted an empirical study at a public hospital in Romania: County Emergency Hospital Slatina (CEHS). For this purpose, we selected a sample of 70 employees from all levels of the medical services within the staff of the CEHS. For sampling, we used the proportionate stratified sampling method to identify respondents to the questionnaires, respecting the criteria of proportionality with the human resources structure of the hospital by age, sex and type of employment. The data were analyzed using the SPSS data analysis software.

Starting from the literature study, on the basis of our own observations and the deductive and inductive analysis we formulated the following hypothesis regarding the impact of the reward policies on the productivity and employees' performance that will be the object of the researches carried out at the CEHS: In the perception of the employees of CEHS, reward policy have a significant and direct impact on employee productivity and performance. The hypothesis will be investigated for validation or invalidation, by studying the reliability of research items, frequency analysis and the study of correlations between research items. In order to determine the effective impact of reward on productivity and employees' performance from CEHS, we have defined, besides variables related to the impact of reward on labor productivity and performance, a variable describing employees' perceptions on reward policy within the hospital.

Results and discussions

The hypothesis concerning the impact of reward policy on work productivity and employees' performance implied the analysis of ten individual variables (iirpp21.01-iirpp12.10). For each item constituting an individual variable there were defined five levels that had attached values: total agreement (5), partial agreement (4), neutral (3), partial disagreement (2), total disagreement (1). In table no.1 we presented the variables surveyed, the aggregate index of the 10 variables and the average of the values assigned to the answers.

Table no. 1 Research variables and average values assigned to responses

Variable	The impact of an adequate reward policy on individual productivity and employee performance	The average of the values assigned to the answers
irapp12.1	Motivates employees to work better.	4.51
irapp12.2	Improves punctuality and reduces employee absenteeism.	4.46
irapp12.3	Improves employees' desire to make additional guards.	4.21
irapp12.4	It increases the employees' commitment to the organization.	4.50
irapp12.5	Increases employees' willingness to grow.	4.59
irapp12.6	Creates a healthy work environment and improves health.	4.27
irapp12.7	Creates a very good working relationship between management and employees.	4.46
irapp12.8	Makes the employees feel appreciated and give everything they can.	4.46
irapp12.9	Attracts and motivates qualified staff to work better.	4.37
irapp12.10	Rewards the employees involved to organisation efforts.	4.36
IAIRAPP	The aggregate impact of an adequate reward policy on individual productivity and employee performance	4.42

Source: Developed by the authors

Before undertaking an analysis of respondents' perceptions concerning the impact of reward policy on employee productivity and performance, we conducted a test on the reliability of the information to check how items related to the impact of reward policy on labor productivity and employee performance capture the phenomena investigated. In order to test reliability, we performed a computing a Guttman's Lambda (λ) Test. Among the lambda values, the λ2 and λ3 (Alpha Cronbach coefficient) values are the most used in performing statistical reliability tests. Both values recorded by Gutmann coefficients (Alpha Cronbach -

0.936, respectively λ2 - 0.939) show excellent reliability to the variables of the questionnaire, allowing the recording of relevant and replicable results.
We then analyzed the frequencies of the ten individual variables (iirpp12.01-irpp12.10). The iirpp12.01-iirpp12.10 individual variables express employees' perceptions of how performance is influenced by a well-designed, well-managed and implemented reward policy with positive effects on individual productivity and organizational performance. Table no. 2 shows the percentages that characterize the frequencies recorded by the ten individual variables.

Table no. 2 Frequencies recorded by the ten individual variables (percentages)

Variable	Total disagreement	Partial disagreement	Neutral	Partial agreement	Total agreement
irapp12.1	5.7	1.4	7.1	7.1	78.6
irapp12.2	4.3	4.3	7.1	10.0	74.3
irapp12.3	5.7	4.3	12.9	17.1	60.0
irapp12.4	1.4	2.9	11.4	12.9	71.4
irapp12.5	0.0	4.3	7.1	14.3	74.3
irapp12.6	4.3	0.0	17.1	21.4	57.1
irapp12.7	2.9	1.4	10.0	18.6	67.1
irapp12.8	2.9	5.7	5.7	14.3	71.4
irapp12.9	2.9	5.7	12.9	8.6	70.0
irapp12.10	2.9	4.3	14.3	11.4	67.1

Source: Developed by the authors

Analyzing employees' perceptions of how an effective reward policy motivates employees to work better (individual variable iirpp12.1), it can be seen that 78.6% of the surveyed employees are totally agree, and 7.1% of the surveyed employees are partial agree with the motivational effects of reward policy. A small percentage (7.1% of the interviewed employees) said that the rewarding policy had no effect on the motivation of the CEHS employees, 7.1% of the respondents being declared neutral.
Researching employees' perceptions of how an effective rewarding policy improves staff punctuality and reduces absenteeism (the individual variable iirpp12.1), we found that 84.3% of respondents believe that effective reward policy leads to reduced absenteeism and punctuality, while 8.6% of respondents said they were skeptical about this.
Studying employees' perceptions of how an effective rewarding policy improves staff punctuality and reduces absenteeism (the individual variable iirpp12.1), we found that 84.3% of respondents believe that effective reward policy leads to reduced absenteeism and punctuality, while 8.6% of respondents said they were skeptical about this matters.
Analyzing employees' perceptions of how an effective reward policy improves employees' willingness to make additional guards (individual variable iirpp12.3), it can be seen that more than half of respondents (60%) consider that the reward system determines an increase in employees' desire to make additional guards. A total of 12.9% of respondents said they were neutral about this question and only 10% of respondents said they would not be encouraged by rewards to make additional guards.
Analyzing employees' perceptions of how an effective reward policy increases employee engagement with the organization (the individual variable iirpp12.4) indicates values similar to the first two variables illustrating the impact of reward policies on employee productivity and performance. A total of 84.3% of the total respondents believe that effective reward policy leads to increased employee engagement with the organization, while only 4.4% of

respondents have been skeptical about this issue. It can be seen the rather large number of respondents who declare themselves neutral compared to the first two variables.
By looking at employees' perceptions of how an effective reward policy increases staff availability to learn new skills and implement these skills at work (the individual variable iirpp12.5), it can be seen that 88.6% of respondents consider that an effective reward policy increases employee availability to develop themselves. Only 4.3% of respondents said they would not be encouraged by rewards to learn new skills to put them into practice at work, and 7.1% of all respondents declared themselves neutral.
Analyzing employees' perceptions of how an effective reward policy creates a healthy work environment and improves employee health (the individual variable iirpp12.6), 57.1% of the surveyed employees are totally agree, 21.4% of the surveyed employees are partial agree with the effects of the reward policy on health. A very small percentage (4.3% of the interviewed employees) stated that the rewarding policy had no effect on the health of the employees of the Emergency County Hospital of Slatina, 17.1% of the respondents being declared neutral.
Studying employee perceptions of how an effective reward policy creates a very good working relationship between management and employees in order to increase performance (the individual variable iirpp12.7) it can be seen that 85.7% of respondents believe that the reward system creates a very good working relationship between management and employees in order to increase performance. A percentage of 10% of respondents said they were neutral on this question and only 4.3% of respondents said reward policies had no effect on the working relationship between management and employees.
By looking at employees' perceptions of how an effective reward policy makes employees feel appreciated (the iirpp12.8 individual variable), we found a distribution relatively similar to the previous variable (the iirpp12.7 individual variable). The same number of respondents (60 out of 70) believes that an effective rewarding policy makes employees feel valued and do everything they can. Similar to the previous variable, 10 respondents declared themselves neutral or disagree with this statement. The difference comes from the distribution of the 10 respondents, only four declaring to be neutral, the remaining six being skeptical about the reward effects on the appreciation of the employees.
Analyzing employees' perceptions of how an effective reward policy attracts qualified staff (the iirpp12.9 individual variable), 78.6% of respondents believe that an effective reward policy attracts qualified staff. Only 8.6% of respondents said the rewarding policy had no effect on attracting qualified staff, and 12.9% of respondents said they were neutral about this question.
Analyzing employees' perceptions of how an effective rewarding policy rewards employees to encourage high efforts and performance (the iirpp12.10 individual variable), 78.6% of respondents believe that an effective reward policy encourage involved employees to make great efforts and obtain high performance. Only 6.2% of respondents are totally or partially disagreed with this statement, and 14.3% of all respondents declared themselves neutral.
Following the hypothesis research, we can say that this hypothesis is validated. In the perception of CEHS employees, reward policies have a significant and direct impact on employee productivity and performance. These research results are in line with the findings of Dessler (2016), Mathis et al. (2016) and Noe et al. (2016).

Tool for analyzing employee perceptions - pyramid of influences

An analysis of the correlations among the individual variables concerning the impact of reward policy on labor productivity and employees' performance and the variable concerning reward revealed that among issues which impact the work productivity and employees' performance, motivation and desire to make guards are strongly correlated with variable concerning reward. Average correlations are found among variable concerning

reward and improving punctuality, reducing absenteeism, ensuring a healthy work environment, improving employee health, attracting qualified staff (table no. 3). All of these aspects are influenced by reward policies, contributing to increased employee productivity and performance.

Table no 3. Correlations among the variables concerning the reward and the impact of reward on labor productivity and performance

		iirpp 12.1	**iirpp 12.2**	**iirpp 12.3**	**iirpp 12.4**	**iirpp 12.5**	**iirpp 12.6**	**iirpp 12.7**	**iirpp 12.8**	**iirpp 12.9**	**iirpp 12.10**	**IR**
iirpp 12.1	Pearson Correlation	1	.486**	.501**	.614**	.478**	.802**	.743**	.589**	.667**	.641**	.405**
	Sig, (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
iirpp 12.2	Pearson Correlation	.486**	1	.466**	.672**	.765**	.572**	.515**	.548**	.502**	.522**	.252*
	Sig, (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.000	.036
iirpp 12.3	Pearson Correlation	.501**	.466**	1	.600**	.338**	.451**	.524**	.467**	.388**	.516**	.307**
	Sig, (2-tailed)	.000	.000		.000	.004	.000	.000	.000	.001	.000	.010
iirpp 12.4	Pearson Correlation	.614**	.672**	.600**	1	.718**	.499**	.539**	.477**	.480**	.455**	.300*
	Sig, (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000	.000	.012
iirpp 12.5	Pearson Correlation	.478**	.765**	.338**	.718**	1	.432**	.519**	.509**	.506**	.428**	.232
	Sig, (2-tailed)	.000	.000	.004	.000		.000	.000	.000	.000	.000	.053
iirpp 12.6	Pearson Correlation	.802**	.572**	.451**	.499**	.432**	1	.837**	.724**	.756**	.754**	.282*
	Sig, (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000	.000	.018
iirpp 12.7	Pearson Correlation	.743**	.515**	.524**	.539**	.519**	.837**	1	.900**	.761**	.759**	.233
	Sig, (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000	.000	.052
iirpp 12.8	Pearson Correlation	.589**	.548**	.467**	.477**	.509**	.724**	.900**	1	.786**	.800**	.206
	Sig, (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000	.000	.087
iirpp 12.9	Pearson Correlation	.667**	.502**	.388**	.480**	.506**	.756**	.761**	.786**	1	.932**	.281*
	Sig, (2-tailed)	.000	.000	.001	.000	.000	.000	.000	.000		.000	.019
iirpp 12.10	Pearson Correlation	.641**	.522**	.516**	.455**	.428**	.754**	.759**	.800**	.932**	1	.190
	Sig, (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000		.115
IR	Pearson Correlation	.405**	.252*	.307**	.300*	.232	.282*	.233	.206	.281*	.190	1
	Sig, (2-tailed)	.000	.036	.010	.012	.053	.018	.052	.087	.019	.115	

**. The correlation is significant. *. The correlation is average.
Source: Developed by the authors

Starting from the results of the researches carried out at the CEHS, in fig. no. 1 we built the pyramid of the influences of the reward policies on the issues that impact employees' labor productivity and the performance in the perception of the hospital employees.
A well-designed and managed reward policy and its implementation have a positive effect on individual productivity and organizational performance, influencing performance by increasing employees' motivation (which makes them work harder) and paying adequate overtime (which stimulates existing employees to fill the human resources shortage in public hospitals).

In line with the results of previous research (Rue et al., 2015, Mathis et al., 2016, Noe et al. 2016, Barbu et al., 2019), we have come to the conclusion that an effective reward policy leads to an increased attachment of current employees to the organization, attracting talented employees to the organization, improving the working environment, health, punctuality and reducing absenteeism, which positively influences employee productivity and performance.

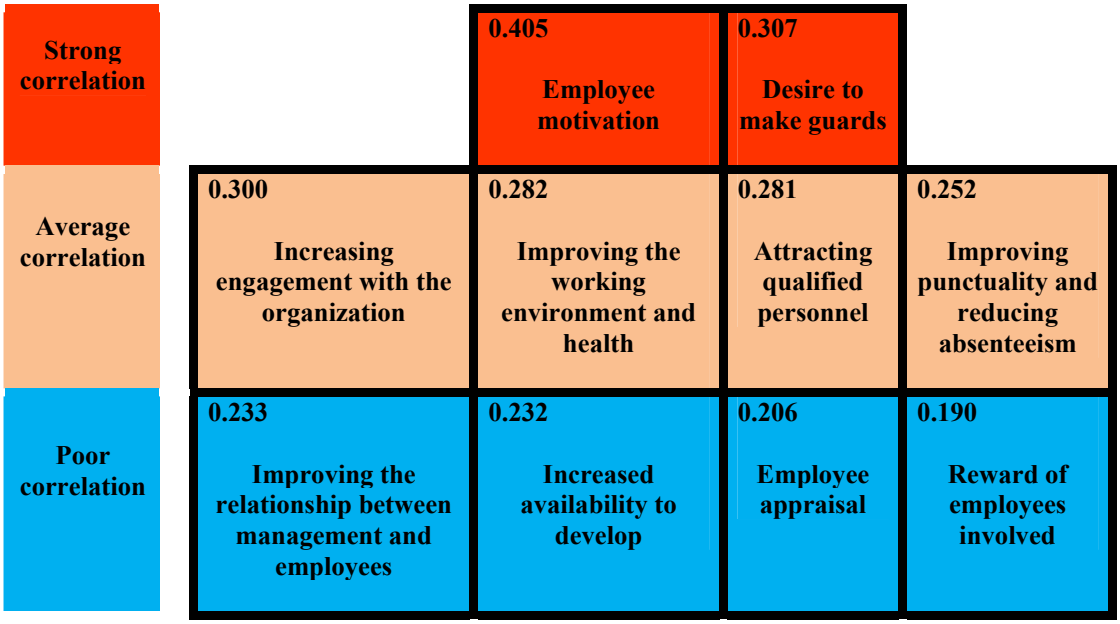

Fig. no 1. The pyramid of the influences of the reward policies on labor productivity and employee performance

Source: Developed by the authors

Conclusions

Individual and collective reward of employees are the central drivers of activity in any type of organization. Proper employee reward, which requires significant financial and material resources from healthcare organizations, continues to be a major concern for hospital managers in Romania. The general problem of the Romanian medical system is that the inadequate motivation of the employees at the level of the hospital institutions in Romania has a negative effect on the productivity or efficiency of the organization. Hospital managers do not have strategies to reward employees to improve their performance, which adds to relatively poor financial resources in influencing the productivity or efficiency of the organization.

The hypothesis regarding the impact of reward on labor productivity and performance implied the analysis of ten individual variables. Following the hypothesis research, we can conclude that this hypothesis is validated. In the perception of employees of County Emergency Hospital Slatina, reward policies have a significant and direct impact on employee productivity and performance. Based on the researches we have undertaken, we proposed as a modulation tool for the reward system the pyramid of the influences of reward policies on the issues that impact the work productivity and the employees' performance.

Reward policy occupies an important place in the overall strategy and policies of their organizations. Organizations that do not adequately manage this human resource management activity will have poor organizational performance due to the low performance of employees and the impact that defective reward policies can have on labor productivity. The reward system should be innovative and should be based on the socio-psychological needs of employees in order to increase the level of motivation of employees. Management

must identify the most effective organizational practices that help increase work productivity to improving in this way the performance of the organization.

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STUDY ON PERFORMANCE EVALUATION OF SERVICES PROVIDED IN A PUBLIC HOSPITAL

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Abstract
Patient perceptions of service performance have become a critical component for measuring work productivity and performance of healthcare professionals, using as mediator the performance of healthcare services. To measure the performance of hospital services at the Emergency County Hospital of Slatina, we used the SERVPERF model for patient perception analysis. The SERVPERF model allows to study the perceived level of patients concerning the quality of the services offered and the predictors analysis regarding the dimensions and elements of the SERVPERF model. The five dimensions considered were: tangible elements, reliability, responsiveness, empathy and assurance. The study is limited to the sample selected from a single public hospital in Romania. However, the results of this study provide a useful tool for government procedures to measure service performance in public hospitals.

Keywords
Service performance, SERVPERF model, public hospital, performance dimensions.

JEL Classification
O14, I11

Introduction

The Romanian healthcare system aims to provide patient-centered care and improve the quality of care, ensuring that health interventions are structured around the patient's requirements and expectations. The poor quality of services in public hospitals is usually due to lack of motivation and low employee morale, which affects work productivity and the effectiveness of medical care, compromising patient care and rising costs of operations due to the inefficiency of using non-human resources.

Over time, the quality concept has undergone changes, focusing moving from goods to services (Dobrzykowski et al., 2016). This change demonstrates the increasing importance of quality in the services sector, including in the area of healthcare services. As a result, the subject of customer service performance has become a significant issue for the performance of healthcare.

In the healthcare area, perceptions of service performance are closely related to the level of patient satisfaction (Williams and Calan, 1991; Cronin and Taylor, 1992, Brady et al., 2002, Akdere et al., 2018). However, there are a number of studies that suggest that patient

satisfaction has emerged before quality assurance has been assured (Bitner, 1990; Bolton and Drew, 1994; Kayral, 2014; Akdere et al., 2018). Although there is no full consensus on the relationship between service performance and patient satisfaction, it is widely accepted that the level of satisfaction is determined by the quality of services (Dabholkar, 1995; McAlexander and Kaldenberg, 1994; Kayral, 2014).
Evaluating the results the patient obtains from a healthcare service takes time. Evaluating patient outcomes can sometimes be difficult and even impossible. The elements that determine patients' perception of service performance are indirect criteria, such as the relationship between patient and hospital staff, facilities, hospital cleanliness, etc. (Bowers et al., 1994; Donabedian, 1996, Ettinger, 1998; Kayral, 2014; Akdere et al., 2018).
Using the SERVPERF model, we will examine patients' perceptions of service performance in a public hospital in Romania. The SERVPERF model has five generic dimensions that will be adapted for the case study of the hospital unit: tangible elements, reliability, empathy, responsiveness, assurance.
The structure of the paper consists of four sections. In the first section of the paper we made an introduction to the investigated issue. The second section sets out research methodology and research hypotheses. The third section presents the results of empirical research on a sample of patients about their perceptions of service performance, as well as interpretations of these results. The conclusions summarize the findings from the evaluation of the perceptions of the patients of the Emergency County Hospital of Slatina (ECHS) regarding the efficiency of the services.

Research methodology

In order to examine and explore the perceptions of a public hospital patients on the performance of healthcare services, we conducted a qualitative study of a sample of 100 patients hospitalized at the Emergency County Hospital of Slatina, who will participate in a questionnaire survey (based on SERVPERF model). In order to build the sample we used the proportional stratified sampling method as a selection process.
Starting from the study of the literature, we formulated the following hypotheses regarding the perceptions of patients on the productivity and performance of the employees and the hospital as a whole, which will be the object of the researches carried out within the Emergency County Hospital of Slatina (ECHS):
IP1. The ECHS patients consider that there is an average level of tangible element quality.
IP2. The ECHS patients consider that there is a good level of reliability of the services.
IP3. The ECHS patients consider that there is a good level of hospital staff empathy.
IP4. The ECHS patients consider that there is an average level of responsiveness dimension.
IP5. The ECHS patients consider that there is an average level of assurance dimension.
Hypotheses will be investigated for validation or invalidation, by studying the reliability of research items, frequency analysis and the study of correlations between research items.

Results and discussions

The SERVPERF model has five generic dimensions that will be adapted to the case study of the hospital unit, each dimension containing a series of items illustrating individual variables: the quality of the tangible elements (eight individual variables); reliability (six individual variables); empathy (eight individual variables); responsiveness (six individual variables); assurance (five individual variables). For each individual variable we have defined five levels with associated values: very weak (1), weak (2), medium (3), good (4), very good (5). Following patient questionnaires administration, we compute a series of indices for each individual variable and a series of aggregate indices related to the five dimensions of the services provided at the hospital.

Table no. 1 presents the descriptive statistics characterizing the selected sample on which the questionnaire on ECHS patients' perceptions was applied.

Table no. 1 Descriptive statistics of the selected sample

	Min	Max	Average	Standard deviation	Skewness	Kurtosis
Gender	1	2	1,72	0,451	-0,995	-1,031
Age	1	5	3,16	1,496	-0,169	-1,427
Level of studies	1	4	1,76	0,933	0,957	-0,175
Environment (urban or rural)	1	2	1,62	0,488	-0,502	-1,784
The place of origin	1	3	1,60	0,569	0,269	-0,792

Source: Developed by author

In the sample, the proportion of female patients is higher in line with the structure of the population that was hospitalized in the month in which we conducted the research. Analyzing the obtained statistical information, we have found that the average age among the respondents is approximately around the age of 38 years. The structure of patients on the level of studies is imbalanced, inclined to the left, illustrating the fact that a large proportion of patients have high school and post-secondary education, respecting the general structure of the patients.

In order to test reliability, we also performed a test, computing all values of Guttman's Lambda (λ). Of these, the λ2 and λ3 (Alpha Cronbach) values are the most used in performing statistical reliability tests. Both Gutmann coefficients (Alpha Cronbach, respectively λ2) record the same high value (0.974), which shows excellent reliability of the variables, facilitating relevant and replicable results.

In order to increase the relevance and depth of the analyzes, we calculated the averages for all variables as well as a series of aggregates as the averages of the values assigned to each variable. These aggregate indices were calculated for each of the five service performance dimensions (IAIP1-IAIP5) (Table no. 2).

Table no. 2 Variable averages and aggregate indices related with formulated hypotheses

	Items	Content of variable	Index value		Items	Content of variable	Index value
Tangible elements	cet6.1	cleanliness	3.82	Responsiveness	resp9.1	physicians' response	4.14
	cet6.2	medical equipment	3.98		resp9.2	presence of physicians at night	3.71
	cet6.3	food quality	3.74		resp9.3	nurses' response	4.06
	cet6.4	salon facilities	3.64		resp9.4	medical care process	4.06
	cet6.5	procedures for payment	3.45		resp9.5	usefulness of administrative staff	3.90
	cet6.6	security	3.69		resp9.6	ambulance services	3.84
	cet6.7	visiting program	3.94	Assurance	asig10.1	hospital building	3.62
	cet6.8	waiting area	3.63		asig10.2	trust given by physicians	4.14
Reliability	fiab7.1	effectiveness of treatment assessments	4.08		asig10.3	confidentiality	4.04
	fiab7.2	relevance of medical tests	3.98		asig10.4	image and reputation	3.69
	fiab7.3	procedure for medical tests	3.96		asig10.5	trust given by all staff	4.12
	fiab7.4	clarity of physicians' explanations	4.01	Aggregate indices	IAIP1.cet	tangible elements quality dimension	3.74
	fiab7.5	clarity of nurses' instructions	4.22		IAIP2.fiab	reliability dimension	4.04
	fiab7.6	effectiveness in emergency cases	4.01		IAIP3.emp	empathy dimension	3.98
Empathy	emp8.1	medical information	4.00		IAIP4.resp	responsiveness dimension	3.95
	emp8.2	hospitalization process	3.88		IAIP5.asig	assurance dimension	3.92
	emp8.3	prescription drugs	3.86				
	emp8.4	physician consultation	3.98				
	emp8.5	programming process for consultation	3.84				
	emp8.6	physicians' patience	4.00				
	emp8.7	nurses' patience	4.12				
	emp8.8	politeness of all staff	4.18				

Source: Developed by author

The search for the validity of the first hypothesis implies the analysis of the responses obtained for the individual variables cet6.1-cet6.8 (items related to the quality of the intangible elements dimension). Following the frequency analysis and taking into account the aggregate index calculated for the tangible element quality dimension (3.74) we can conclude that the IP1 hypothesis is validated. Patients of the Slatina County Emergency Hospital believe that there is a medium level of tangible elements quality.
The difference between the individual variables that form the tangible element quality dimension (cet6.1-cet6.8) and the influence on the aggregate index calculated for the tangible element quality dimension (IAIP1.cet) is illustrated in fig. no. 1.

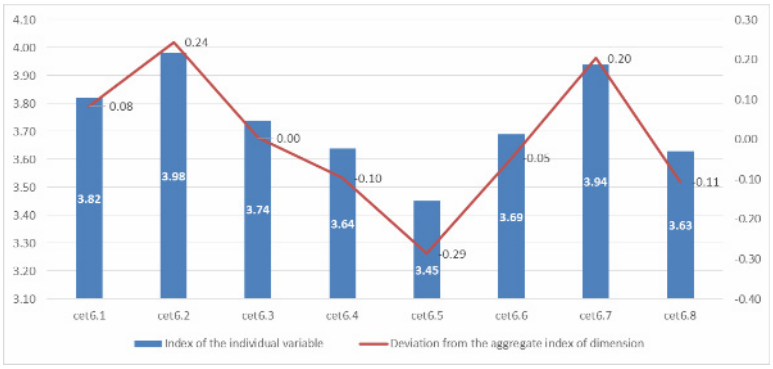

Fig. no. 1 Deviation of variables from the average of tangible elements quality dimension index
Source: Developed by author

The lowest value is registered by the individual variable cet6.5 (the perception of payment procedures for hospital services), due to the fact that the payment procedures are not clear, many services being included in the basic insurance package. The lack of information on tariffs, payment methods leads to a lower average value recorded by this variable. The highest value is recorded by the individual variable cet6.2 (the perception of patients regarding the quality of medical equipment), given that the patients are interested in the hospital facilities that can influence the quality of the medical act.
The performance of the medical act depends on the quality of the medical equipment, which is among the most visible resources during the medical act. The ECHS patients appreciate the quality of medical equipment, this variable having an average score that places it on a good level of the performance scale.
Although the average score (3.74) is relatively large, approaching the high level of the measurement scale, we must take into account patients' sensitivity to the opinion of doctors and hospital staff about their answers to statistical surveys on medical services. The in-depth analysis of this dimension indicates a more favorable perception of the quality of medical equipment as a result of investments made in recent years and an unfavorable perception of hospital service payment procedures, which remain cumbersome, often unknown to patients.
Exploring the validity of the second hypothesis involves analyzing the responses obtained with the individual variables fiab7.1-fiab7.6 (items related to the reliability dimension). After analyzing the frequencies and taking into account the aggregate index calculated for the reliability dimension (4.04), we can conclude that the IP2 hypothesis is validated. The ECHS *patients believe that there is a good level of reliability of the services provided.*

The difference between the individual variables that form the reliability dimension (fiab7.1-fiab7.6) and the influences on the aggregate index calculated for the reliability dimension (IAIP2.fiab) is illustrated in fig. no. 2.

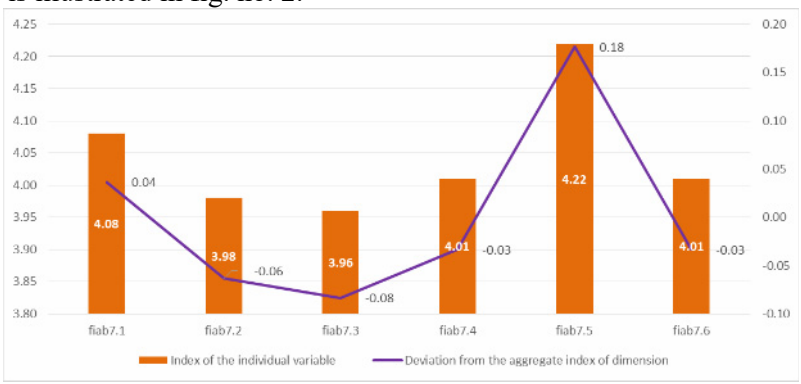

Fig. no. 2. Deviation of variables from the average of reliability dimension index
Source: Developed by author

The lowest value is the individual variable fiab7.3 (medical test procedure), due to the fact that the testing procedures are affected not only by the performance of human resources but also by the quality of the technical equipment. Although it is below the average for the reliability dimension, this individual variable records a fairly high average value (3.96), close to the good level. The highest value is the individual variable fiab7.5 (the clarity of instructions provided by nurses), as patients communicate better with nurses, their language being easier to understand than doctors.
The individual variable fiab7.4 (the clarity of the physicians' explanations given to patients about their condition) is below the average reliability dimension, which reveals a better communication of nurses to patients than physicians.
The average recorded score of size (4.04) is at the high level of the measurement scale. The in-depth analysis of this dimension indicates a more favorable perception of the individual variables that characterize the performance of human resources and a more unfavorable perception of the individual variables that characterize the performance of non-human resources.
Investigating the validity of the third hypothesis involves studying the responses obtained for the individual variables emp8.1-emp8.8 (items related to the empathy dimension). After analyzing the frequencies and taking into account the aggregate index calculated for the empathy dimension (3.98), we can conclude that the IP3 hypothesis is invalidated. The patients of the Slatina County Emergency Hospital believe that there is an average level of hospital staff empathy.
The differentiation between the individual variables that make up the dimension of empathy (emp8.1-emp8.8), as well as the influences on the aggregate index calculated for the empathy dimension (IAIP3.emp) is illustrated in fig. no. 3.

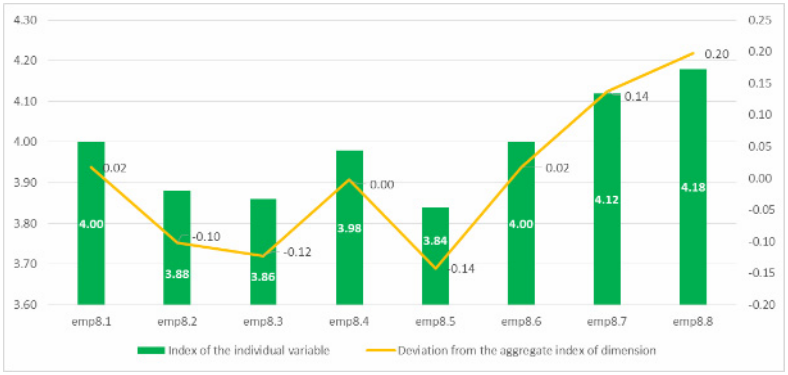

Fig. no. 3. Deviation of variables from the average of empathy dimension index
Source: Developed by author

The lowest value is registered by the individual variable emp8.5 (the perception of the programming process for consultation). This result correlates with the result of the tangible quality elements dimension (the lowest value is the individual variable cet6.5 related with hospital service payment procedures), indicating that hospital procedures are cumbersome, sometimes ineffective, and discontent with patients.
The highest value is registered by the emp8.8 individual variable (patient perception of the politeness of all staff), since patients often come in contact with non-medical staff and their behavior is important for the appreciation of medical services in their completeness.
The average recorded score of dimension (3.98) is relatively high being practically close to the good level of the measuring scale. The in-depth analysis of this dimension indicates a more favorable perception of the patience of physicians and nurses, the politeness of all staff as a result of increased rewards and an unfavorable perception of programming, registration, hospitalization and waiting procedures, which remain cumbersome, inefficient, time-consuming, which dislikes patients.
Exploring the validity of the fourth hypothesis involves analyzing the responses obtained in the case of individual variables resp9.1- resp.9.6 (items related to the responsiveness dimension). Following the frequency analysis and taking into account the aggregate index calculated for the responsiveness dimension (3.95) we can conclude that the IP4 hypothesis is validated. ECHS patients believe that there is an average level of responsiveness of the services provided.
The differentiation between the individual variables that form the responsiveness dimension (resp.9.1-resp.9.6), as well as the influences on the aggregate index calculated for the responsiveness dimension (IAIP4.resp) is illustrated in fig. no. 4.

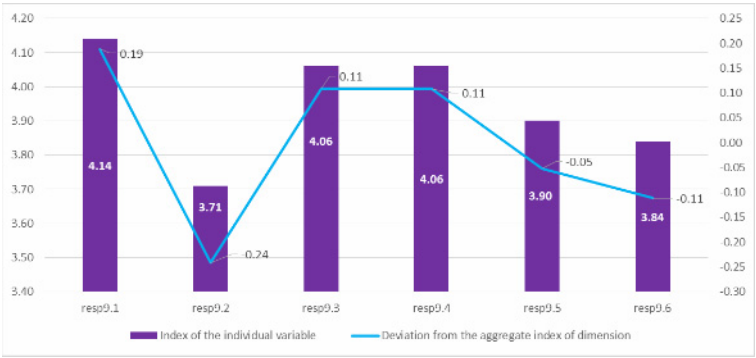

Fig. no. 4. Deviation of variables from the average of responsiveness dimension index
Source: Developed by author

The lowest value is recorded by the individual variable resp.2.2 (presence of physicians at night), because fewer doctors are interested in making guards, and those who make guards are overworked, which makes their presence is not felt by patients. The highest value is recorded by the individual variable resp.9.1 (the physician's response to patients' requests), which indicates that physicians have a high level of responsiveness.
The average recorded score of dimension (3.95) is relatively high, being very close to the good level of the measurement scale. The in-depth analysis of this dimension indicates a more favorable perception of the individual variables that characterize the response of physicians and nurses to patients' demands.
Investigating the validity of the fifth hypothesis involves studying the responses obtained for the individual variables asig10.1-asig10.8 (items related to assurance dimension). Following the frequency analysis and taking into account the aggregate index calculated for the assurance dimension (3.92) we can conclude that the IP3 hypothesis is validated. ECHS patients believe that there is an average level of insurance provided at the hospital.
The difference between the individual variables that form the assurance dimension (asig10.1-asig10.5) and the influences on the aggregate index calculated for the assurance dimension (IAIP5.asig) is illustrated in fig. no. 5.

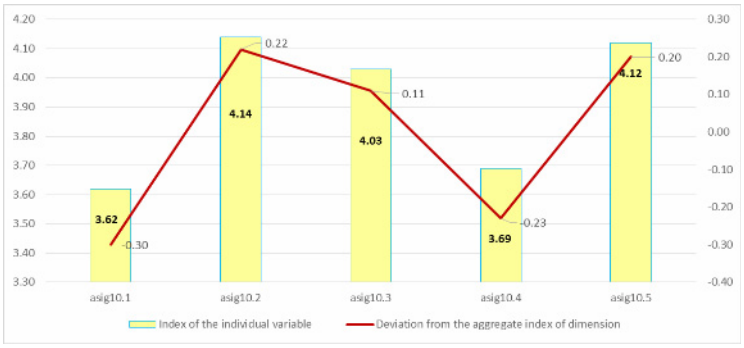

Fig. no. 5. Deviation of variables from the average of assurance dimension index
Source: Developed by author

The lowest value is recorded by the individual variable asig10.1 (patient perception of the hospital building design). This variable expresses the performance of non-human resources, indicating that patients have no confidence in the way it was built a public hospital in the communist era, desiring new modern facilities that provide everything needed for health care. The highest value is registered by the individual variable asig10.2 (patient perception on trust in physicians), as patients are satisfied with the involvement, empathy and responsiveness shown by doctors at the hospital.
The average recorded score of dimension (3.92) is relatively high being practically very close to the good level of the measurement scale. The in-depth analysis of this dimension indicates a more favorable perception on the trust in physicians and hospital staff and an unfavorable perception on the safety and comfort offered by the hospital building and the hospital's image and reputation, which still suffers from the lack of material and financial resources and negative high-impact of publicity cases.

Conclusions

Health managers need to identify key determinants of service performance to ensure high quality services at a reasonable cost. Patient performance perception leads to a substantial effect on operational performance (labor productivity, efficiency and effectiveness of human and non-human resource use). Research conducted in the Romanian health system suggests that the services offered by public hospitals are not entirely reliable and do not only partially

meet the needs of the clients. It is imperative for public hospitals to determine the quality aspects of critical services for patient satisfaction and their relationship with operational performance in order to improve efficiency, labor productivity and meet the needs of their clients.

In this paper we aim to investigate the perception of patients' on service performance adapting the SERPERF model to the specifics of a public hospital. The SERPERF model is tested in the Emergency County Hospital of Slatina. The only dimension that exceeded level 4 (good) was reliability, the other four ranging between levels 3 and 4. These results show that the performance of the services offered within the Slatina County Emergency Hospital is at the limit between the average level and the good level. Our research provides a useful tool for public hospitality managers that can be used to assess the performance of the services provided.

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SPIRITUALITY, A FACTOR OF SUSTAINABILITY

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Abstract
In the last decades, many facets of the society have changed with regards to sustainability and responsibility. The level of awareness is influencing towards more responsibility. Spirituality could have a great impact regarding this aspect. Spiritual individuals are responsible human beings, who take into account their own actions in general. Therefore, it can be assumed that true conscious consumers could be spiritual individuals more or less. The concern regarding the environment and future generations has augmented the number of researches and projects regarding responsible or conscious consumption. More and more companies started to be more conscious regarding their products and services. The concern regarding the environment and future generations has augmented the number of researches and projects regarding responsible or conscious consumption. More and more companies started to be more conscious regarding their products and services. Although, they have reduced some of the damaging and polluting activities, they are still producing harmful materials for the environment. This research will analyze the degree of the online consumers' responsibility towards the environment and their selves, the openness towards sustainability and spirituality and the connection between these concepts. As well, how consumers could influence large companies to refocus their production towards sustainable products and services.

Keywords
Sustainability, responsibility, consumer, social media, conscious, spirituality.

JEL Classification
Q01, Q55

Introduction

The responsible consumers are, first of all, citizens for whom human rights, animal rights, social assistance and the environment are important. Such citizens will always consider the effects of what their choices will have on these things before anything is consumed. When they choose which products to consume or buy, they are taking into consideration more than the personal fulfillment of the product or service, and do not make a comparison with others similar, in terms of technical superiority - for technological products, taste - food products, or appearance - fashion or decorative object etc. In addition to the aspects mentioned before, and the price-to-price ratio, the conscious consumers will always be preoccupied of how the product or service will affect the environment and other beings, through its manufacture effects, along with the company's reputation. For example, between clothing produced by a

company known to have an environmentally detrimental production process and clothing manufactured by a company known for its organic production processes, the conscious consumers will always select the organic product of the clothing company. Responsible or conscious consumers are more aware of the inner and outer worlds. Thus, they have a high degree of sensibility. This sensibility has emerged due to several aspects, such as the development of empathetic capacities, the vast amount of information at their disposal. The instant access to knowledge and interactive communication through the social media platforms has facilitated the evolution of communities, implicitly the society as a whole (Sârbu, Alecu,& Dina, 2018).
The creeds and perceptions of many cultures have merged, therefore, adapting, sharing and accepting different beliefs as one. The term "spirituality" is associated frequently with awareness and consciousness and it is utilized more often nowadays. Spirituality and religion are not necessarily one and the same thing. Religion is the outer form, spirituality is the inner content. Religion is the shell, spirituality is the seed. Religion is a set of beliefs, spirituality is a continuum of experiences. You can be an adept of spirituality without attending a church or temple. You can find your spirituality by sharing it with others in intimacy, in communion with nature, by putting yourself in the service of others. Being a spiritual person is to see without judging - seeing not only with the eyes but also with the heart.

The influence of spirituality and responsibility on the sustainability trend
Spirituality is all about being aware of oneself and everything around. When people rise their level of consciousness, they start to accept and empathize with all aspects of the environment. Progress, quality, innovation, intelligence, self-protection, preservation and conservation of things resulted from spirituality. It is the secret for a healthy society, the driver of sustainability (Schmid, Olaru & Verjel, 2017).
The German author, sociologist and founder of the Denken der Zukunft (Future Thinking), Bernard Mutius, said that "people need a second enlightenment", and must learn to think and feel in new ways. In the past decades, spirituality was primarily related to religion. It was generally defined as the connection with the divinity. From another perspective, it has been theorized in fields like philosophy, psychology, business, and sociology. Beginning from the basic feeling of the bond with God and the church, its meaning has been extended to what means the human spirit, being associated with human intelligence. The word "spirituality" has its origin from the Latin word "spiritus", which means "to breath" - the breath of life. After exhaustive reviews on defining spirituality, Kumara
described spirituality as, "an individual's endeavors to explore and, deeply and meaningfully connect one's inner self to the known world and beyond" (Kumara, 2013). This definition revealed that every individual desires two things, in a conscious or unconscious manner. Firstly, to feel a connection to something greater than oneself and secondly, to be able to benefit other people and the world around him. Sometimes, it is believed that spirituality and religion are the same thing, but it should be noted that spirituality and religion are two different terms and treated as two different constructs in studies carried out in past (Kumara et al., 2013). Spirituality is equivalent with the soul, the immaterial, ideal, and intellectual. The Director of the George Washington Institute for Spirituality and Health, Christina Puchalski, contends that „spirituality is the aspect of humanity that refers to the way individuals seek and express meaning and purpose, and the way they experience their connectedness to the moment, to self, to others, to nature, and to the significant or sacred."

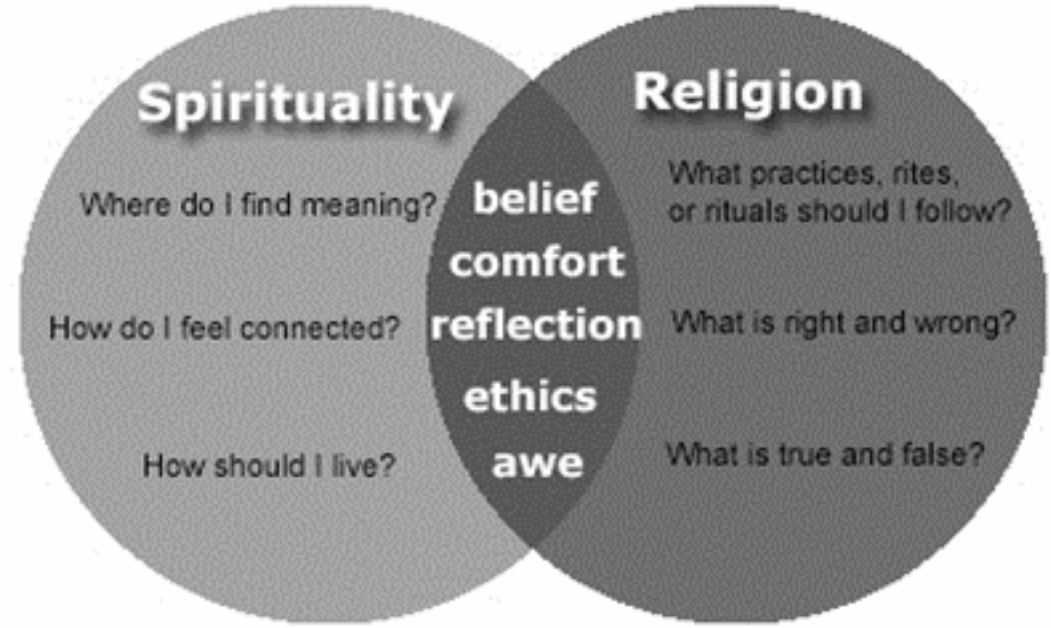

Fig. no. 1. Spirituality and religion
Source: https://www.takingcharge.csh.umn.edu/what-spirituality

Giacalone and Jurkiewicz (2003) declare that spirituality within the workplace can be either active or passive, and that these assumed contradictory factors must be mixed together in order to determine it. Their definition, which follows, attempts to integrate these conditions: "Workplace spirituality is a framework of organizational values evidenced in the culture that promotes employees' experience of transcendence through the work process, facilitating their sense of being connected to others in a way that provides feelings of completeness and joy". Spirituality is considered to improve organizational learning (Emmons, 2000), to unify and elevate communities (Choi, 2008), to please the necessity for connecting with others during work, and even to work itself (Khanna and Srinivas, 2000), and is the root of a harmonizing and healing expression of wisdom, compassion, and connectedness that transcends all socio-centric, anthropocentric, or egocentric forms (Maxwell, 2003). Leaders have an essential part in the passage of incorporating spirituality at work, as well as instill a sense and direction of the spiritual realm at every level, such as, individuals, teams, departments, and organization (Borges et al., 2000). Spirituality maintains the sustainable part and balance of every system.

Statistical data

This section contains statistical data regarding the online traffic for topics such as spirituality, and sustainability.

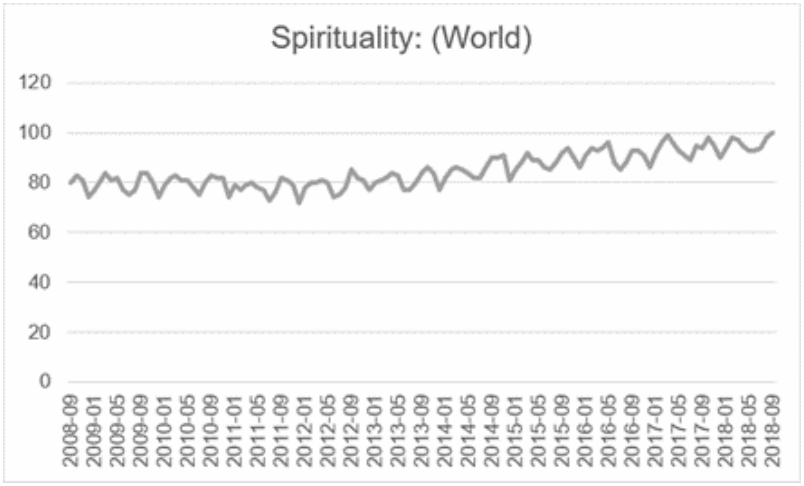

Fig. no. 2 Online international traffic with regards to spirituality
Source: Google Trends

The trend regarding the international traffic on spiritual topics had an easy growth. People are more and more interested in these kind of topics because they perceive them as beneficial from many points of view, like, personal development, some kind of connection, positive feelings, and self-confidence.

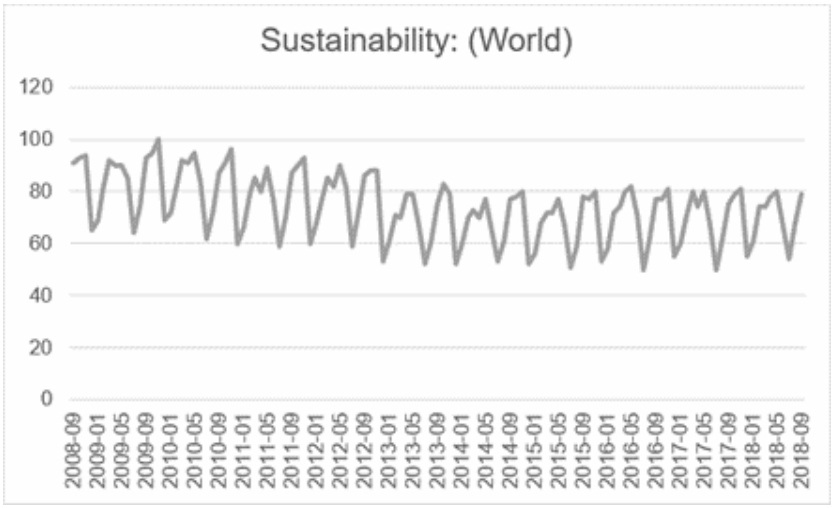

Fig. no. 3 Online international traffic with regards to sustainability
Source: Google Trends

Seasonality with lows around May and September, maybe because of the summer holidays. Unfortunately, the general trend recorded an easy decrease with regards to the sustainability topic. There is the possibility that in many countries to be an increased traffic, but to be covered up by those with low traffic.

Questionnaire analysis

This research analyzes the degree of responsibility that online consumers have towards the environment and their selves, and the openness towards sustainability, responsibility, spirituality and the connection between these concepts. As well, how consumers could influence large companies to refocus their production towards sustainable products and services through awareness. The number of addressed questions was 11. The questionnaire

has at the same time a quantitative and a qualitative pattern. The quantitative questions have been used to establish several indicators related to the social responsibility presence, on Facebook. The qualitative approach is reflected in the correlations that can be established between the independent variables on the Internet: social media, conscious behavior and spiritual information. The questionnaire has been auto administrated and it was sent on Facebook and on What's App groups.

Description of the used dataset

Table no. 1 General information about the respondents

Answers				113		
Residence				Professional Status		
Romanian		69%		Students		17%
Other Countries		31%		Employees		61%
				Entrepreneurs		19%
				Unemployed		2%
				Retired		1%
Gender				Average Income		
Female		57%		<500 Euros		21%
Male		43%		501-2000 Euros		66%
Unknown		0%		>2001 Euros		13%

Source: Authors

Results

In the charts below, we can find information with regards to the respondents' answers.

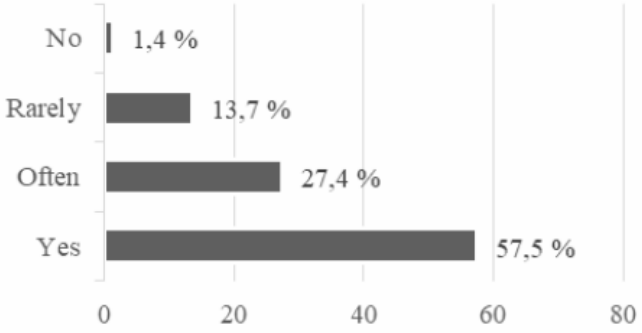

Fig. no. 4 Consumers' concern on the effects of their choices on the environment and/ or other beings when purchasing

Source: Authors

According to the chart above, most of the respondents take into consideration the effects of their choices, totally or partially. The consequences of their actions are related to investing in the future. When thinking about the consequences of actions, many of the respondents

have created for themselves a point of view towards ecology and other areas of life. Specifically they like to think about future generations.

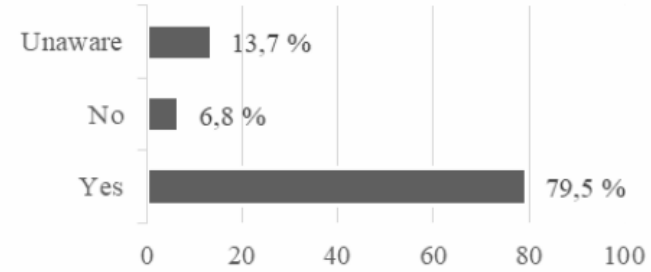

Fig. no. 5 Consumers' beliefs regarding the healthy contribution of spirituality on the environment
Source: Authors

Almost 80% of the respondents believe that spirituality could contribute to the protection of the environment and quality of life. The environment represents the natural surroundings, being an important part of our way of living. It affects our life, existence and activities, directly and entirely, in every corner of the planet.

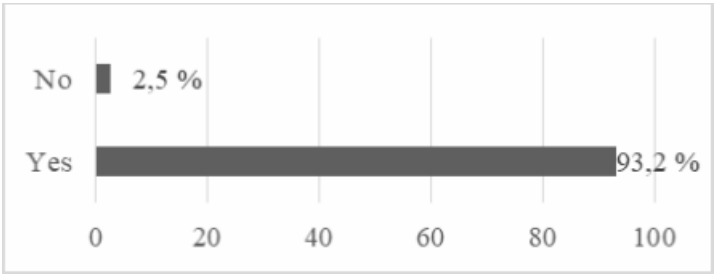

Fig. no. 3 Respondents' opinion with regards to the contribution of the world's population in maintaining a faulty system by purchasing environmental unfriendly services and products
Source: Authors

Most of the respondents recognized that the world's population is currently supporting a faulty system by purchasing environmental unfriendly services and products. Due to this aspect, the transition towards a sustainable society is harder. People are not aware that certain aspects are necessary, as reducing the waste of resources, and are hooked up by various needs.

Conclusions

According to the questionnaire answers, most of the respondents consider themselves to be responsible/ conscious consumers and pro regarding the environment protection. The respondents consider that spirituality contributes to the preservation of the environment and quality of life. They think that companies could reorient towards the production and sale of sustainable, clean, healthy products and services, if they would no longer purchase such environmentally harmful products. The empathy and connectedness resulted by a spiritual approach could easily change consumers and providers' perception regarding the environment. More companies, corporations and institutions have to implement spirituality in their cultures and teachings in order to become more aware, conserve the environment and be more competitive, simultaneously. As well, be an example for consumers and other

stakeholders, due to their power of influence. This denotes that they are interested in sustainability and health to a certain degree.
The statistical data collected from Google Trends matches at some degree the questionnaire answers. The trend tends for spirituality. Which could be very well implemented in sustainability, in order to be more attractive.
By implementing spirituality on a global scale, the world will change naturally, without much effort.

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APPROACH OF THE EMPLOYABILITY IN EUROPE FROM THE PERSPECTIVE OF EDUCATION AND TRAINING

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Abstract
Automation and globalization lead to resizing jobs. Whether it is simpler jobs or more complex jobs due to technological change, people need higher skills to help them overcome the changes in the labour market. The article analyzes the situation regarding employability in the member countries of the European Union. There are presented aspects regarding the evolution of the population as well as the number of employees. The quality and relevance of acquired knowledge, skills and competencies influence the degree of growth of employability. The challenges we face when it comes to skills call for interventions in education and training systems. Fast access to the labour market immediately after graduation is an asset that can positively influence the subsequent socio-economic development of people. At the same time, investment in education and training should take into account the aging of the population, but also the reduction in the number of young people. Comparative surveys of the employment rate by education level as well as recent graduates complement the analysis.

Keywords
Employability, Europe, education and training,

JEL Classification
J21, J24

Introduction

Making sustainable growth based on job creation and economic recovery is one of the tasks facing Europe (EC, 2015). Another challenge for finding solutions is the importance of preserving competitiveness in a globalized economy amid the aging of the population. Thus, economic growth can be considered to be based on education and training. Vocational education and training systems can raise the level of skills and competencies of the workforce. Technological transformations, environmental changes and demographic changes lead to changes in the labour market. In this context, education and training can contribute to raising the skills and competences of the workforce. Improving knowledge, skills and competencies allows people to grow and expand their outlook. Maintaining the current standard of living can be achieved through an appropriate set of skills and competencies. Acquiring the necessary skills and competences to achieve personal

fulfillment can lead to increased employability and can support a high rate of employment (EC, 2018b). Personal and professional development should be a responsibility to be assumed by each student and student. Awareness of lack of personal skills leads students to acquire those attributes that improve their employability skills (enthusiasm, maturity, confidence) (Creasey, 2013). But aspects of employability also take into account the health status of the population as well as the aging of the population (Burlacu et al., 2018). A culture of sustainability is based on education, training and lifelong learning. Recognizing the value of education and training potential, the European Union wants to create a European education area by 2025. By developing new skills for the digital economy, it is intended to create new jobs, achieve growth as well as the establishment of a social equity (EC, 2019).

Literature review

Lifelong learning can be considered as another part of the career journey. Fulfillment of new tasks at the workplace can be accomplished through the prior acquisition of skills beyond the core responsibilities. This process can ensure a high degree of employability (Osborne, 2017).

In order to live, learn and work in a digital society, certain literacy skills are needed (JISC, 2014). Improving these digital literacy capacities can lead to increased employability (Peacock & Bacon, 2018). Modern technologies and new production models are a consequence of investing in research and innovation. Resources could be used in a sustainable way. Progress has boosted the creation of new jobs. Thus, in the third quarter of 2018, the occupancy rate of persons in the 20-64 age group increased to 73.5%. This is the highest figure ever recorded in the European Union. This growth has positively influenced productivity and growth in Europe (EC, 2019).

Technologies have made more and more jobs automate. Thus, skills requirements have changed. Digitization has increased mobility. These issues have an impact on education and training. However, some international surveys indicate a high percentage of adolescents and adults with insufficient basic skills. Thus, in 2015, one in five students could not develop enough science, math and reading skills. Throughout their lifetime, they will face important obstacles in terms of employability and social inclusion (EC, 2017b). Also, in some countries almost one third of adults have the lowest numeracy and literacy skills (EC, 2018b). It is considered that in formal education and training systems, individuals should acquire numerical skills, literacy skills, scientific and foreign language skills. Also, personal fulfillment and development can be based on digital competences, entrepreneurial mindsets, critical thinking skills, or problem-solving skills. Thus, these skills can be the basis for the development of superior skills. Acquiring such more complex skills can lead to innovation and creativity (EC, 2016).

Methodology of research

Resizing jobs is due to automation, but also to globalization. It cannot be appreciated today what percentage of current jobs will be replaced by robots and what percentage of current jobs will be outsourced. We also cannot tell exactly what skills we will need to take up a job in the future (Osborne, 2017). This article has made an analysis of the employment situation in the EU Member States. In the first part, the evolution of the population for the 15-64 age group for the period 2009-2017 is presented. Also, for the 20-64 age group, a comparison is made of the employment rate according to the level of education. In the second part, the evolution of the number of employees for the 20-34 age group as well as the recent graduates is presented.

Results and discussions

Increasing employability and stimulating innovation can be determined by the quality and relevance of acquired knowledge, skills and competences. Capitalizing on the advantages of the digital era leads to increased learning mobility and increased labour mobility (EC, 2015). Perspectives of personal, social and professional fulfillment of people are limited by the existence of low skills and basic knowledge.

Thus, Table 1 shows the evolution of the population by educational attainment level for the 15-64 age group (millions of people). From the data presented in Table 1, it is noticed that as compared to 2009, in 2017, the number of people with 0-2 levels has dropped significantly in: Spain (-2,845 million people), France (-2,584 million people), Italy (-2,502 million people), United Kingdom (-2,010 million people).

Table no. 1 Evolution of the population by educational attainment level

Countries	Less than primary. primary and lower secondary education (levels 0-2)			Upper secondary and post-secondary non-tertiary education (levels 3 and 4)			Tertiary education (levels 5-8)		
	2009	2013	2017	2009	2013	2017	2009	2013	2017
European Union	104,672	90,843	84,799	154,131	151,825	150,198	72,815	82,670	91,042
Belgium	2,310	2,206	1,978	2,718	2,764	2,698	2,098	2,288	2,590
Bulgaria	1,413	1,075	0,982	2,725	2,706	2,486	0,984	1,079	1,128
Czechia	1,127	0,922	0,837	5,308	4,933	4,598	0,996	1,298	1,480
Denmark	1,137	1,025	0,933	1,442	1,437	1,453	0,950	1,012	1,142
Germany	11,781	9,012	10,622	29,897	29,134	29,737	11,940	12,881	13,274
Estonia	0,173	0,138	0,142	0,455	0,452	0,409	0,271	0,281	0,293
Ireland	0,920	0,792	0,664	1,099	1,073	1,149	0,978	1,111	1,229
Greece	2,908	2,448	2,014	2,973	2,937	3,001	1,464	1,705	1,870
Spain	15,417	13,957	12,573	7,217	7,177	7,494	8,537	9,463	9,984
France	12,893	11,156	10,309	16,649	17,189	17,690	10,306	11,513	12,815
Croatia	0,728	0,633	0,541	1,729	1,709	1,621	0,417	0,481	0,559
Italy	18,333	17,003	15,831	15,594	16,514	16,497	4,985	5,655	6,398
Cyprus	0,168	0,147	0,129	0,206	0,227	0,220	0,164	0,204	0,215
Latvia	0,313	0,221	0,187	0,829	0,752	0,673	0,311	0,359	0,368
Lithuania	0,389	0,286	0,223	1,217	1,107	0,986	0,549	0,591	0,645
Luxembourg	0,092	0,093	0,103	0,133	0,137	0,120	0,097	0,125	0,115
Hungary	1,687	1,513	1,352	3,927	3,840	3,723	1,140	1,295	1,340
Malta	0,177	0,156	0,143	0,072	0,080	0,101	0,037	0,051	0,069
Netherlands	3,580	3,132	2,896	4,462	4,494	4,494	2,938	3,166	3,489
Austria	1,324	1,250	1,120	3,348	3,397	2,956	0,887	0,997	1,725
Poland	4,925	4,107	3,377	16,651	15,649	14,546	4,763	5,770	6,394
Portugal	4,867	4,072	3,440	1,241	1,578	1,772	0,921	1,209	1,448
Romania	4,534	3,928	3,531	8,805	7,800	7,557	1,689	1,878	2,007
Slovenia	0,295	0,260	0,228	0,842	0,802	0,744	0,277	0,342	0,390
Slovakia	0,646	0,570	0,558	2,745	2,613	2,439	0,526	0,687	0,783
Finland	0,860	0,726	0,631	1,578	1,592	1,552	1,090	1,171	1,251
Sweden	1,535	1,399	1,323	2,836	2,789	2,689	1,667	1,918	2,253
United Kingdom	10,143	8,617	8,133	17,434	16,945	16,793	11,832	14,142	15,787

Source: own processing according to data published by Eurostat, 2019

Also, as compared to 2009, in the year 2017 the number of people with 3-4 levels dropped significantly in: Poland (-2,105 million people), Romania (-1,248 million people), Czechia (-0,710 million people), United Kingdom (-0.641 million people). At the same time, as compared to 2009, in the year 2017 the number of people with 5-8 levels increased

significantly in: United Kingdom (+3,955 million people), France (+2,509 million people), Poland (+1,631 million people).
An important emphasis should be put on the process of transition from education to work (EC, 2012). Fast access of graduates to a first job influences the subsequent socio-economic situation of individuals. Ensuring income, professional success and personal, family, can be positively influenced. Reducing the number of young people and the aging of the population are demographic challenges that need to be taken into account when investing in education and training.
Table 2 presents the comparative situation of the employment rate by educational attainment level for the 20-64 age group for the year 2005 and for 2017 (%).

Table no. 2 Employment rate by educational attainment level

Countries	Less than primary, primary and lower secondary education (levels 0-2)		Upper secondary and post-secondary non-tertiary education (levels 3 and 4)		Tertiary education (levels 5-8)	
	2005	2017	2005	2017	2005	2017
European Union	55,5	54,9	69,4	72,6	82,6	84
Belgium	48,8	45,9	68,8	67,8	82,8	82,2
Bulgaria	39,4	44,4	66,5	72,8	80,3	85,5
Czechia	39,6	49,2	72,5	79,4	84,6	84,2
Denmark	62,5	60,2	78,9	78,9	86,2	85,4
Germany	51,9	59,6	69,6	80	82,8	88,1
Estonia	50,5	65,7	70	76,8	83,9	85,5
Ireland	58,5	50,5	75	69,6	85,6	84,2
Greece	58	49,2	62,7	54,1	80,9	70,8
Spain	59,5	54,6	69,2	63,4	80,6	79,4
France	57,9	51,8	72,3	69,7	78,9	83
Croatia	45,1	34,7	61,3	64,1	79,7	81,5
Italy	51,7	51	68,3	65,4	78,5	78,2
Cyprus	64,8	57	74,6	68,5	85	79,1
Latvia	50,5	56,7	69,5	71,1	83,6	86,9
Lithuania	46,6	44,1	69,1	69,7	86,3	90,1
Luxembourg	60,4	56,4	68	68,3	82,5	83,9
Hungary	37,7	53,9	66,1	74,2	82,5	84,3
Malta	48,2	59,2	77,6	80,5	82,8	90,5
Netherlands	58,5	61,2	75,7	78,8	84	87,9
Austria	52	53,9	72,5	75,7	83,5	84,8
Poland	36,2	40,8	57,8	67,6	81,1	86,8
Portugal	71,3	67,7	66,5	74,9	85,7	83,6
Romania	52,5	54,7	65	68,7	84	87,9
Slovenia	55,1	49,3	71,3	71,5	86,6	86,2
Slovakia	25,3	37,3	67,4	73	83,2	78,5
Finland	57,5	51,3	72,4	71,4	84,2	84,4
Sweden	64,4	61,8	78,8	83	86	88,1
United Kingdom	64,1	63,6	79,6	78,1	87,5	85,1

Source: own processing according to data published by Eurostat, 2019

It can be seen that employment rates vary depending on the level of education. Thus, in 2017 compared to 2005 (for 20-64 age group) the share of people with 0-2 levels who are in employment, in Hungary (+16.2%), Estonia (+15.2%), Slovakia (+12%). Also, the share of people with 0-2 levels who are in employment decreased, in: Croatia (-10.4%), Greece (-8.8%), Ireland (-8%). The share of people with 3-4 levels and 20-64 age group decreased in

Greece (-8.6%), Cyprus (-6.1%), Spain (-5.8%), Ireland (-5.4%). At the same time, the values for: Germany (+10.4%), Poland (+9.8%), Portugal (+8.4%), Hungary (+8.1%). In 2017 compared to 2005 the share of people with 5-8 levels who are in employment decreased, in Greece (-10.1%), Cyprus (-5.9%), Slovakia (-4.7%). Also, the share of people with 5-8 levels increased in Malta (+7.7%), Poland (+5.7%), Germany (+5.3%), Bulgaria (+5.2%).

Within the mechanisms of measuring and evaluating academic performance, the quality of graduates is an important indicator. Employers are interested in graduates with higher education who are familiar with many foreign languages, are dynamic and flexible, have initiative and show adaptability to the conditions imposed by jobs (Stăiculescu et al., 2018). Table 3 presents the evolution of the number of recent graduates for the 20-34 age group by gender (persons).

Table no. 3 The evolution of the number of recent graduates

Countries	2009		2013		2017	
	Males	Females	Males	Females	Males	Females
European Union	40428536	38194473	38080371	35176068	39172708	36250195
Austria	715942	693046	759992	717030	794758	770585
Belgium	829722	817341	852089	843685	878898	879480
Bulgaria	615427	540744	497859	484716	522763	486076
Croatia	339522	317451	227890	218155	272951	239836
Cyprus	77650	76745	66954	68130	69711	77506
Czechia	1102786	925810	981827	776764	961344	820703
Denmark	445791	427555	435445	390550	483341	426567
Estonia	111260	84479	118763	94563	120156	94598
Finland	406086	372705	421164	396989	439766	365185
France	4647516	4655514	4666699	4499460	4304203	4431990
Germany	6342614	6100703	6759473	6320145	7285492	6492053
Greece	832113	712860	457619	390940	479850	461955
Hungary	887022	804583	777348	680978	846192	706186
Ireland	418163	454967	363049	381460	382914	386611
Italy	3443118	3047931	2501692	2369333	2843527	2530413
Latvia	175157	153016	179442	155232	154074	141137
Lithuania	233115	241217	221186	221010	238190	227759
Luxembourg	43222	42020	45084	43351	59703	51535
Malta	42640	40121	44589	40673	49457	47354
Netherlands	1404764	1381225	1362392	1298021	1457524	1424797
Poland	3864681	3443238	3506823	2983419	3599058	3106150
Portugal	916263	865774	649016	637473	697543	680271
Romania	1728471	1587671	1458146	1285040	1459140	1304514
Slovakia	521006	472923	474439	421839	520834	429197
Slovenia	191964	170438	170567	134444	169110	130032
Spain	3936684	3708278	2760845	2647523	2738099	2819575
Sweden	717607	693506	814227	770670	912611	848572
United Kingdom	4953930	4915414	5476134	5368921	5874920	5553913

Source: own processing according to data published by Eurostat, 2019

If the weights give us a picture of the percentage of recent graduates finding a job, the quantitative value (number of graduates) also indicates the number of jobs that recent graduates identify and occupy at the same time.

Based on the information provided by Eurostat, based on the recruiting rate of recent graduates, given the number of people 20-34 age group, we have calculated the number of recent graduates.

For the year 2017, the countries where the number of recent male graduates was highest are Germany, United Kingdom, France, Poland, Italy, Spain, Romania, the Netherlands, the Czech Republic and Sweden. For the same year, the countries with the highest number of recent female graduates were: Germany, United Kingdom, France, Poland, Spain, Italy, the Netherlands, Romania, Belgium and Sweden.
It is also noted that in 2017 compared to 2009, in Germany and the UK, the number of recent male graduates increased by over 900,000 people. Also, for the same period in Spain, the number of recent male graduates has fallen by about 1,200,000 people. In Italy, values have fallen by about 600,000 people, and in France by over 300,000 people.
Employers are interested in showing graduates at the same time that they have acquired academic abilities, but also that they have developed key skills. It is considered that they facilitate the transition from education to employment (Holmes & Miller, 2000). In this respect, Table 4 shows the evolution of the number of employees according to the level of education, for people 20-34 age group (million people).

Table no. 4 Number of employees by level of education

Countries	Less than primary. primary and lower secondary education (levels 0-2)			Upper secondary and post-secondary non-tertiary education (levels 3 and 4)			Tertiary education (levels 5-8)		
	2009	2013	2017	2009	2013	2017	2009	2013	2017
European Union	19.878	16.955	15.022	52.664	48.880	46.821	26.071	28.453	29.940
Belgium	0.343	0.380	0.336	0.955	0.959	0.936	0.743	0.790	0.848
Bulgaria	0.261	0.231	0.209	0.847	0.878	0.725	0.276	0.327	0.344
Czechia	0.156	0.144	0.143	1.865	1.505	1.263	0.394	0.508	0.540
Denmark	0.223	0.205	0.206	0.471	0.462	0.484	0.254	0.271	0.343
Germany	2.608	2.304	2.379	9.153	8.778	8.917	2.693	3.230	3.653
Estonia	0.043	0.037	0.035	0.160	0.152	0.135	0.082	0.088	0.091
Ireland	0.149	0.116	0.063	0.464	0.405	0.404	0.457	0.435	0.416
Greece	0.518	0.348	0.214	1.220	1.043	0.976	0.535	0.608	0.602
Spain	3.744	3.104	2.447	2.981	2.505	2.354	3.531	3.134	2.807
France	1.857	1.626	1.509	5.226	5.280	5.314	4.245	4.428	4.512
Croatia	0.077	0.056	0.039	0.643	0.577	0.529	0.137	0.172	0.198
Italy	2.992	2.579	2.225	5.974	5.717	5.394	1.758	1.825	2.054
Cyprus	0.028	0.025	0.021	0.075	0.082	0.075	0.076	0.092	0.097
Latvia	0.090	0.057	0.045	0.262	0.226	0.193	0.111	0.132	0.124
Lithuania	0.082	0.057	0.036	0.356	0.309	0.274	0.212	0.219	0.235
Luxembourg	0.017	0.017	0.017	0.043	0.046	0.045	0.035	0.041	0.043
Hungary	0.305	0.259	0.257	1.367	1.189	1.101	0.405	0.456	0.412
Malta	0.040	0.031	0.030	0.031	0.036	0.043	0.018	0.025	0.033
Netherlands	0.589	0.525	0.470	1.453	1.450	1.486	0.920	1.030	1.189
Austria	0.198	0.187	0.202	1.127	1.127	0.881	0.247	0.311	0.624
Poland	0.630	0.580	0.488	5.687	4.809	4.337	2.428	2.726	2.587
Portugal	1.050	0.668	0.465	0.651	0.704	0.720	0.422	0.486	0.500
Romania	1.166	0.883	0.820	3.195	2.359	2.075	0.772	0.807	0.738
Slovenia	0.034	0.026	0.024	0.309	0.263	0.214	0.096	0.120	0.127
Slovakia	0.077	0.086	0.109	1.052	0.864	0.711	0.228	0.319	0.342
Finland	0.112	0.110	0.108	0.601	0.619	0.619	0.280	0.290	0.302
Sweden	0.212	0.247	0.252	0.954	0.977	0.978	0.554	0.651	0.760
United Kingdom	2.279	2.066	1.874	5.542	5.559	5.638	4.162	4.930	5.419

Source: own processing according to data published by Eurostat, 2019

For the people from 20-34 age group, it is noted that at the European Union level, for the period 2009-2017, the number of those with 0-2 levels decreased by -4.856 million people. Countries where the people with 0-2 levels and 20-34 age group dropped significantly in: Spain (-1,297 million people), Italy (-0,767 million people), Portugal (-0,585 million of people). Also, the number of people with 3-4 levels and 20-34 age group decreased in: Poland (-1.35 million people), Romania (-1.12 million people).
The number of people with 5-8 levels and 20-34 age group was down in: Spain (-0.724 million people). At the same time, the number of people with 5-8 levels and 20-34 age group increased in: United Kingdom (+1,257 million people), Germany (+0,959 million people). At European Union level, in 2017 compared to 2009, the number of people with 5-8 levels and 20-34 age group increased by +3.869 million people.
In order to be able to make decisions about the labour market, individuals need to have relevant and useful information about it. Thus, employability can not only be based on vocational and academic skills. To transform this information into intelligence, in determining the usefulness of information, people often need support. Thus, the opportunity to do things in a different way is based on access to relevant training, but also on employment (Hillage & Pollard, 1998).
The demand for highly qualified people has increased on the labour market. Thus, in 2025, high-level qualifications will account for about half of all jobs. To increase the relevance of curricula, universities should develop partnerships with employers (EC, 2017a).

Conclusions

New jobs require flexibility and adaptability. Developing activities within changing teams also involves setting priorities and goals so that changes can be managed proactively (Glover et al., 2002).
The analysis shows that the number of employees with low levels of education (0-4) has decreased and the number of employees with high levels of education (5-8) has increased. Also, the occupancy rate of people with 3-8 education levels has increased.
To meet both current and future challenges in the labour market, education and training can lead to improved employability (EC, 2012).
The needs of the labour market call for a better transfer of information. Thus, the development of knowledge, skills and competences can be ensured through partnerships between education and training providers, social partners and other relevant stakeholders. Acquiring basic skills at the first levels of education and offering lifelong learning specialized education may be a viable solution to future labour market demands.
Investing in skills, competences and knowledge contributes to maintaining employability. Globalization and technological change produce rapid changes that affect the labour market. Based on investment in skills, skills and knowledge, individuals can thus easily overcome skills mismatches existing on the labour market (EC, 2018a).

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OPTIONS FOR SUSTAINABLE RESOURCE STRATEGIES IN THE EU: THE CASE OF FOREST POLICY

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Abstract

This article has been developed in response to current society's concerns about resource management at European and national level and to take into account the new threats and opportunities that have emerged lately. The working methodology was based on a case study of the resource situation within Europe, focusing on future management strategies in order to establish their sustainable development. The main result of the research is the identification of the current forestry fund, but also the future requirements with the rigorous demands in the context of globalization and, last but not least, the creation of sustainable strategies. The document should therefore contribute to optimizing forest management in sites to achieve the objective of an appropriate conservation status of habitats and forest species, which will be an essential contribution to attain the Europe 2020 objectives of halting and reversing the decline of biodiversity in EU.

Keywords

Strategy, Sustainable Development, Resources, Management

JEL Classification

Q23, Q28, Q56

Introduction

The environment, as a whole of the forest, is increasingly claiming a coherent, flexible and capacitive management, a wide variety of intervention tools, as well as ongoing communication with socio-economic actors, with a view to integrated public governance natural resources.

Given the evolution of human society, public opinion has perceived the degradation and regression of environmental components (forests, waters, air), giving them due importance, thus obliging political and socio-economic actors to participate effectively in conservation and development in a manner durable of everything that surrounds us. In fact, opinion polls at European level demonstrate this, and in the previous years the issue of environmental protection is ranked second in terms of importance, after social problems (unemployment, monetary stability , possession of a home, personal security, etc.). As a result of the worsening of living conditions by deteriorating the quality of environmental factors,

international and national bodies have proposed amendments to improve the state of affairs, with the risk of generating social convulsions.
The various concepts launched and universally accepted in the world are likely to influence decision makers in reconsideration and reassessment of the "factorial characteristics" taken into account in order to rethink development strategies both on the whole as well as on the fields and branches of activity.
Setting up forestry on the sustainable basis of ecological bases only strengthens the pro-nature of this area, mirroring the principles of forest planning outlined since the last century, but reedicated in a modern form.

2. Materials and methods

In order to develop this article based on a research study aiming at the economic and ecological analysis of the strategies for the sustainable development of natural and forest resources at European level, a number of necessary methods and materials were used. In this respect, the research was carried out in two phases, as follows: in the initial phase, the main European directives on the sustainable development of forests, as well as the theoretical information related to their role and impact in the environment and society were studied. In the next step, on the basis of data provided by them, thematic charts were created with the help of software applications that were introduced in the text. At this stage was used the method of comparison, taking into account a series of data starting from 2010 until now regarding the situation of the forestry resource fund within the European Union. At the same time, the priority areas of the forest sustainability strategies have been delineated together with the related objectives.

3. Building and evaluating a working environment on the management of natural resources

In this part of the paper, we will discuss the ways in which an effective framework for resource management and the improvement of economic and ecological externalities can be achieved at global level. In order to go into detail, we will start on the road using the concept of co-management as a collective management mechanism of the available natural resources. Co-management has had a profound impact on the management of natural resources and the recent efforts to integrate ecology, the economy and society (Bown N, 2013).
Adaptive co-management offers considerable input in the light of complex systems. The theory of complex systems considers that nature is an evolutionary process that is distinguished by the adaptive cycles that are built on increasing scales as a size order, leading to uncertainty, nonlinearity and self-organization (Bown N, 2013).
The value of systematic integration of assessment in adaptive co-management is high as it is an essential part of the approach. Assessment is fundamental to identifying change, supporting an adaptive approach that is flexible enough to respond to the challenge of change and that enables progressive learning at individual, community, institutional and political levels.
However, the assessment of the natural resource management policy has been neglected and there is a substantial gap between theory and practice (Jenkins V, 2018).
The central point of an adaptive co-management evaluation is the ability to document the results and respond to critical questions raised by both supporters and opponents.
The demand for assessment of natural resource management has coincided with this period of time and has grown considerably in the 1980s. Documentation has been made of the growing increase in natural resource assessment studies of this period, and it is explained that the assessment process enterprise offers a practical value to resource analysts because it

identifies deficiencies in policies, programs or resource projects and can justify or interrogate both decisions and actions. (Antony J.R, 2013).
Trends in resource management and cooperative governance underline the need for evaluation to also be based on complex thinking (Ollikainen M. 2014.). This important statement was largely developed by Judith Innes, who produced a series of works that set a framework for evaluating collaborative planning using complex adaptive systems (Pülzl H., 2013). In response to these principles and to overcome the many challenging issues they identify in natural resource management assessment (eg criteria, multidimensional impact, intangible results, causal ambiguity, multiple prospects of success), Bellamy et al. (2001) develops a system-based assessment framework.
The instrumental reasoning of adaptive co-management is sustainability, as it aims to solve resource problems through a collaborative process that encourages environmentally sustainable livelihoods (Sotirov M, 2013). It has also been emphasized that progress towards sustainability / sustainability necessarily implies an understanding of the dynamics of the related social / economic-ecological systems.
Adaptive co-management is a process by which institutional arrangements and ecological knowledge are tested and reviewed in a dynamic, continuous and self-organized process of test and error "(Kishor N., 2012.). mentioned at the beginning of the section, is to address collaborative resource issues, while encouraging environmentally sustainable livelihoods.
The elements offered in Table 1 also allow for account to be taken of contextual factors (both problematic and social) derived from the cooperation literature (including partnerships, collaboration and co-management) and, in turn, evidence of which cases of cooperation can be differentiated. The power element (ability to exert influence) is illustrative because it details eight considerations (see Table 1) that should be considered to understand the nature of the arrangement. While the evaluation framework is consistent with the comments describing co-management as a formal or structural agreement, it neglects the functional part of co-management (Carlsson L., 2005).

Table no.1 Framework for use and management of natural resources

Elements	Main considerations
Context	Description of the operational environment; property rights; management systems; scales
Conditions	Perceived interdependence; recognition of mutual benefit; counseling; Managing existing networks opportunities in negotiation
Representation	Scope; organizational vision; diversity; size
Power	Legislation and regulation; policies and guides; democratic procedures; administrative structures; financial arrangements; structures and political processes; historical values and procedures; costs and benefits
Process	Situational issues; vision problems; structuring; outputs

Source: author starting for Plummer, R., FitzGibbon, J., 2004b

4. Strategic options for capitalizing on natural resources and forest ecosystems
Forest ecosystems are threatened by current developments created in the desire to obtain profit at any cost. Net grubbing-up rates (deforestation minus afforestation) are alarming. The Food and Agriculture Organization (FAO) estimates global net annual deforestation rates of about 9 million hectares in the 1990s, or 0.23% of the total forest area, this rate

rising by 15% in the 2000s and decreasing significantly for the current period, but still at alarming rates. The World Institute of Resources has questioned this figure, noting that FAO data includes poor biodiversity plantations as being considered as afforestation processes, preventing natural loss of forests.

4.1 Options for the future

There is a value of the option chosen if someone is willing to pay for the preservation of an asset he is not currently using, but he can use it in the future. A value of existence refers to the desire to pay for preservation without reference to the current use or any intended use. The relevance of these variants is that they can be empowered through mechanisms such as debt-for-nature swaps, official aid, donations to conservation agencies, and pricing mechanisms. .

As with environmental goods and services, the overall conclusions are as follows:

• Existing values can be substantial in contexts where the forests in question are themselves unique in a certain sense or contain a highly appreciated form of biodiversity;

• Aggregates in all OECD sectors and between forests in general have the values of existence at a modest level when expressed per hectare of forest.

The normal rule of reference for conservation is that the economic value of conservation must exceed the economic value of the conversion. Surprisingly, little is known about conversion values.

Despite the non-updated specialist literature suggesting that the benefits for the non-timber industry could well outperform massive deforestation and burning and cutting for anthropogenic development, the sustainable use of forest land is difficult considerably in competition with alternative commercial uses, such as conventional mining and agriculture.

In view of the competition difficulties, the importance of maintaining and preserving the other advantages of forests, in particular carbon sequestration and sequestration and, where appropriate, tourism, river basin protection and the sale of genetic material, must be emphasized.

One of the features that underlie comparisons between land use is the role of the discount rate. The higher the rate, the more likely it is that sustainable land use is favored. This is because high rates favor early land use. Conventional exploitation will tend to be favored in terms of sustainable wood management in such circumstances.

The problem, therefore, is to know how large the discount rates are in such contexts. Although there is little research on this issue, suggesting that local communities often have discount rates of over 10% and up to 30% or 40%, reflecting their urgent need to address subsistence and security needs today and not in the future (Reviron M.P, 2010).

Although this conclusion should not be exaggerated - there are many examples of poor communities investing in conservation practices - the available evidence supports the traditional idea that many have high discount rates and that they contribute to the exploitation of resources.

While empirical information is far from adequate, it is well known about the value of forest ecosystems in order to provide some tentative political conclusions:

• It is known that carbon storage values are extremely important. An important political conclusion follows. Those who have spoken in international climate agreements against the inclusion of forest carbon in marketable permits and compensation schemes are the promoters of forest clearing by eliminating a major economic argument for their conservation.

• Early optimism about the role of forests as a treasure that supports the existence of other treasures, based on the idea that there is genetic material for drugs and cultures, show that they did not have that optimism backed by economic studies so far. This may change, but much more work is needed.

• while baseline hydrographic assessment studies have not produced large figures so far, there is a rapid emergence of "negotiations" between downstream water users and upstream forest owners as the economic value may be low in the report with other values, this does not necessarily mean that they can not form the basis of a conservation barrage because the values attached to the benefits of deforestation may be small.
• Those who place their faith in sustainable forestry without attempting to "cash in" non-commercial benefits could support the wrong advantage. Supporting sustainable forestry mechanisms and unsustainable forestry provide far more generous financial benefits.
• Actions to reduce discount rates for agricultural settlers, for example by providing low-cost credit, would do much to encourage sustainable farming practices based on agriculture and forestry.
• with great but unknown potential, is the value of forest stock as a volume of scientific information, which can be gradually lost if irreversible deforestation continues to occur repeatedly.
Analysis of forest economic values supports broader concerns of the ecosystem health literature. Such values indicate how to use efficient economic instruments for forest conservation. Loss of forests is associated with damage to human health, climate, river basins and hence coastal waters and balanced water changes, biodiversity and the well-being of indigenous peoples.
However, more attention should be paid to economic assessment procedures that explicitly take into account the irreversibility of decisions that lead to forest loss (Matta R, 2015).

5. The EU's political context for forests

Despite the absence of a common policy for forests, other EU policies such as rural development, employment, climate change, energy, water and biodiversity influence the Member States' forestry decisions. This is the reason why a first EU forest strategy was adopted in 1998. Based on the principle of subsidiarity and the notion of joint responsibility, it established a framework for forestry related actions in support of sustainable forest management. The Forest Action Plan for 2007-2011 was the main tool for implementing the strategy.
Since its adoption 15 years ago, significant social and political changes have affected forests, as well as a growing number of forestry policies that have helped together to create a more sophisticated forest policy environment. To respond to these new challenges, the European Commission adopted a new EU forest policy on 20 September 2013.
In addition to the EAFRD, Member States and their regions can also benefit from support from the European Regional Development Fund (ERDF) and the European Social Fund (ESF) ERDF co-finances programs and projects that may be directly or indirectly linked to forests and the forestry sector, as part of measures aimed at territorial development. Some examples that may be related to forests and forestry are: ERDF investments in Natura 2000 and the promotion of biodiversity and ecosystem services, as well as support for small and medium-sized enterprises and for innovation.
Projects may include the following areas of intervention: forestry monitoring and information systems and networks, sustainable land management, information sharing on climate change adaptation, carbon capture and mitigation, biodiversity, anti-depopulation policies mountain areas, promoting the use of bioenergy, cooperation on the use of renewable energy sources and energy efficiency and the sustainable development of regions through SMEs.
Another important source of forest financing comes from the EU's LIFE instrument, which has so far remained the only EU instrument devoted exclusively to the financing of environmental and climate projects. About 50% of the budget is specifically dedicated to

nature and biodiversity. Since the start of the program in 1992, over 300 projects have been funded for forest management and the restoration of forest habitats and species in Natura 2000 sites with a total budget of several tens of millions of EUR. A LIFE brochure is specifically dedicated to forests. Typical actions under the ongoing LIFE + Nature and Biodiversity projects include: eliminating invasive alien species, developing management plans, and agreeing appropriate forest management habitat arrangements with local stakeholders , the financing of recovery projects to improve structural forest diversity, and the launch of RDF schemes under RDF through demonstration projects and best practices. The LIFE instrument has also helped to develop guides and tools to promote forest management that promotes biodiversity.

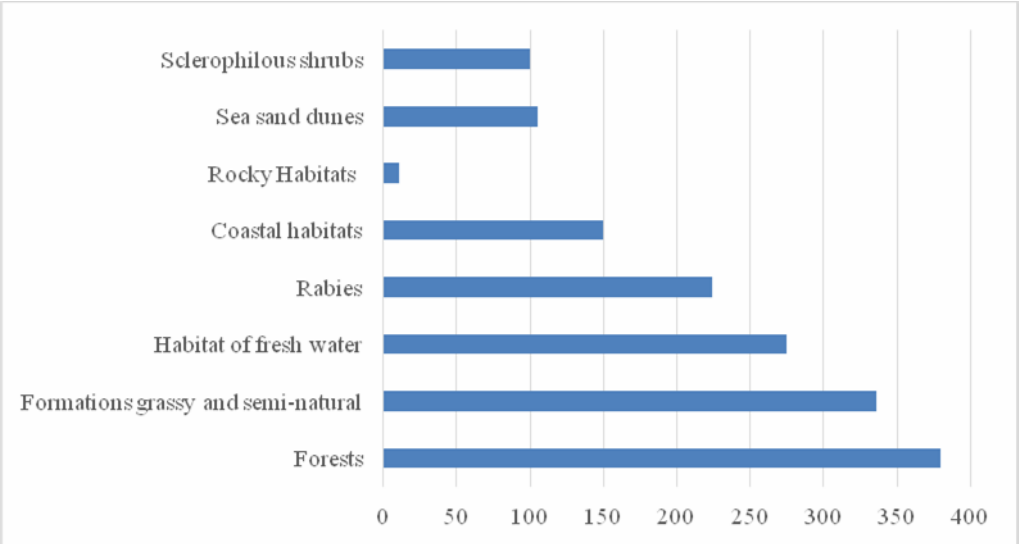

Fig no. 1. Types of habitats covered by LIFE projects (number of projects 1992-2017)
Source: LIFE project database

Conclusions

A forest and forestry strategy is necessary because there is no EU common forestry policy or a reference framework for forest related issues. As a growing number of EU policies foresee growing forest requirements, it is necessary to coordinate sectoral policies. It is also necessary to reach a global strategic vision on forestry issues and to take full account of related EU policies within national forestry policies. This will strengthen the capacity of forests and the forestry sector to cope with developments in different policy areas.

While violations of forest resource protection can be widespread around the world, the analysis and experiences summarized in this paper suggest that concerted efforts by governments, communities and international organizations could begin to employ on a wider basis a large number of promising approaches. While there is great variation among the problems, tools and approaches, a number of themes dominate and deserve emphasis. Most important is the extent to which enforcement of forest laws depends upon and must be integral to ongoing science-based programs for natural resource management.

Forest protection needs to be considered as a specific dimension of resource management, one that may need to rise to be on a par with more traditional aspects such as silviculture, harvest planning and wildlife management. While less well documented, there is a body of professional experience and practice that can form the model for development and application. A related conclusion is that the need is not so much for more forest resource

protection, as it is for better forest law and policy and for better and more effectively targeted forest resource protection. Moreover, the forest protection effort is not simply measured by infractions, or actions taken against unwanted activities, but by the state of forest resources for which protection is desired.

The present strategy aims to place forests and the forestry sector at the heart of the green economy and to highlight the advantages that forests can offer in a sustainable way, while ensuring their protection. For this, a strong commitment and political support from all the parties involved is needed. In order to set benchmarks for meeting the 2020 forest targets and to address the strategic priorities of forest policy and forest related policies, the Commission will work with the Forestry Standing Committee to strengthen ties with related policies of the EU. When necessary, the Commission will work with other committees and courts. Given the importance of EU funds for forests and the forestry sector, it is necessary to improve the quality of EU-wide discussions to identify other areas where Member States should make progress, such as preventing forest fires, pest and disease control, promoting the exploitation sustainable timber and regional / interregional cooperation.

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METHODS PROVIDING SUPPORT FOR QUALITY IMPROVEMENTS OF THE SERVICES IN UNIVERSITY LIBRARIES

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Abstract
The paper is in line with the concerns (nationally) expressed by both specialists and organizations that address issues regarding benchmarking tools and techniques specific to the university library. There are presented tools successfully used in evaluation of services quality. These tools (i.e. the causal analysis by Ishikawa chart) represent a novelty in the library field. At the same time, issues related to the benchmarking techniques and tools of the university library are addressed.. We aim to find answers to some questions as: which is a "university library service" definition; which are the possibilities of improving the quality in service delivering; which are the users' perception (feedback) regarding the services? At the same time, it provides a (useful, clear, concise) theoretical basis for conducting a benchmarking project in the university library.

Keywords
Quality management, university library, user, service, assessment, performance, Ishikawa chart, benchmarking.

JEL Classification
I.2. 123

Introduction

Universities are actively involved in development and dissemination of knowledge and competences, essential for knowledge-based economy and society processes. The change in the nature of knowledge imposes new requirements on academic systems, which must provide trained individuals able to operate with new cognitive tools, and it focuses on the harmonious integration of traditional learning processes along formal-informal-nonformal axis (Suciu M. Ch, et al., 2011).

A feature of university library services is the simultaneity of the services that need to be provided in parallel to the requirement of meeting one particular need of a user.

The quality of the university library services offered to users, depends on the librarians'skills and work satisfaction. Improving the quality of library services should be a continuous activity aimed at increasing their efficiency. In this respect, a pro-active attitude means looking for solutions rather than waiting for problems to surface (Upadhyay S., 2017).

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Research on the quality of service delivery activities in a university library holds a central position among other service related issues, both in terms of social-economic policy as well as theoretical outlook (Belás J. et al, 2017).

Every university library should be able to collect information from its users to understand their needs and use them in order to continuously improve the quality of service. After providing the service, the university library must use appropriate methods and tools to assess the degree of user satisfaction. The evaluation of user satisfaction, if made periodically, should be a permanent objective of any the organization, and therefore the university library.

The concept of benchmarking can be used by any organization open to change that promotes flexibility as a management tool. The aim is to obtain performance.

It can be also applied to user centred library services, thereby improving service quality and consequently meeting the users'information needs. The practice of benchmarking in a university library is tantamount to adopting the best existing methods to reach the "target".

When applied to a university library, benchmarking may be defined as: *a continuous process of assessing its services as compared to other competitors (libraries recognized as leaders in the field)* or: *a powerful tool likely to assist libraries in improving the quality of user centered services and its performance.*

The option for a particular type of benchmarking out of the existing ones (internal, external, competitive, functional (generic), international, etc.) available for library use, when properly applied, can contribute to success and increased efficiency. Benchmarking, if correctly chosen, designed and implemented, can also provide important advantages to the library.

At the same time, benchmarking can also provide unlimited opportunities for implementation whether as part of the quality management system and/or as a tool for continuous improvement.

1. The method approach

1.1. Ishikawa diagram application for identifying the causes leading to the loss of users in an university library

The quality assessment of university library services should be performed:

- from the view point of the recipient (user);
- from the view point of the provider (university library).

As assessment methods, should use:

1. For the beneficiary (user):
   a) Questionnaire for feedback and suggestions;
   b) Surveys of user satisfaction;
   c) Focus groups.
2. For the provider (university library):
   d) Management and analysis of complaints;
   e) Causal loop analysis using an Ishikawa diagram.

a) Periodically users are asked to fill in questionnaires. The latter require specification of service strengths and weaknesses as well as suggestions for improving their quality.

In order to be relevant, questionnaire based surveys should cover a large number of users. The optimal survey format is tabular form. The total number of distributed questionnaires should represent at least 50% of the total number of existing users in order to make the survey representative.

b) The survey addresses, as a rule, a representative sample of users at different time intervals. These intervals may be shorter if one finds that users are dissatisfied.

c) Separate meetings are held with user groups who were either satisfied or dissatisfied with the service provided. This is to better understand user requirements and continue to provide better services in terms of quality.

d) User complaints are placed on record (complaints properly speaking or negative feedback). They are classified according to their importance in terms of the quality of the service provided as well as from the view point of its importance in the eyes of the user. The method allows to monitor trends in the users' perception of service quality. The weakness of this method is that users do not express their dissatisfaction if dissatisfied but rather simply turn down any further service.

When the university library is capable of solving the complaints submitted by its users one can make an estimate of how "user-oriented" the library is. Addressing the subject matter of the complaint in an objective and timely manner makes it possible to maintain "user satisfaction". Otherwise "losing users" is inevitable.

e) Diagrams are a diagnostic tool used in the field of service quality offered to users (Valter N. et al., 2016). They allow the analysis of the causes of problems (non-compliance). It also makes it possible to highlight and rank the (actual and potential) causes of a given effect. An issue arising in carrying out a library service is broken down into its main causes. Each main cause is broken down into secondary causes.

1. 2. The concept of benchmarking in the university library

The concept of benchmarking (**BM**) involves four phases: planning, data collection (research), analysis and adaptation (implementation). Figure no. 1 shows the steps involved in conducting a benchmarking project. (Balm, G., 1994), (Belás, J, et al., 2017).

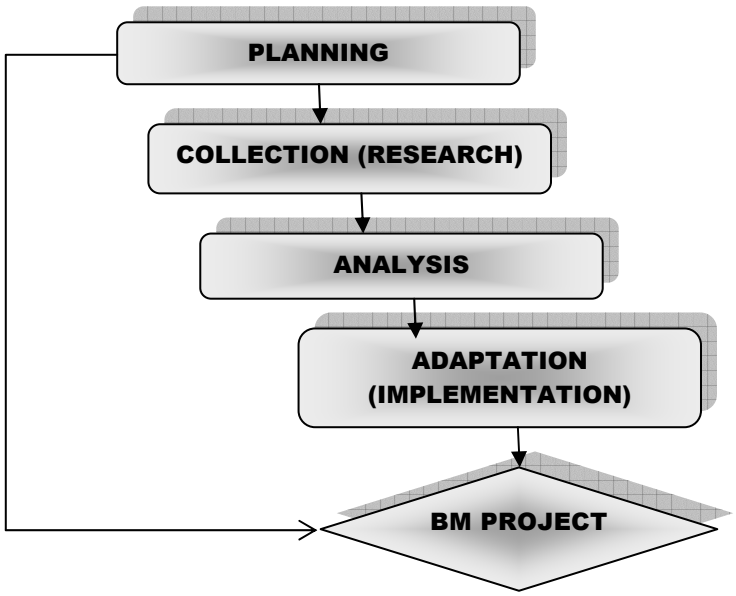

Fig. no. 1. Phases covered in a benchmarking project

Source: Balm, G., Evaluer et ameliorer ses performances: le benchmarking, AFNOR, 1994

The implementation of a BM project (phases and sub-phases of a BM process) is shown in an appropriate, clear and concise way in Figure no.2. (Balm, G., 1994), (Belás, J, et al., 2017), (Anand, G. & Kodali, R., 2008). The objective of any BM process is to induce changes. Nevertheless, one often finds that project outcomes yield only recommendations. That happens because the actual study has been disregarded.

In conducting the benchmarking process one can make use of *techniques* and *tools* specific to quality management. Benchmarking techniques cover all working *methods* and *procedures* by which we can go through the working phases and sub-phases (fig.no. 2). The benchmarking *tools* cover the *means* employed in the benchmarking process.

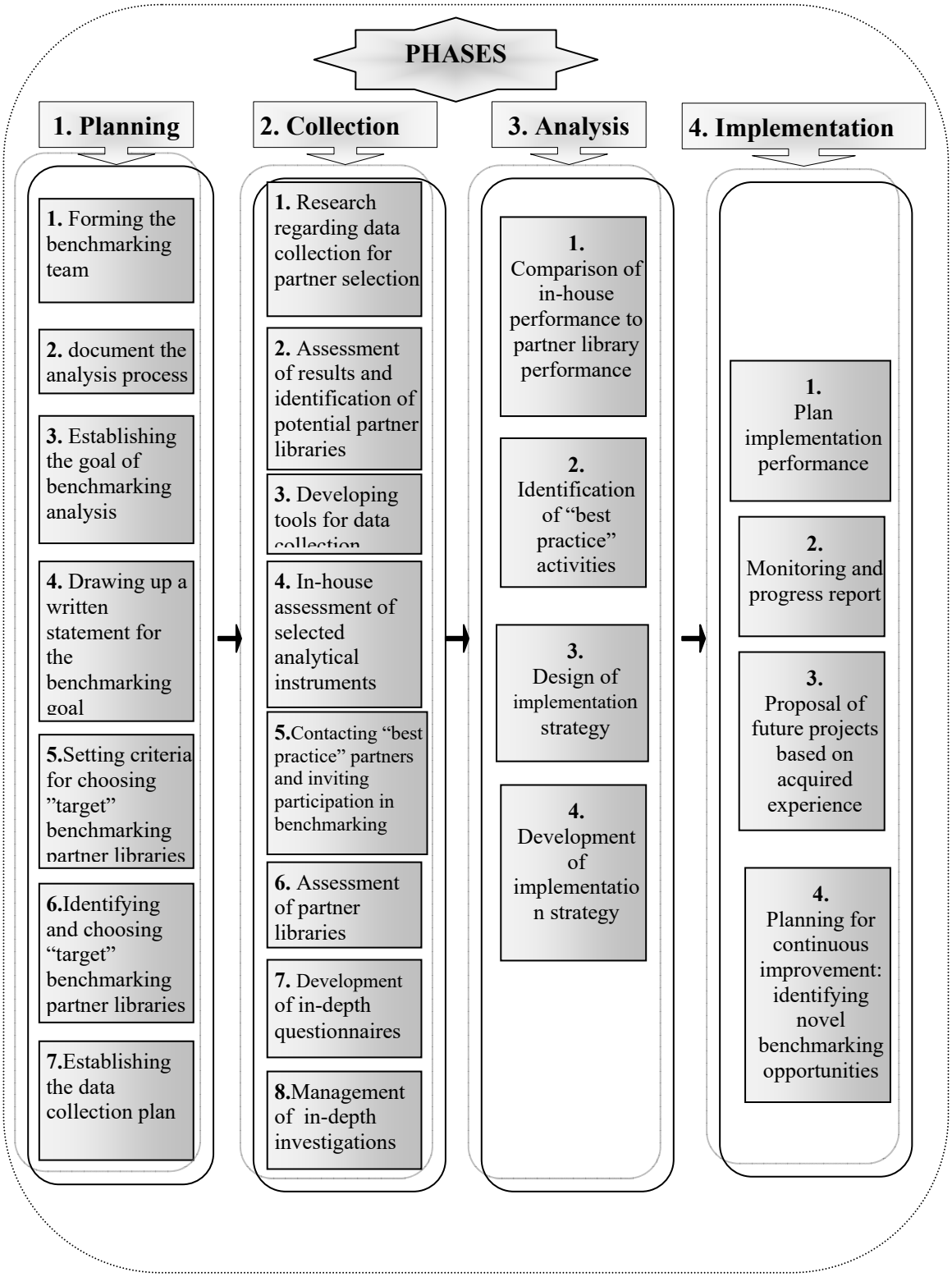

Fig. no. 2. Flow-chart of a Benchmarking project

Source: Authors. Addapted after Anand, G., Kodali, R., Benchmarking the benchmarking models, Benchmarking: An International Journal, Vol 15, No. 3, pp. 257-291, (2008).

Table no. 1 exemplifies the most frequently used techniques and tools (in all the four benchmarking phases of). (Anand, G. & Kodali, R., 2008), (Mitu S. et al., 2000).

Table no. 1. Benchmarking techniques and tools

Phase	Techniques	Tools
Planning	Brainstorming Objective weighting method	Cause–effect diagrama; Matrix chart; Pareto chart
Collection	Surveys Statistical-mathematical methods	Data collection file; Reference guide; Questionnaires
Analysis	Critical road map method P.E.R.T. method Decision making tree	Cost analysis Graph represenations
Adaptation	Management by obiectives Statistical research techniques	Histograms

Source: Mitu S. et al. Benchmarking, Ed. Fundaţiei Universitare Dunărea de Jos, Galaţi, 2000

2. Proposal for Case Study

2.1. Applying the Ishikawa diagram for clear visualization of low-quality in a University Library

The diagram examines the *obstacles that arise in arriving at "Quality Excellence Information Services" offered by the university library* (E effect). The problem is defined in question form: WHY are there so many obstacles in achieving Excellence in the university library? In the wake of research carried out in the library, the main causes are broken down into main categories (1, 2. 3, 4, 5). It identifies the secondary causes corresponding to the main causes that make up the "main bone" (fig. no. 3).

1. Staff
   - 1.1. understaffed
   - 1.2. lack of motivation
   - 1.3. lack of training
2. Procedures
   - 2.1. low flexibility to suggestions
   - 2.2. lack of involvement
   - 2.3. faulty communication channels
   - 2.4. insufficient collaboration between the library and the university
3. Policies
   - 3.1. unclear policy
   - 3.2. hesitating manager
4. Position (location)
5. Leadership
   - 5.1. do as I say
   - 5.2. leader does not listen
   - 5.3. unilateral decisions
   - 5.4. fear of criticism
   - 5.5. impersonal treatment

The use of an Ishikawa diagram (fig. no.3) allows to highlight the main causes of non-quality of services and it also represents an important tool in quality planning. The diagram in this form does not provide solutions to solving the problem. It only makes it possible to clearly define the problem under study. It may be used as a visual aid in the brainstorming

session. It also stimulates participants to look for solutions to the problem analyzed. The proposals are processed according to the well-known brainstorming technique and will ultimately yield solutions.

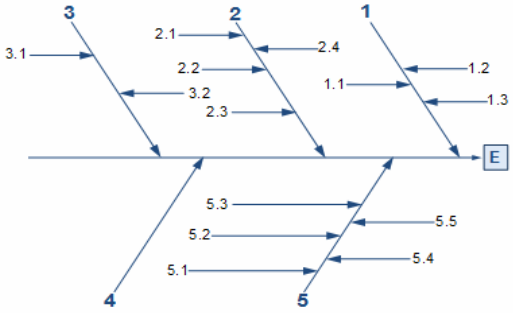

Fig. no. 3. Causal Analysis (Ishikawa) of barriers to achieving Excellence
Source: Authors

2.2. Applying the benchmarking concept to the university library

This chapter focuses on a proposal for implementing external benchmarking at the Central Library of the Bucharest "Politehnica" University involving reputed leaders in the field of librarianship. The aim is improved service for loan users. The steps to be followed in conducting the BM process are the steps referred to in chapter 2 (fig. no. 2). As the process is extremely meticulous, the present study will only illustrate techniques and tools used in the development of sub-phases in the planning and collection phases (code: 1.5, 1.6, 2.1).

2.2.1. Setting criteria for choosing "target" benchmarking partner libraries

One has used the "method of weighting objectives" where objectives have been replaced by criteria (A, B, C, D): A-size of BM partners; B-notoriety of BM partners; C-closeness to UPB Central Library field of activity; D-enrollment of readership/academic year. A matrix of these criteria is made up as follows: one compares systematically pairs of criteria. In Table no. 2: "1" is assigned if the first criterion in the pair under comparison is considered more important, while "0" is assigned if the first criterion in the pair under comparison is considered less important.

Table no. 2. Matrix of criteria

Criterion	A	B	C	D	Total row
A	-	0	0	0	0
B	1	-	0	0	1
C	1	1	-	0	2
D	1	1	1	-	3

According to Table no.2 the criteria ranking is D-C-B-A. The criteria are then placed on a scale of values from 1 to 10 in order to identity and choose benchmarking "target" partners according to Figure no. 4.

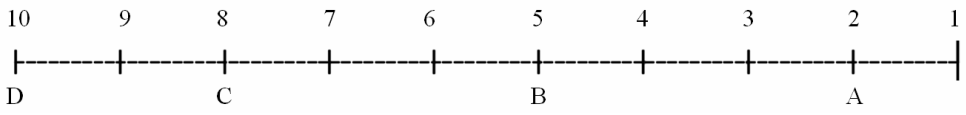

Fig. no. 4. Scale of values
Source: Author

In fig.no.4 has been chosen a scale of values from 1 to 10, where the most important criterion is assigned with the maximum value. The other values are reported to the maximum, established and appreciated by consensus. Criterion C is rated at about 80% of the value of D, B is considered 2.5 times more important than A.

2.2.2. Identifying and choosing "target" benchmarking partner libraries (code **1.6**)

-Identifying potential partners

One has to draw up an initial list of possible partners as in Table no. 3.

Table nr. 3. Potential partners

Reference	Potential partners
Central University Library „Lucian Blaga", Cluj	1. Central University Library „Mihai Eminescu", Iaşi
	2. Library of „Gheorghe Asachi" Technical University, Iaşi
	3.Central University Library „Carol I" Bucureşti
	4. Central Library of „Politehnica" University ,Timişoara
	5. Central Library of the Craiova University
	6. Library of „Dunărea de Jos" University, Galaţi
	7. Library of „Transilvania" University, Braşov

Choice of "target" partners based on weighted criteria

The choice of "target" partners is based on the criteria of choosing partner libraries (Section 2.2.1). This early survey of potential partners is preliminary, given the limited amount of information. One chooses a three tier rating scale. Table no. 4 provides a ranking of potential BM partners based on assessment points awarded and the scale of value in Fig no. 4. One can choose in this way the top partners.

Table no. 4. Identification and choice of BM target partners

Crt. Nr	BM Potential Partners	Criterion				Weighted Total (Wt)	% (V%)
		A	B	C	D		
1	Central University Library „Mihai Eminescu", Iaşi	3	2	3	2	60	14,96
2	Library of „Gheorghe Asachi" Technical University, Iaşi	2	3	3	3	73	18,20
3	Central University Library "Carol I" Bucureşti	3	3	2	3	67	16,73
4	Central Library of „Politehnica" Univ. Timişoara	2	2	3	2	58	14,46
5	Central Library of the Craiova University	2	2	2	1	48	11,97
6	Library of „Dunărea de Jos" University, Galaţi	1	1	2	2	43	10,72
7	Library of „Transilvania" University, Braşov	3	2	2	2	52	12,96
Criterion weighting (Cw)		**2**	**5**	**8**	**10**		
	Total (T)					401	100

Source: Authors

Exemple for Partner 1: A x Cw_A + B x Cw_B + C x Cw_C + D x Cw_D = Wt; Wt/T x 100 = V%

According to Table no. 4, the FIVE first selected libraries have been: Library of "Gheorghe Asachi" Technical University, Iaşi; Central University Library "Carol I" Bucureşti; Central

University Library „Mihai Eminescu", Iaşi; Central Library of „Politehnica" University, Timişoara; Library of „Transilvania" University, Braşov.
The collection of data about partner selection is according to the reference guide for identifying information sources. This guide includes: **Internal information (**market research; experts; managers; meetings of BM specialists, information from BM network, in-house library studies), **Public infomation** (books/ articles in periodicals; electronic documents; previous research on topic; association of professional studies), **Private research (**questionnaires, visits; meetings of benchmarking partners).
The sources are diverse: some can lead to data and information directly (e.g partnes' libraries websites), others can lead to alternative sources of information.

Conclusions

The final conclusion and the fundamental idea of this paper the could be expressed succinctly as follows: *to know, to understand, to assess, to gauge in order to cope with any kind of constraints*. The acquisition and application of the concept of benchmarking can benefit the library if adopted and implemented correctly and if supported by flexible management.
In conducting a benchmarking process, the people involved must have relevant expertise, extensive experience and be creative. Experience is necessary but not sufficient. It should be complemented by a well-organized methodological basis and adapted to the library particulars. The factors with an impact upon "best practices" are: computerization; staff training; inter-library cooperation agreements.
The study cases could be used as structural methods and tools for continous improvement of universitiy libraries services.
The present paper is meant to provide a limited contribution to implementing the concept of benchmarking in the university library.

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TOPICAL TRENDS WITHIN THE DEVELOPMENT OF FINANCIAL PLANNING IN AN ENTERPRISE

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Abstract
Financial planning is the process of creation of financial plans and other consequent activities, such as the determination of means for their achievement, including the identification of organizational relationships and employees. To create a financial plan, various methods and approaches can be applied. Some of them are only little elaborated at the theoretical level. The content of this paper is focused on the summarization of theoretical and methodological bases of individual financial planning methods. The aim is to present positive and negative aspects of the regression method of financial planning. The research conducted indicates its low rate of practical usage at present within the conditions of enterprises. The regression method in the financial planning is based on the prediction of the course of items in the financial plan depending on the dynamics of the growth of revenue or other indicator (time, subject matter). It takes into account the statistically corroborated fact of the changing ratio of the financial plan items, which represents its advantage.

Keywords
financial planning, methods, regression,

JEL Classification
G31, M2

Introduction

Planning is an initial and one of the most important managerial functions as the changes in the economy, new technology, innovation as well as other factors such as globalization and sustainability influence also enterprises at the whole society to. (Lorincová at al, 2016, Hitka,et al, 2015). In spite of varied economic situations all managers enforce to gain economic profit and therefore as Hajdúchova mentions "enterprises have to meet economic goals and also other objectives, that affect the processes and economic results of the businesses" (Hajdúchová et al. 2017). Planning represents a starting point of all managerial functions that include organizing, staffing, leading and checking. It encompasses the determination of goals which an enterprise wants to achieve till a certain point in time and the determination of means and ways applied to achieve the goals set. Planning enables the enterprise to be managed effectively in each aspect.

"Financial planning captures the course and changes of enterprise's money and capital that are caused by the activities of the enterprise's transformation process. Within the financial planning, the financial goals are defined and the financial plans are created." (Ďurišová at el., 2015, p. 146) The topic of financial planning is wide, representing a process which is not one-time but continuous. The financial plan is continuously being adjusted as a reaction to the change of conditions in the enterprise or outside. The outcome of the financial planning is the financial plan. It is created for a longer or shorter period of time, depending on the financial manager and the whole enterprise's management, pertaining to what goals and in what time span the enterprise wants to achieve, or what it must sacrifice to achieve them. During the planning, the knowledge from the enterprise's past is used, and the predictions are made about the course of financial parameters in the future. An ideal way for effective processing of all enterprise's financial indicators, and for the creation of a financial plan with its future checking and adjusting, is the application of information technology. This can very efficiently work with a large amount of data from different sources, and it can easily present the results of the financial plan, which is very important for the checking of its successfulness. Several authors point out that the system for planning outlines the scope of the particular solutions which are then arranged in a logical sequence (Medvecka, Binasova, Kubinec, 2018; Potkany at al 2017. ; Malichová et al, 2016). Therefore many enterprises use an economic software solution for their accounting, financial budgets and the overall economic agenda. A software solution for the financial planning must collect the data from previous years, process it and apply it together with the inputs of the financial planner to create a financial plan. This plan can then be easily adjusted and the impacts of these changes on the plan or the enterprise itself and its financial results can be tracked. "A financial plan in general confronts the present and future need of financial resources on one side with the current and expected future capital resources on the other side" (Sedlák M., at el., 2010, p. 340). Planning particularly also play an important role for future success and competitiveness of enterprises in effective managers´s decision-making process (Malichová, Mičiak, 2018).

2. The methods of financial planning, current state of their application within enterprise conditions

Various methods and approaches can be applied to create a financial plan. An enterprise can choose the one which fits it the most and for the application of which it has the best preconditions, or the results of which will help it progress the most. The methods of financial planning include the following ones:

- **The global method** is one of the basic methods of financial planning. "It is based on the elaborated subject matter parts of the plan, such as the plan of sale, production, investment, human resources, and so on. It takes from them the need for funds and the amount of the financial resources being generated." (Kráľovič, 2006, p. 110) However, its shortcoming lies in its passive function.
- **The method of gradual creation of budgets** is applied mainly in the short-term financial plan (annual, quarterly and monthly plan). "The financial plan follows the so-called functional budgets (of sale, production, purchasing) representing individual functions of an enterprise. The budgets are being compared with the original draft of the financial plan and they are being mutually harmonized, which creates a realistic variant of the financial plan." (Ďurišová, 2015, p. 153, Ďurišová, et al., 2015)
- **The method of ratio financial indicators** uses the selected ratio financial indicators and the estimated revenues while planning the structure of assets, financial structure, and capital structure. The ratio indicators represent the exemplary values that the enterprise wants to achieve in the future.

- **The break-even analysis** studies the change of amount of profit and the selling price of products based on the calculation of the fixed costs for various amounts of sales or activity.
- **The method of percentage share in revenues** is based on the presumption of the fixed ratio between individual items of the profit and loss statement and the balance sheet. The enterprise determines what assets and in what structure it should have during the planning period to secure the estimated revenue growth, how much capital it needs for the investment and in what structure, and how much profit it will generate.
- **The regression method**, contrary to the method of percentage share in revenues, takes into account the statistically corroborated fact of their changeable ratio.

3. Results and discussion

Within the questionnaire survey focused on the monitoring of the financial situation of medium-sized enterprises in the Slovak Republic, one of its parts was particularly focused on financial planning. In the question "Do you use the methods of financial planning?", the individual methods of financial planning were listed.

Table no. 1 The results of the survey focused on the usage of financial planning methods

Financial planning methods	Percentage of usage of individual methods
The global method	82
The method of gradual creation of budgets	85
The method of ratio financial indicators	57
The break-even analysis	62
The method of percentage share in revenues	48
The regression method	7

Source: own survey

The respondents then expressed the degree to which they use the methods listed, using a scale from 1 (we do not use) to 5 (we always use). Based on the responses, the percentage of usage of the methods in enterprises was determined (tab.no 1 and fig. no 1)

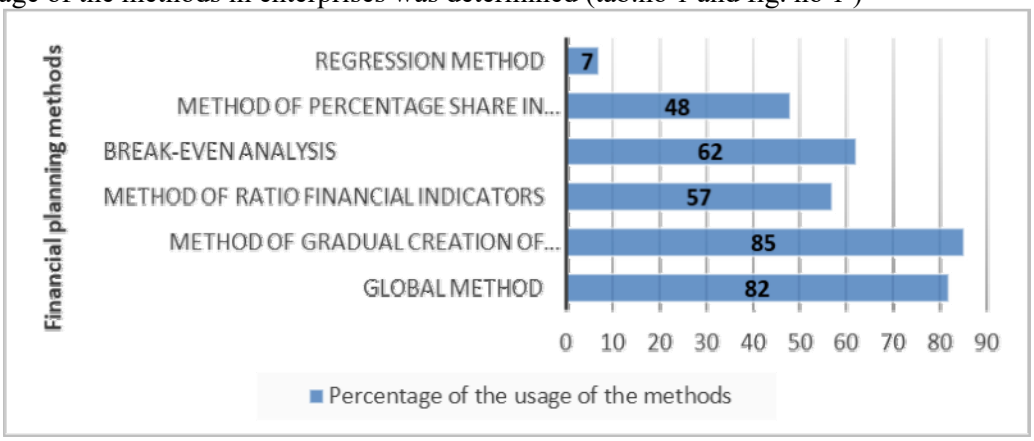

Fig. no. 1 The chart showing the results of the survey focused on the usage of financial planning methods

Source: own research

A partial conclusion from the conducted research is the identification of the low usage of the regression method in business practice.

3. 1 Drawing of the conclusions and the application of the regression method of financial planning

The regression method of financial planning of enterprises is based on the regression analysis. It can be applied here since the financial plan contains dependent data categories. These categories depend on time or they are dependent with regard to their subject matter on other variables and data categories. The amount of historical data influences the accuracy of the method's application. For the set of points created by the interconnection of data entries from 2 sets, the trend connecting line is determined. This represents the data set. The trend connecting line is usually linear, exponential, polynomial, logarithmic or of a power type. Other types can be used as well, but for the financial plan the listed types of connecting lines are preferred. Each of these trend connecting lines has its polynomial equation from which the future values can be derived. The more the data entries, the more accurate the equation becomes, making the estimated value being more accurate too.

To each polynomial equation, a reliability equation R^2 is assigned, showing the probability with which the value calculated for the future is accurate. The higher the value of the R^2 equation, then is higher the probability that the estimated value is correct. The procedure of application of the regression method of financial planning is depicted in the following figure no. 2.

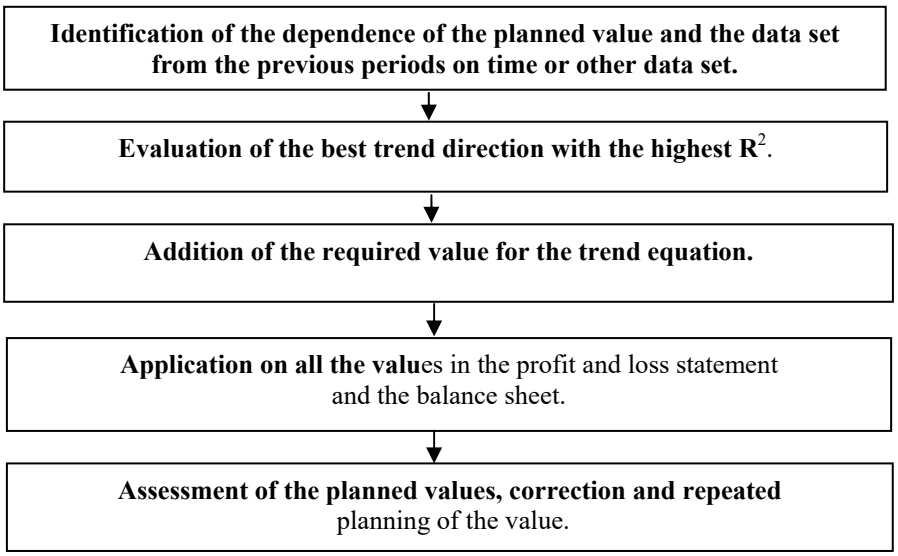

Fig. no. 2 The procedure of application of the regression method of financial planning
Source: own research

For the most values, it is possible to use the time regression, other values are being inputted directly by the planner. The planner checks all the planned data points from the regression and does the correction so that the occurrence of too great deviations is prevented. The initial data entries for the application of the regression method of financial planning were the ones from the profit and loss statements from the period of 2012 – 2018 (see Tab. no2).

Table no. 2 The selected items from the profit and loss statement in €

Period	Year	Revenue from the sale of merchandise	Cost of merchandise sold	Trade margin	Revenue from the sale of own products and services
1.	2012	914 823	804 316	110 507	100 362 670
2.	2013	4 157 767	4 069 988	87 779	115 726 188
3.	2014	4 515 364	4 513 738	1 626	133 609 603
4.	2015	3 603 618	3 598 003	5 615	148 261 041
5.	2016	3 639 793	3 633 636	6 157	160 250 969
6.	2017	2 969 667	2 964 030	5 637	175 791 890
7.	2018	2 645 860	2 640 995	4 865	176 242 073

Source: own research

To make the estimation of the future value the most accurate possible, the data from the highest number of points in time possible are needed. The result values will be the items planned for the year 2019. It needs to be gradually identified which items in the profit and loss statement are time-dependent. The application of the method presented in the paper works with the following items: revenue from the sale of merchandise, cost of merchandise sold, trade margin, revenue from the sale of own products and services.

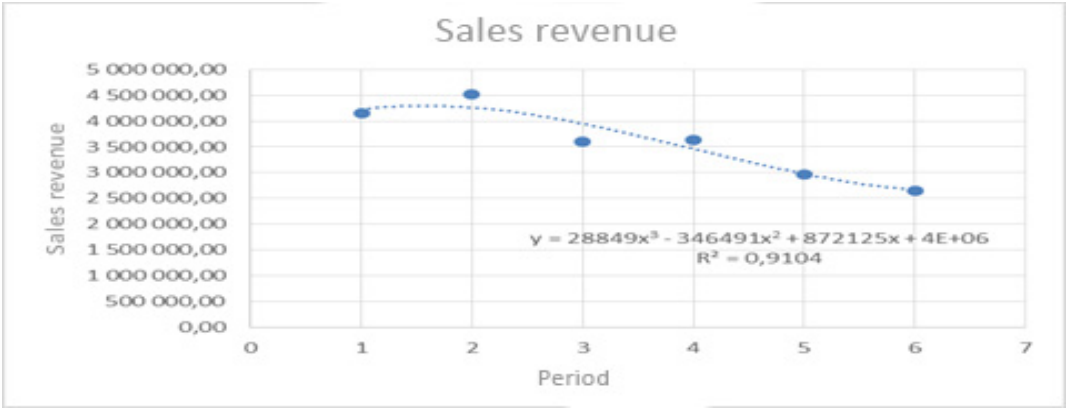

Fig. no. 3 The chart depicting the planned value of revenue from the sale of merchandise

Source: own research

The value of the revenue from the sale of merchandise was significantly different in the first year when compared with the others, therefore it was not used in the calculation. The following periods had the time dependence expressed by ***the trend equation*** $y = 28{,}849x^3 - 346{,}491x^2 + 872{,}125x + 3{,}671{,}000$. For the year 2019, the planned value was € 2,693,107.

Fig. no.4 The chart depicting the dependence of the revenue from the sale of merchandise on the cost of merchandise sold

Source: own research

The chart shows the linear dependence between the cost of merchandise sold and the revenue from the sale of merchandise. When adding the x = 2,693,107; the planned cost of merchandise sold was rounded to €2,651,305.

Trade margin

The trade margin is calculated as the difference between the revenue from the sale of merchandise and the cost of merchandise sold. For the year 2019, the trade margin calculated was €41,802. For the trade margin, it applies that the time dependence is quadratic (polynomial).

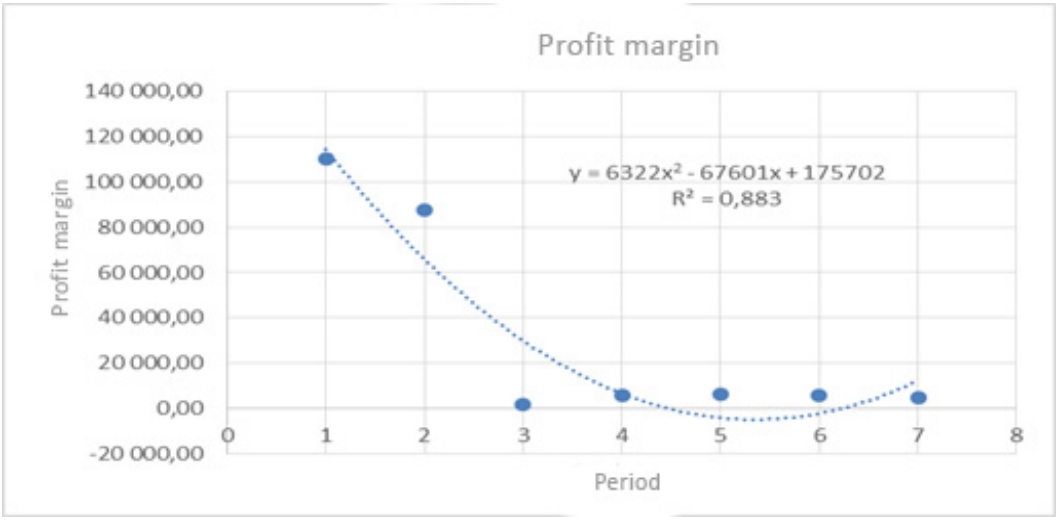

Fig. no. 5 The chart showing the planned values of the trade margin

Source: own research

The value of the trade margin for 2019 was planned as €39,502 using the regression method, which is only around €2,000 less than the value calculated as the difference between the revenue from the sale of merchandise and the cost of merchandise sold. However, the value will have to be corrected since this value was considerably lower (10 times lower) during five previous periods.

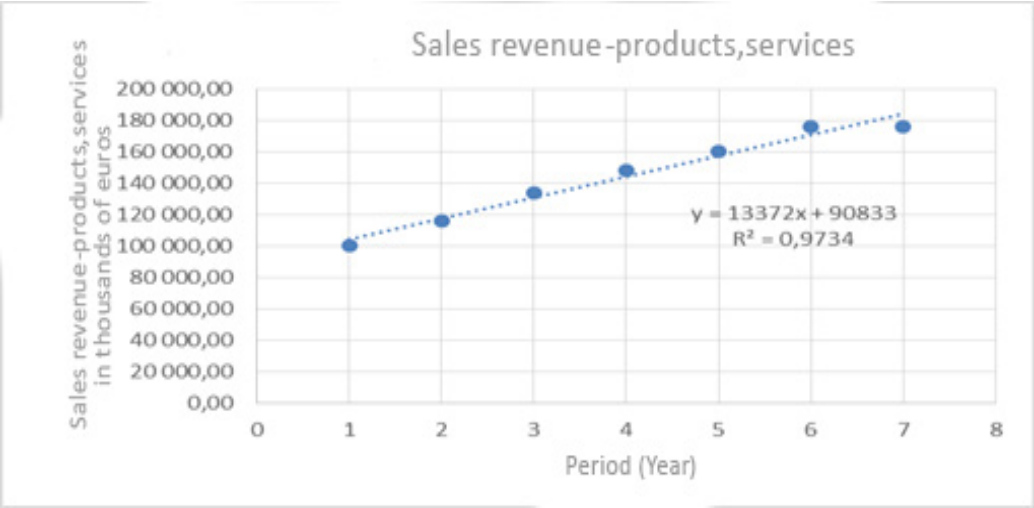

Fig. no. 6 The chart showing the planned values of the revenue from the sale of own products and services

Source: own research

The revenue from the sale of own products is linearly dependent on time. In the following period, based on the regression analysis, the value gained by the equation shall be €197,809,000.

Table no. 3 A part of the profit and loss statement created by the regression method

Name	Number of the row	2018	2019
Revenue from the sale of merchandise	1	2,645,860.00	2,693,107.00
Cost of merchandise sold	2	2,640,995.00	2,688,927.00
Trade margin [1-2]	**3**	**4,865.00**	**4,180.00**
Production [5+6]	**4**	**175,451,826.00**	**198,349,477.00**
Revenue from the sale of own products and services	5	176,242,073.00	197,809,000.00
Changes in internal inventory	6	-790,247.00	540,477.00
Production consumption [9+10]	**8**	**165,654,125.00**	**174,605,600.00**

Source: own research

The application of the regression method is difficult during the first attempt within the enterprise conditions. It is necessary to determine which items from the profit and loss statement and the balance sheet are the dependent variables on one or multiple independent variables. Subsequently, it is necessary to determine for which item the regression method will be applied, and which will be determined by the planner separately. In tab. 3, the planned items are listed, specifically:

- the revenue from the sale of merchandise planned by the regression method according to the time dependence,

- the cost of merchandise sold was planned with the value €2,654,305 by the regression method, but the planner determined the value €2,688,927, based on the estimated course of the price,
- the trade margin was determined as €39,502 by the regression method, but regarding the values from 2014 – 2018 and the information on the estimated course, the value was corrected to €4,180,
- the revenue from the sale of own products and services is planned by the regression method with the application of time dependence.

Conclusion

Financial planning determines the target values of the financial indicators when the manager must take into account the previous course of the enterprise's situation, the existing and changing conditions of its surroundings, and he/she must estimate their future development. This requires a significant degree of the planner's creativity (Kozubíková, 2016), Kucharčíková, et al.,2018). However, the methods can be applied that increase the efficiency of his/her activity. The paper presents the regression method of financial planning. The reason is the result of the survey showing its low practical usage. The regression method was applied to the selected items that are dependent in relation to time or to the subject matter. A disadvantage of this method is the fact that the creation of the system for the application of the regression method of financial planning within specific enterprise conditions is time-consuming. A benefit of the application of the regression method is the use of statistically corroborated dependence of the changeable ratio of the items in the financial plan. Using the reports from financial planning and transforming them into information and knowledge, the enterprise can swiftly react to the changing surroundings.

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THE EUROPEAN UNION'S APPROACH ON YOUTH UNEMPLOYMENT

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Abstract
Regarding public employment policy, the labor market is one of the most regulated areas in terms of legislation, given the fact that it integrates the qualitative factor "labor force" into the constantly changing competitive market and in the full technical process. In this respect, from a theoretical point of view, the labor market is the expression of the relation between supply and demand and is identified as the real need for wage labor that is formed at a given moment in an economy.
The objective of employment policies is to provide employment opportunities for all individuals who want to work in the labor market. It is also desirable to maintain the unemployment rate at the lowest possible level at that level of natural unemployment. The purpose of these policies is to provide jobs, labor market flexibility, integration and adaptability of workforce training.
Engagement is a new culture in terms of employment and refers to capability and adaptability to be hired, contributing directly to fighting youth unemployment and combating long-term unemployment. All these elements combined help us in shaping the aim of this research, which is to highlight the European strategy towards activating and attracting the youth towards the labor market and trying to keep them in the work field on the long run.

Keywords
unemployment, EUROPE 2020 strategy, development, education

JEL Classification
E24, J64

Introduction

The aim of this paper is to highlight the European strategy towards activating and attracting the youth towards the labor market and trying to keep them in the work field on the long run, especially after observing the at European level, the population with the age between 18 and 24 are under the pressure of a huge unemployment rate because they cannot find themselves targeted towards the needs of the employers. A secondary objective of this paper is to emphasize also the strong value had by education on the labor market. Regarding public employment policy, the labor market is one of the most regulated areas in terms of

legislation, given the fact that it integrates the qualitative factor "labor force" into the constantly changing competitive market and in the full technical process.
In this respect, from a theoretical point of view, the labor market is the expression of the relation between supply and demand and is identified as the real need for wage labor that is formed at a given moment in an economy.
Demand is expressed by the number of jobs. At the same time, it is necessary to distinguish between the need for work and the demand for labor as follows: labor demand comes from the companies employing, on a contract basis, workers specialized in different fields of activity at a certain labor price, called salary, on the other hand the demand on the labor market is constituted as a sum of individual applications (Aceleanu, Cretu, 2010). The demand for work is a derived claim, which is determined by the demand for goods resulting from the use of labor.
On the other hand, the offer of labor is the work that the members of the company can deposit in wage conditions. It is provided by the labor resources available on the market. The labor resources of a country represent the entire working-age population.

Literature review on Education and Youth Unemployment

The relationship between education and the labor market can be addressed from many perspectives: economic, social, political etc. Each of these perspectives highlights issues of interest to the field they represent. The economic perspective focuses on the effectiveness, productivity and quality of work provided by people with different levels of education and training. Sociologists are more interested in aspects of socio-professional mobility, occupational prestige, the impact of social origin, and the formal path of educational & socio-professional evolution of individuals (Neagu, 2015). Within these perspectives are included many theories, models of analysis, of which we will select only those that best reflect the situation in Romania and which respond to the objective that we targeted for this research paper.
Among the theories that fit into the economic perspective of addressing the relationship between education and the labor market in a globalized labor market, those that better respond to the objective we are proposing are the human capital theory, suitability or coupling theory, and the theory based on the model of the signal. Ever since its launch - in the early 1960s - the human capital theory, developed by the Americans Becker and Schultz (Becker, 1997) has raised the interest of both economists who are concerned with raising the quality and productivity of work, as well as of people interested in the impact of education on the socio-professional path of the individual. Through their research, T. Schulz and G. Becker have permanently changed their perception of education: education is not just a consumer good, but a good investment. Investment in education - usually measured by years of schooling, types of certified diploma & college specialization - bring both individual benefits (raising the standard of living of the population, improving the state of health and the family life of individuals, etc.), as well as social benefits (raising the quality and productivity of work, reducing delinquency, especially juvenile delinquency, increasing social involvement, etc.). In general terms, human capital theory argues that the higher the investment in education, the higher the individual and social benefits. Another aspect revealed by the two economists is that investment in education becomes more cost-effective if done early: investment in education is long-lasting - at least 10-15 years - and, in order to increase its profitability, the category of young population is best suited for this type of investment (Neagu, 2015). For various reasons, either of an objective nature (lack of information on the existence of a job offer, limited resources to look for a job or, in the case of employers, to organize a professional selection process), either subjective (lack of confidence) (Nauze e al., 2002) The supporters of the theory of adequacy or coupling (Jovanovici, 1979, Couppié, Mansuy, 2004), adopt the idea of a relationship between

education and the labor market and develop their opinion that these road mistakes are "corrected" over time: either the employees change their workplace closer to their level of training & professional training, or employers organize new recruitment sessions. Path-dependent mistakes are more frequent and have a longer duration, or, on the contrary, they are rare and resist for a very limited time depending on the level of socio-economic development of a country. The theory of adequacy is the one that is frequently called for when it comes to explaining the exceptional situations that a society is going through, such as the economic crisis we went through. Thus, job shortages specific to periods of economic crisis favor the multiplication of "road mistakes" among the job seekers (Angelescu, Stanescu, 1998). Also, these types of errors are more common among young people who are in the beginning of a professional career, but they are also the category of population who have more time to recover and enroll on a route according to their socio-professional interests.

Methodology on Reaching Unemployment Status Quo

The unemployment rate expresses the percentage of unemployment, being the percentage ratio between the number of unemployed and the active population.

Regarding the public policy in the field of youth employment in the labor market, the employment rate among young people is significantly high in Romania. Regarding the structure of unemployment by level of education, the unemployed without education and those with primary education have a significant share in the total number of unemployed registered in the ANOFM records (32.3%). The unemployed with secondary education level represent 30.20% of the total number of registered unemployed and those with university studies 5.03%.

Regarding the long-term unemployment at the end of 2018, 10,597 young people under the age of 25 who were unemployed for over 6 months were registered in the ANOFM (representing 27.29% of the total unemployed persons with the age under 25) and 117,639 unemployed adults over 12 months, the share of long-term unemployed adults in the total number of unemployed adults was 45.61%. The share of the unemployed registered in the Agency's records for more than 24 months out of the total number of registered unemployed is 27.91%, and those for more than 27 months registered are 26.09%.

The core target of employment policies is to provide employment opportunities for all individuals who want to work and be part of the labor market. It is also desirable to maintain the unemployment rate at the lowest level possible, almost near NAIRU, which is the natural level for unemployment. The end goal of these policies is to provide jobs, labor market flexibility, integration and adaptability of workforce training.

Engagement is a new culture in terms of employment and refers to capability and adaptability to be hired, contributing directly to fighting youth unemployment and combating long-term unemployment.

In this respect, active labor market policies aim to increase employment opportunities and improve the link between vacancies and the unemployed. The main actions of these employment policies are stated in the following situation:

- Training courses;
- Stimulating economic agents through economic and financial incentives;
- Encouraging investments;
- Providing business facilities.

Active measures target the employed population in order to predict the risk of unemployment. Adapting the workforce to the dynamics of the business environment reduces the risk of generating the unemployed.

On the other hand, passive policies envisage measures and actions to provide the involuntary unemployed with a certain type of income to ensure their daily living. This

income has a very important role in the economy because it fixes income that stimulates work.
Employment policies at the macroeconomic level directly influence the volume and structure of employment through the following tools (PCI, 2018, EC, 2018a):

- Tax policies - taxes, taxes and subsidies;
- Monetary policies - interest rates, foreign exchange, money supply;
- Wage Policies - Minimum Wage;
- Investments in public infrastructure.

Causes and Measures for Youth Unemployment
The transition from school to active life, the integration into the labor market of young people is an essential issue within a society.
Globally, 73 million young people are registered as unemployed. But according to World Bank data, the number could be higher, but meanwhile 620 millions of young people are not working, studying or not in training.
The reasons for the incompatibility of young people with the labor market are numerous and diverse, but among the most important are the following:

- inconsistency of training plans with the needs of the labor market (inconsistency between demand and supply in terms of skills, insufficient or even lack of extracurricular activities, and the small number of practical applications in school);
- the impossibility of finding a job in accordance with aspirations, because most young people think long-term and want to buy a home and start a family, and the "break" they take until finding a job can be long, what affects the individual in time;
- lack of counseling for career, life and gaining personal autonomy (young people are not prepared to assess, find a solution and act effectively in a risk situation, much less in a socio-professional failure);
- schooling costs may be too high for many families and so young people get early school leaving, which prevents them from acquiring a level of study that is compatible with market requirements;
- there is also a situation where the role of the school has diminished in the definition of professional careers, with the consequence of diminishing interest in the study, which again leads to a high rate of school dropout;
- not identifying, at the level of public policies, the most effective measures to ensure general access to education and implicitly the inclusion of vulnerable or vulnerable groups.

Measures for Better Insertion of Young People Into the Labor Market
Upon graduation, either at a lower or higher level, young people encounter different impediments in finding a porter to ensure their entry into the labor market, followed by adaptation to the specificities of this market. The biggest risk young people face is unemployment. Thus, in order to reduce this youth unemployment, the European Commission outlined certain measures that each state could use.
A first measure outlined by the European Commission is to support first professional experience and workplace training; apprenticeships and good quality internships should be developed here in order to enable young people to acquire skills and experience. Partners should help young people to get a job easier.
A second step is to get a first job. The Commission wishes to improve the access of young people to the labor market. To this end, Member States are invited to reform legislation on employment protection in consultation with social partners. In addition, the Commission

wants to promote the independent activities of young people in order to create their own businesses.
A third measure is to use the European Social Fund to improve young people's access to employment. A part of the Structural Funds, the European Regional Development Fund and the European Social Fund, amounting to nearly EUR 80 billion, could be used for education and for training and apprenticeship programs.
A fourth measure would be labor market mobility. As the Erasmus project was outlined in the university environment, the project Your first EURES job was created to support young people and employers through recruitment and job placement at the translation level. The Commission also intends to step up the European Voluntary Service over the past two years of the Youth in Action Program. A new body of European humanitarian volunteers should be set up.
A fifth measure would be to prevent early school leaving, which is reflected in the Europe 2020 strategy that uses policies to reduce early school leaving. It recommends a combination of prevention, intervention and compensation measures.
A sixth measure relates to the development of the necessary skills that the labor market needs. Thus, the European Commission recommends that Member States' budgets plan effective spending on education and training.
A seventh measure that addresses employers, refers to the existence of legislation that encourages entrepreneurs or those who want to develop new production capacities, especially capacities with new technologies. The salaries of these young people for a period are not taxable, according to the European policies regarding the inclusion of newly graduates in the workforce. Granting benefits in the form of training programs that could be carried out by professional training providers licensed under the law for which the unemployment insurance budget is provided, an amount representing 50% of the costs of training professional training for up to 20% of the staff employed. A final measure shapes the creation of a European labor market for young people through which they can freely circulate to work, study or attend training courses. Elaboration of social norms is favorable to citizens because it helps with the coordination of social security systems, components that are related to unemployment.

Europe 2020 Strategy – the Framework for Reducing the Gap between Education, Youth and Unemployment

The Europe 2020 strategy proposes three priorities that support each other: smart growth, sustainable and favorable growth. The first two development of an economy based on knowledge and innovation, but a more resource-efficient economy, and the favorable one is based on promoting a job-efficient economy.
As far as knowledge and innovation is concerned, education, training and lifelong learning need to be active because one quarter of all students have poor reading skills and one in seven young people abandons their goals of obtaining a undergraduate or bachelor degree. Also, only 50% have an average level of qualification, but insufficient to meet the needs of the market. Less than one in three people aged 25 to 34 has a university degree, compared with 40% in the US and over 50% in Japan.
Under this strategy, the EU needs to define the direction it wishes to pursue beyond 2020, and so the European Commission proposes that 75% of the 20-64 year-old population should have a job, but also the abandonment of school rate should be reduced to below 10% (EC, 2018a, 2018b).
Two years ago, the Commission developed the "Investing in European Youth" programme that actually works as an economic policy that has 3 directions for action (EC, 2018a, 2018b):

- *Better opportunities for access to employment:* The Commission wants to achieve this goal through a full and sustainable implementation of the Youth Guarantee on the ground, backed by the European Semester leading the reforms at national level. In order to facilitate the introduction of the Youth Guarantee, the Commission proposed to supplement the initial allocation of the EUR 1 billion youth employment initiative to accelerate the process in the years 2018 and 2019 for reaching the goal for 2020.
- Better opportunities through VET (Vocational Education Training): This was achieved by facilitating cooperation between Member States and supporting their efforts to reform education and training systems. The European Commission is particularly committed to creating better conditions for apprentices by proposing a quality framework for apprentices, by supporting Member States in setting up modern apprenticeship schemes and by introducing the new long-term mobility line for ErasmusPro apprentices in the Erasmus + program.
- Better Opportunities for Solidarity, Mobility and Participation in Learning: In this context, the Commission increased with EUR 200 million the Erasmus + budget by 2020. In order to encourage young people's participation in society and work solidarity, the European Commission included the young population of EU as key pillar of the European Solidarity Body.

Thus, at national level, each state was given the directive and also the means to (EC, 2018b):

- Make effective investments in education and training systems at all levels ranging from pre-school to university;
- Improve educational outcomes by addressing pre-primary, primary, secondary, vocational and university segments within an integrated approach that includes key competences and reduces early school leaving;
- Strengthen the openness and relevance of education systems through the establishment of qualification frameworks, but also by better targeting the learning outcomes to the needs of the labor market;
- Facilitate the entry of young people into the labor market through guidance, counseling and apprenticeship.

The Youth Employment Initiative (YEI) is one of the EU's main financial resources to support the implementation of youth guarantee schemes. It was launched mainly to support young people in regions with over 25% unemployment. But exclusively for young people not in education, employment or training, including long-term unemployed or those who are not registered as jobseekers (PCI, 2018). The total budget of this project is 8.8 billion euros for all EU Member States eligible for 2014-2020 and until now 80% of the allocated budget was contracted (EC, 2018a, 2018b).

Starting in 2012, the proportion of NEET (NEET describes the group of individuals that aren’t in education, employment or training) young people has declined steadily from 17.2% to 14.3%, close to the pre-crisis period (2004-2008).

In 2017, 40.4% of those aged 18-24 reported that they are in education, 27.4% are in the workplace, and another 17.8% are in a combination of education and jobs. The remaining 14.4% of young people aged 18-24 in the EU were NEET.

In nominal terms, at EU level, 14.4% of young people not in education or training and / or employment represent about 5.5 million, the equivalent of the total population in Slovakia or Finland.

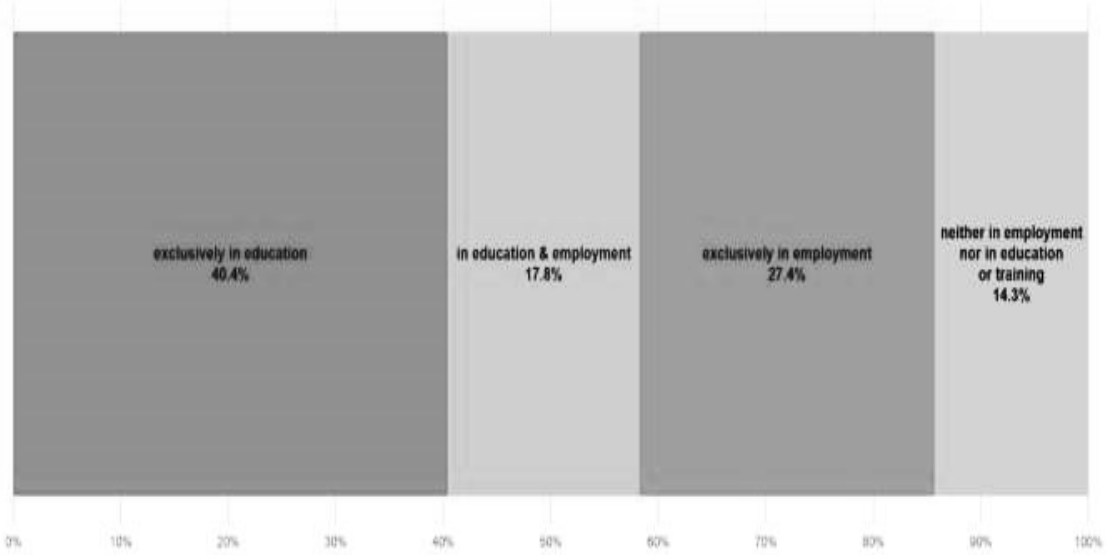

Fig. no 1. Work, education and training among young people aged 18-24 in the EU, 2017

Source: Eurostat, 2019

Also in 2017, the EU-28 average for NEET youth was 14.3%. The country with the highest NEET was Italy (25.7%), followed by Cyprus (22.7%), Greece (21.4%), Croatia (20.2%), Romania (19.3%) and Bulgaria (18.6%). Spain (17.1%) is also above the EU average, followed by France (15.6%) and Slovakia (15.3%). At the other pole is the Netherlands with the lowest NEET (5.5%), followed by Slovenia (8.0%), Austria (8.1%), Luxembourg and Sweden 6,8%), Malta (8.5%), Germany (8.6%) and Denmark (9.2%). These countries with low levels are also the ones at the top of European charts in terms of economic performance, education, living standards and low rates of early school leaving.

In 2017, Eurostat analyzed NEET rates in several countries across Europe by study level and found that (NALO, 2019):

- In 20 countries the highest rates are found for young people with an intermediate level of education,
- 7 countries reported the highest NEET rates for people with low education,
- 19 countries recorded the lowest NEET rates for people with higher education,
- The highest rate of NEET for people with a high level of education is found only in Cyprus,
- The largest differences in education levels are found in Malta where the NEET rate for young people with a low education level is 7 times higher than for those with higher education.

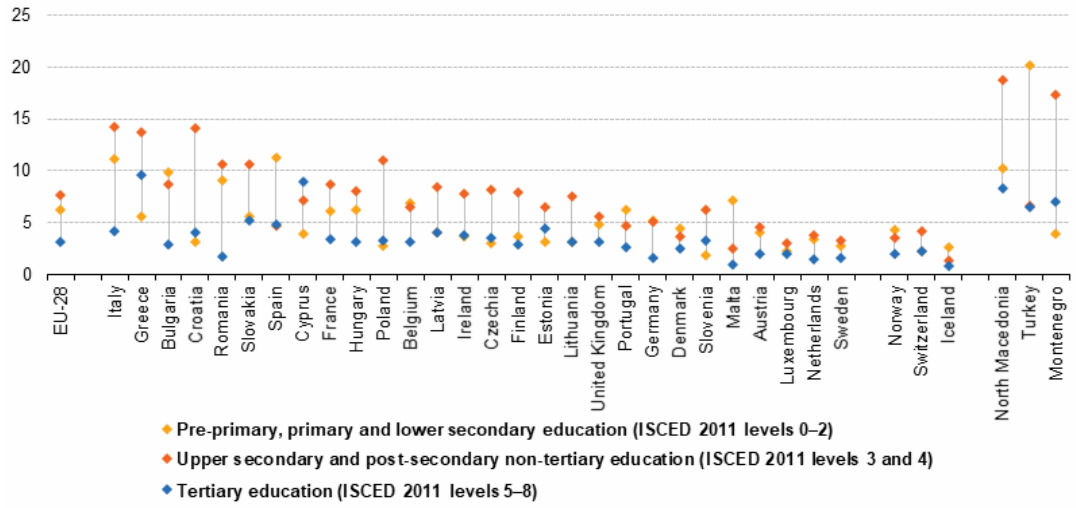

Fig. no. 2. Young NEET aged between 20-34 years, by level of education, 2017 (%)
Source: Eurostat, 2019

In Romania it was found that the rate of NEET for people with average education level is 6 times higher than for people with a high level of education and Malta, the rate of NEET young people with a low education level 7 times for those with higher education.

Conclusions

Employment policies aim at adapting and integrating the workforce to the current labor market requirements that are constantly changing due to the dynamic nature of the business environment.

Causes incompatibility youth labor market are varied, but their base sits access to capital for various options (such as studying or maintenance in the educational system, but also in creating a business) and the education and training inadequate demand current work.

Young people represent a workforce that should be valued because they can adapt more easily to the changes that are emerging in various fields have capacity to acquire the characteristics of a position to a job much faster than those in other categories of age. Moreover, they can outline ways to make a job more efficient by the multitude of information they assimilate.

Education is the main factor shaping labor market perspectives, so many young unemployed are those who have no education.

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COMPARATIVE ANALYSIS OF THE ROMANIAN AND LUXEMBOURGISH HEALTHCARE SYSTEMS

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Abstract
The state of health of the population is determined by access to health on the one hand and to the access to health services on the other. Access to health depends to a large extent on external factors to the health system: genetic factors, factors environment, economic development factors and socio-cultural factors. The access to health care is almost entirely influenced by the organization of the health system. Accessibility to healthcare services is determined by the convergence between the offer and the demand for such services, or, in other words, the availability of real-life facilities compared to the demand based on real health needs. Disparities in access to discrimination arise for at least four reasons: ethnic or racial; economic costs here, including the costs of the population (co-payments, treatment and hospitalization costs) as well as the other costs (transport costs, waiting times); inadequate geographic location of facilities; the unequal quality of services of the same type. This paper aims to examine two countries which are part of the European Union, Romania and Luxembourg, who have similar socio-economic groups and healthcare professionals with training, but are drastically different when it comes to the quality of healthcare received. The public healthcare system will be broken down into its sub-structures and compared to that of the private healthcare system, while taking an in depth look into the Romanian and Luxembourgish health systems, outlining differences and similarities and offering recommendations for the future.

Keywords
health system, comparative management, public and private ownership, quality of services

JEL Classification
I11, I18, H38, M54

Introduction

Poor information among the population on the need for medical insurance and on the conditions for access to medical services maintains some potential applicants outside the public insurance system. In such a situation there are groups from geographically isolated areas, very poor groups with a low education level which favors non-insurance behavior. First, it is an essential aid to understanding politics and government. In light of the similarities and differences that might exist between collections of facts, the comparison helps us to distinguish between significant and non-significant. (Popa, 2017) The performance of a healthcare system is largely influenced by how fundraising is taking place

to provide high quality healthcare services, and how they are distributed to health service providers.
Payment methods for health care providers are made through different mechanisms, and there is no direct link between how funds are raised and how they are distributed. Health services are funded through diverse organizations and funding systems. Depending on the model of health services, there are the following sources of funding: (1) direct non-reimbursable payment from the patient to the doctor; (2) private insurance; (3) social insurance for health; (4) coverage of the population with medical care.
The degree of coverage of the population with medical care is appreciated as different depending on the type of insurance:
- In social insurance for health, the contribution depends on the income of each citizen, and the provision of health services depends on the needs of each individual, respecting the principle of solidarity;
- Only high-income people have access to private insurance, and those with low incomes cannot benefit from health care;
- Universal governmental coverage is ensured, but human, financial and material resources are reduced because of funding problems.
Also, the coverage of the population with health services is different from one country to another, depending on the health policy of each one, on existing feasibility techniques, but nevertheless the current trend is towards universal, universal care with care medical, protecting underprivileged or at risk groups.

Health systems financing and expenditure
Type of co-contributions offers multiple ways of putting together governmental sources and individual contribution to increase the efficiency, quality and confidence of the health system. (Niagara and Manchikanti, 2012; Thomason and Kase, 2009). There are: Co-insurance - by which the patient pays a fixed percentage of the price of a received service and Co-payment - by which the patient pays a fixed amount on the medical act and doctor's remuneration.
This can be done on the basis of multiple structures: payment per service, payment based on diagnosis, the capital, the global budget, salary, payment for time worked (Wendt et al, 2009; Tudose, 2014).
The most used classification of health systems is according to the sources of funding. Thus these systems can be: (a) The national health system (Beveridge type) - funded by taxes; (b) The Health Insurance System (Bismarck type) - the financing is made by compulsory income-dependent insurance premiums; (c) Voluntary insurance system (private insurance) - the financing is private, the insurance premiums are depending on the risks of the insured. (Wendt et al, 2009; Elovainio and Evans, 2017 Westert et al, 2010).
The outcomes of the healthcare system is the most important issue when it is set up the best and affordable way of financing, the proper framework should consider the needs for health services, the quality and the sources. (Marmor, T. and Wendt, C., 2012; van de Goor et al, 2017).
The quality, efficiency and performance in healthcare system can't be affected by the austerity, the stat having the obligation to wach over the public health (Oderkirk, Ronchi and Klazinga, 2013; Wenzl, Naci, and Mossialos, 2017).

Research methodology
The present study is focused in presenting and analyzing the 3 systems of funding the healthcare (Wendt et al, 2009) and to highlight the advantages and disadvantages. Starting from the mile stones of the health systems and the expenditure management we are

presenting the comparison of the operational systems in Luxemburg and Romania as one of the first 5 countries and last 5 countries as expenditure amount per capita.
The analysis of healthcare systems and the actors' should be better done by considering the results. Measuring the success of the public policies, national reforms of healthcare system or implementation of healthcare programs will provide more effective information if the expenditure are properly used (Marmor and Wendt, 2012).
The levels we have considered were the theoretical-formal for the generally accepted systems and the operational for the case study of Romania and Luxemburg. The analytical comparison in the theoretical framework for our country (placed on the last positions among the EU countries) with reach countries system gives, in our opinion, an insight about how can be improved the performance even in shortage of financing.

Healthcare main system comparative analysis

a) National Health System

Countries which implement this system include: United Kingdom, Spain, Denmark, Finland, Sweden, Norway, Greece and Romania. It is characterized by: The sources of funding are general taxes, which come in the form of a government budget at the level of the government;- It is controlled by the government, which is also the payer; The budget is divided for different sectors, with each sector having a certain percentage, which is changed annually; The health rate is distributed by the Ministry of Health, on the basis of criteria, to county health authorities, which then distributes the existing funds to hospitals and family doctors; Doctors conclude contracts with local authorities, being paid in different forms: per act, per capita, per service, salary etc.; in this system there may also be a private sector.
Advantages: general accessibility; universal coverage; low cost of administering such a system.
Disadvantages: low efficiency in fund management; increased service offer from doctors for additional remuneration; lack of incentives for doctors.

b) Health Insurance System

It is the oldest system in Europe and operates in countries such as Germany, Austria, Belgium, France, the Netherlands and Luxembourg. This system is characterized by: Financing is done through mandatory contributions in various proportions for employer and employee; The contribution is made by paying a certain percentage according to income and is collected at the level of the insurance houses; It is the government that establishes health policies and ensures the mechanisms for pursuing the achievement of the proposed goals; The insurance houses are independent of the government, but their functioning is regulated by strict regulations and establishes service contracts with hospitals, family doctors, dentists, pharmacists, etc.
Benefits: Increasing the decentralization of the system, the money is not distributed by the Ministry of Health, the payment of various medical acts being made by different independent bodies (the insurance houses); funds for health are independent of changes in political priorities; There is competition between health care providers, by setting standards by paying bodies, which leads to increased quality of health care; Paying tertiary helps to establish and respect patients' rights as clients of health service providers; The flow of funds is visible in the system; the system provides stable sources of income for the health system; This model provides much more efficient provision of health services compared to other models, as well as increasing the funds available for health, both in absolute value and as a percentage of GDP.
Disadvantages: The contribution for health insurance paid by both the employer and the employee leads to an increase in the cost of labor for the companies, being able to get these premiums into the cost of the products; Those who are not employees (unemployed, pupils, pensioners, etc.) are covered from other funds from the state budget, which is difficult to

achieve in some cases; Difficult fixing of bonuses to be paid by self-employed workers, as these bonuses are mainly linked to earnings; Administrative costs are higher than for a system based on general taxes.

c) Voluntary insurance system – private healthcare system

This system is poorly developed in Europe and is well developed in the U.S. The voluntary insurance system is characterized by the prevalence of private insurance and the direct medical-patient payment model.

Benefits: There is competition between providers and funders of medical services, who have the interest to attract as much money as possible, and thus to as many patients as possible, which leads to the increase of the quality of medical services and to the increase of the quantitative and qualitative offer given to the patients.

Disadvantages: Poor population coverage with health services; The sanitary costs rise continuously, appearing in the phenomenon described as "adverse selection". (Wendt et al, 2009)

The three types of systems in practice are found under different combinations, modified from one country to another depending on the options of each. Recently, there has been a tendency to approach these types of health systems, and health policies aiming at combining benefits and reducing disadvantages. Thus, the national health system tries to introduce the competitive methods, which are specific to the health insurance systems. Also, in the system of social health insurance and the private system, tax changes are attempted by introducing regulations in this respect.

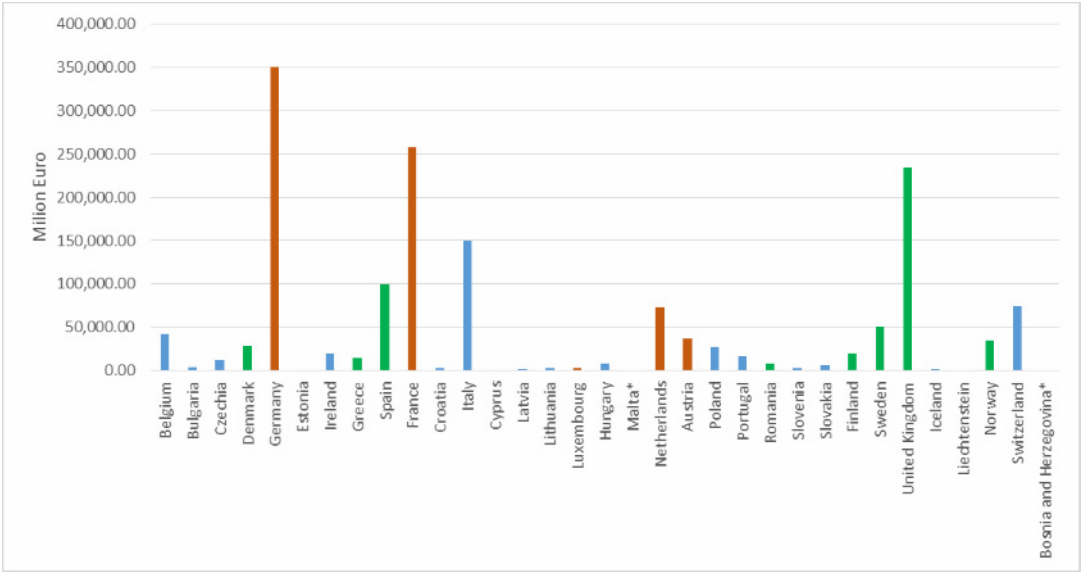

Fig no.1 Healthcare expenditure in EU Countries

Source: Eurostat, 2018. *Health in the European Union – facts and figures,* [online] Available at: *https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Health_in_the_European_Union_–_facts_and_figures* [Accessed 23 November 2018].

In figure no. 1 it can be seen that national system (in green color) and insurance system (in brown color) are applied in countries with large or small budgets as well. From the point of view of the role of the state in the financing of health care, three types of health systems can be described:

- Liberal systems characterized by private health insurance being funded through voluntary contributions paid both by employees and by employers – operates in Switzerland until the introduction of compulsory insurance.

- National systems – finance mainly from state taxes, but there is also a private sector present both in the insurance plan and in the provision of medical services – present in United Kingdom and Spain (Wendt et al, 2009).
- Intermediate systems - where pluralist funding is based, in particular, on social contributions and on voluntary contributions. Charges for patients are lower than those of liberal systems, but higher than those in national systems. Intermediate health systems are found in many European countries, such as France, Germany and Luxembourg.

The health system assessment can be done according to several parameters: the percentage of GDP spending for health, the population's satisfaction with health care, efficiency - expressed by mortality rates, infant mortality, birth hope, etc.

With respect to health spending, there are enormous discrepancies between developed and underdeveloped economically, but there are also sensitive differences even between economically developed countries.

The Romanian Healthcare System – A comprehensive breakdown

After entering the building, the patient comes in contact with the hospital staff. In private clinics there is always a reception, where he is kindly answered and is guided to the room or doctor he is looking for. If they have to wait, the patient is welcomed into the waiting room, where he finds a place to sit and wait civilized. In the case of public hospitals, there is no reception or waiting room.

When entering the building, the only way to find elemental information, such as the room you need to be in or where the you can find the doctor, is to ask left and right, patients, nurses, or doctors, and the correct answer is given by the second, fourth, seventh or tenth person questioned, often after many wounds in the hospital corridors, agitation and nerves consumed. Once they have reached the desired room, the patient has to wait in a row in a hallway, often tight, where he has to stand up with other patients of the fate and jump every time the door of the room opens to receive another patient.

Consultation schedules are treated differently in private hospitals than in public hospitals. In the case of private clinics, the patient can make appointments by phone. In public hospitals, the system is different and the notion of appointments is foreign. Starting from 7 o'clock in the morning, patients begin to sneak into the hospital corridors to find the doctor's office they want to see.

The duration of a consultation is a factor that shows the professionalism and seriousness of the doctor. In order to establish a correct diagnosis and treatment, the doctor should pay attention to the patient, ask questions and consult them in detail. Usually, in order to get a better view of the patient's affection, the doctor needs at least 15-20 minutes. This time spent with the doctor is essential for patient health and can make a difference between recommending appropriate treatment and one that will cause irreversible damage to patient health. In public hospitals, consultations take much less, sometimes just five minutes, and doctors are constantly discontinued by nurses or other patients entering the clinic.

The attitude of the medical staff towards the patient and their affection is essential for morale of the patient. The experience of a private hospital is one that does not stress, anger or humiliate the patient. Doctors and nurses are kind, attentive and receptive and the conversations take place in a relatively calm atmosphere. In public hospitals, the tense atmosphere and the high flow of patients make the workplace of the medical staff a stressful and agitated one. Physicians and nurses are constantly assaulted in the cabinets and waiting rooms, which prevents them from focusing on the task at hand. Continuous stress affects the ability of physicians to have patience and analyses the symptoms of a patient and maximize the chances of a correct diagnosis. (Fuchs & Emanuel, 2005)

The differences between the two systems are major and they affect both the patient's experience and the quality of the medical act. Apparently dull but important things, such as

the existence of a reception or the existence of a waiting room, can make a difference between a calm and patient doctor and a nervous and agitated one. In spite of the high costs the patient has to bear, all of the advantages that private clinics offer to the public make them the first to be a safer and more enjoyable alternative where the patient is treated humanely and civilized and has real chances to have the right diagnosis.
The private health care system has developed steadily over the past few years and is attracting more and more doctors and patients. Numerous clinics and private hospitals have been set up, especially in Bucharest. The high-performance equipment, the superior conditions and the kindness of the staff have attracted more and more patients to the private health system.

Table no 1. Healthcare expenditure (per capita in euros) in 2016

First 5 Countries		Last 5 Countries	
1. Monaco	4578	**24. Romania**	**410**
2. Norway	3989	25. Albania	382
3. Switzerland	3865	26. Ukraine	310
4. Luxembourg	**3750**	27. Bosnia & Herzegovina	181
5. San Marino	3250	28. Republic of Moldova	166

Source: Eurostat, 2018. *Health in the European Union – facts and figures,* [online] Available at: *https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Health_in_the_European_Union_–_facts_and_figures* [Accessed 23 November 2018].

The Luxembourgish Health Care System – SWOT Analysis

The health system in Luxembourg is one of the best in the world. However, it is not perfect and must be constantly adapted to changing needs, techniques and especially knowledge. To better guide these adaptations, you must know your strengths and weaknesses.

Strengths

Life expectancy in Luxembourg is higher than for the average European. Similarly, the state of health "perceived" by the global population is better in Luxembourg than other European member states. Tobacco and nicotine consumption is down. Immunization of children reaches very good rates. Curative care works well in terms of treatments for breast cancer and colorectal cancer.
The quality of the care appears high and the typical Luxembourgish citizen seems to maintain a positive relationship with his general practitioner inscribed by the continuity. The report also indicates that more interventions are part of a day hospitalization that the use of cheaper drugs is increasing, that there are no or few waiting lists for cares. Overall, the Luxembourgish are satisfied or very satisfied (more than 90%) vis-à-vis the health system, far more than the European average.

Weaknesses

Above all, the health disparities between the different socio-economic categories are very marked. Luxembourg has the population of around 500,000 people, with the capital, Luxembourg City housing just over 200,000 inhabitants. During the week, from 9am-5pm, Luxembourg City nearly quadruples in size, when everyone who lives in the neighboring cities and suburbs of Belgium, France and Germany, come to work. Luxembourg has a very high immigrant population, mainly compromised of Portuguese and Italians. The Luxembourgish aristocracy make up around 5% of the general population, while the rest fall under the middle to lower working class, thus making it more difficult to afford quality healthcare, which results in postponing doctor visits and ultimately leading to hospitalization or even death. Whether in terms of life expectancy, infant mortality, obesity, smoking, physical activity, social support, etc. the differences between citizens are great.

Perhaps one of the strongest if not the strongest similarity between Luxembourg and Romania.

Opportunities and Risks

The biggest opportunity is also the biggest risk for healthcare in Luxembourg, and that is allowing patients to pay for their consultations just by giving their word that they will eventually transfer the money into your account. The National Center of Security (CNS), which is equivalent to the CNAS in Romania, handles everything that pertains to both patient and doctor safety and satisfaction. Every individual who works in Luxembourg has to be registered with the CNS, including doctors. This is a very important opportunity, because unlike Romania there are no private and public hospitals, well theoretically there are, but there is no true distinction between the two. Patients can benefit from health care services from both private and public hospitals, from which they are reimbursed 90% of the total cost. Patients are also free to go see which ever doctor they want, giving that their schedule allows it, and most importantly all the consultations are billed at the same price around 48 euros for a GP consultation and around 55 euros for a specialist consultation (Healthmanagement.org, 2010). This has to be the biggest difference between the two healthcare systems, for example, not all doctors in Romania have to register with the CNAS, only doctors who work in the public health care system. If you want to go see a doctor in a private hospital in Romania and he does not have a contract with the state, then you will have to support all the costs of the consultation and follow-ups from your own pocket, and you will not be reimbursed, not even a slight percentage. System of financing hospitals account for the "money follows the patient", but in reality this applies only partially to the county health insurance houses, and if the National Health Insurance, transfers to county houses not achieved based on well-defined criteria. (Putan, 2012) Another opportunity, for Romanian doctors is that the state allows them to assert their own fees in the private system. For example, you can see a specialist in rheumatology at a private hospital and pay 20 euros and if you want to go see a Professor in rheumatology at the same private hospital you might end up paying upwards of 60 euros. This does not apply in the public healthcare system, which is a plus, but it is weighed down by all the negatives, such as a huge waiting period to see the doctor you want/need, and even if morally and ethically they have to treat you, some doctors still ask for a little ‘incentive’.

In Luxembourg the CNS allows the insured to set up their own appointment at a GP or a specialist, do a consultation, and during an ultrasound or a blood test, and they have the right to leave the doctor’s office without paying, just by promising that they will transfer the money. As stated before, the biggest opportunity for patients is in fact the biggest risk for doctors and the state. Not every patient tries to get away scot free, most of them pay on the spot, others have social welfare and the other third just try their luck. It is up to the doctor if he wants to follow up and press charges and go through a very long and drawn out legal battle, usually it depends on the amount owed, but in the end the CNS always reimburses the doctor, no matter how long it takes.

Conclusions

The analysis of these indicators and their comparison with other neighbors can be a good compass to guide health policy. We know the major impact on health of factors such as education, employment, housing, environment, income, etc. In these areas, we must also act to improve the health of the people. If socio-economic inequalities increase through austerity measures, inequalities in health will worsen. In these difficult times, social cohesion needs to be strengthened rather than unrevealed.

Financial accessibility to health care has deteriorated. The increase in patient costs has led to postponements of care. And we see that private hospital insurance is growing. The warning is clear: we must act on the cost to the patients, either by decreasing and better regulating

some prices, or by better reimbursing some expensive care. At the same time, we can act on the accountability of healthcare providers, by setting up other less inflationary financing techniques, by favoring self-monitoring based on good practice guides.
Finally, faced with a first line of care in danger, the average age of generalists continues to increase, it is to ensure its survival, continuity and development. To face this major challenge in terms of the sustainability of the system, the governance model that will be adopted by each country for the transferred competences will be decisive. If it invites collaboration and complementarity with the federal level, we can hope to meet the challenge of a first line of local and accessible care.
In the future, it is impossible to lead and coordinate a health care system without having reliable, transparent, useful and scientifically-based information, which is why the availability and accessibility of information needs to be well-tuned, thus tending towards an integrated information policy.

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ROMANIAN PERSPECTIVES AND CHALLENGES IN POSTING OF WORKERS DIRECTIVES

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Abstract
In the context of transnational services provision, on the framework of COM(2016)128, the Posting of Workers Directive 1996/71/EU and 2018/957 lay down the legislation applicable to the employment relationships as a specific instrument of free movement of persons while achieving the internal market [Directive 1995/71/EU (1), (2) and (3)]. The transnational services are increasingly provided, based on the posting workers mechanism. This mechanism is a particular case of labour mobility where the employees work under the (an EU) source labour market rules, but carrying out services in (an EU) host country, on a temporary basis and without integration on the labour market's host country. The EU's states heterogeneity among the level of labour protection standards demands under the Directive 1996/71/EU the minim rights and working conditions guarantee. The need to develop the internal market further while both business and workers have to contribute to EU increase economy competitiveness under the decent work agenda, demands new progress in the posting of workers. In this context, we analyse the main characteristics of the current situation and some challenges requested by an administrative management of the posting workers in Romania. Conclusion emphasises the priority of better exploiting the administrative sources of the posting workers as official statistical sources for better measurement and monitoring, a part of the *Internal Market Information System* (EU- IMI System).

Keywords: posted workers, transnational services provision, internal market, administrative management

JEL Classification: J61, J83, F16, M16, M55

Introduction

In the context of transnational services provision, on the framework of COM(2016)128, the Posting of Workers Directive 1996/71/EU lay down the legislation applicable to the employment relationships as a specific instrument of free movement of persons while achieving the internal market [Directive 1995/71/EU (1), (2) and (3)]. The Enforcement Directive 2014/67/EU brings supplementary clarifications and a better monitoring framework of transnational posting of workers brought by the on the enforcement of Directive 96/71/EC and amending **Regulation (EU) No 1024/2012 on administrative cooperation through the Internal Market Information System** ('the IMI Regulation').

The Enforcement Directive 2014/67/EU "aims to strengthen the practical application addressing fraud, circumvention of rules and exchange of information between the Member States" **demanding a new legislative framework** at the national level, compulsory since 18 June 2016. The need to further develop the internal market while both business and workers have to contribute to EU increase economy competitively under the decent work agenda demands new progress in the posting of workers. Since 8th of March 2016, the EU Commission launched a large debate on the revision of the rules on posting of workers, next to current rules to adopt new ones, mainly "foresees that posted workers are subject to equal pay and working conditions as local workers".
Another direction of discussion, for posted workers domain, is subordinated to the decent work agenda applied in production chains. The transnational production chains are shaped by the **globalisation and developments in technology and demographics**, looking for guarantee a minimum basis of rights but "also to tailor development to values and principles of action and governance which combine economic competitiveness with social justice." (COM 2006 249 final, p.2-3) The concept and value of **decent work** are incorporated by the Community acquis, in the fields of *employment, social policy and equal opportunities* (ILO, 2008, p.3). The community acquis next to ILO standards is implemented at national level by "labour administration and inspection, trade union freedom, collective bargaining and minimum standards regarding social security". (COM 2006 249 final, p.4)

Challenges resulting from the implementation of the Directive 1996/71/EU at EU level
Richard (2014, p1) points that the posted workers start since 1974 as a regulation of social law in host countries. In 1996 the Directive 71 covers for EU15 countries with a homogenous labour cost. The initial heterogeneity regarding labour cost from the third EU enlargement wave – when Spain and Portugal in 1986 join EU, was increasing more and more and accentuate this gap when Central and Eastern Europe Countries joined (closing with the 6h wave was of entering Romania and Bulgaria). Posting of workers started to be accompanied with "fraud and social dumping and even modern slavery". Fraud manifests in a large scale of actions, from "deductions for housing and transport costs, unpaid wages, lack of social protection, the hazardous nature of the work undertaken, unsatisfactory lodgings", not declaring the posted workers to the responsible institution from the host countries, fake posting of workers when declaring "phantom" address location in low cost countries, and, at limit, points to "modern slavery" referring the case of Romanian agricultural workers housed in Calabria" (Richard, 2014, p5).
The interest for this instrument of labour mobility was also powered by other reasons, linked to demographic, economic, competitivity reasons like:

- the increasing presence of "**labour shortage in certain sectors**", especially in developed countries with aged population;
- the increasing demand for skilled persons for a temporary duration – offering the advantage of diminishing the migration of population;
- **accelerating the recruiting** of Human resources and decreasing it costs;
- represents a mean to "counter unemployment" in some states (Richard, 2014, p4);
- the need to "create an environment which is conductive to national and foreign investment **in the creation of jobs at local level;** improve governance, including the social dialogue; identify shortcomings with regard to decent work; establish a legal and regulatory framework to protect workers and ensure equality between men and women; establish viable systems of social protection, education and lifelong learning; ensure legal certainty for businesses; reduce corruption and establish fair rules for competition. Promoting decent work in this way is also a need felt by (COM 2006 249 final, p.4)"
- De Wispelaere and Pacolet (2016, p.9) identify as overall economic value and impact of posting, next to stimulate intra-EU labour mobility ad competition the posting

workers as a tool to ”increase the household income of the posted workers, a tool to support adjustment shocks and also a tool to create social convergence”.

Directive 2014/67/EU is the EU Commission response to the Belgium complaint about unequal competition base by the case of the German abattoirs. (Richard, 2014, p5).

Next steps to be take in consideration

Tacu (2015, p.624) emphasise that the phenomenon of “Posting of workers” is a very complex endeavour, placed at “the intersection of at least three levels of conflict: **economic versus social, national versus European and developed versus emerging**. On the other hand, the theme of transnational posting of workers defined by theoretical concepts belonging to several scientific domains, from human resources management and labour relations, continuing with the European and national law and ending with labour macroeconomics, business internationalisation and workers mobility”. This complexity is accentuated by “the influence networks, linguistic characteristics, mobility-migration traditions, and types of geographic proximity”. (Tacu, 2015, p.628).

Padersini and Pellini (2010, p. 33) advise to careful “assessment of the potential impact of the Directive on posting of workers – firstly, **regarding the impact on the national labour regulations and industrial relations systems** and secondly regarding **the impact on the balance between economic freedoms and fundamental social rights.** The specificity of the EU idea is not to establish a definite hierarchy for solving the two potential dichotomies of national versus European, and economic versus social, but rather to find a progressive combination between these different poles”. (Padersini, Pallini, 2010)

Voos & Maack (2016, p 64) concludes that there is still the need to:

- “provide greater clarity regarding the dual objectives of the PWD with regards to fair treatment of service providers and workers' protection;
- combat not only major forms of abusive practice but also unfair competition and unequal treatment of posted workers;
- simplify regulation and provide better information to both the workers and employers involved in posting;
- respect national systems of industrial relations, as well as the autonomy of social partners to regulate in the field of labour law and employment terms and conditions”.

All these challenges demand a ”need to identify complex models capable of synthesising mechanisms involved in this variety of European mobility management of human resources”. (Tacu, 2015, p.624). Modelling needs indicators and data as inputs, measured comparatively at EU level, in the framework of the EU 1996/71 Directive.

Methodology and measurement

The main data source for estimating the posted workers at EU level is based on Portable documents A1 (PD A1). Portable Documents A1 (PD A1) is ”a formal statement on the applicable social security legislation” according to Article 12 of Regulation (EC) No 883/2004.

Portable Documents A1 (PD A1) –as administrative source presents some limits. The A1 measurement of posted workers fails to estimate these “real” numbers because:

- There are methodological differences given by the administrative instrument used to measure the posted workers. The social security objective stated by the Regulation (EC) No 883/2004 cover a larger categories typologies than the Directive 1996/71/EU. The Regulation looks at the in employment person in general, including the self-employed persons while the directive excluded it, covering only the employed persons (under temporary dependent contract);
- The geographical area where the services are provided by the posted workers could be larger, beyond the borders of 2 states, covering simultaneously more than 2 host

countries: "workers active in two or more Member States may fall under the terms and conditions of the Posting of Workers Directive, and thus be considered as 'posted workers';" (Pacolet et.al., 2016, p.9)

- The number of PD A1 is larger than the number of individual persons working as posted workers. Pacolet et.al.(2016, p.10) estimates that that, on average, each person has been posted 1.9 times during the observed period (2015) respectively 54% of the total numbers of PDs A1 and in the case of posted workers active in more than 2 states "on average, each person received some 1.2 PDs A1 during reference year", respectively 84% of the total numbers of PDs A1 express the individual persons working as posted workers;
- the number of posted workers **had been underestimated**, as a consequence of fraud practices, some companies do not fill the documents in the host country and do not declare the posted workers " Richard, 2014, p2);
- There are initiated pilot projects at EU level in view to consolidating the administrative capacity to increase informational transparency and better access to information and data characterising posted workers. A recent example is the Project: "VP/2016/006/0037 EU Post-Lab: Developing experiences of administrative cooperation and enhanced access to information in the framework of the posting of workers". This project aims to "support administrative cooperation and information exchange at a transnational level between paritarian social funds of the construction sector, and to pave the way for a gradual enlargement of information shared and of the bodies involved thanks to the creation of a network of stakeholders in 10 EU countries and Turkey".

The complexity of the phenomenon of posting workers **is not described by the official statistics.** Posting of workers is phenomenon with increasing practice, and on the internal market background presents the huge potential to become: "**European model for mobility of Human Resources**" (Tacu, 2015). The highly interdisciplinary character of this phenomenon requests innovative solutions to be found from the national administrative systems, but functionally connected to the **Internal Market Information System.**

Dimensions of the posting workers in Romania and EU

În 2015 at EU area for all Member States (MS) were reported over 2 million PDs A1 from which 2.3% were PDs A1 issued by Romania as a sending country, counting 46.8 thousand PDs A. In structure for all MS 66.9% were reported for posted employed persons, 5.4% for posted self-employed persons, 25% for PDs A1 for person active in one or more states and 2.1% for other situations. Romania's profile is different in the structure by posting workers, almost all PDs A1 are reported 98.4% for posted employed persons, 1.4% PDs A1for person active in one or more states and 2.1% for other situations. Another difference is given by the share of PDs A1 in total employment – Romania's level is only 0.6% while the average of all MS is 10.9%.

During 2010-2015 the evolution of sending and receiving PDsA1 for posted workers (employed and self-employed) from all MS indicates a continuous increasing, with 41.3% growth rate. The number of PDs A1 (employed and self-employed persons) for all MS is 1.5mil in 2015, registering a positive modification with 0.47 mil formulas. In 2015 compared to 2014 this tendency of growing slowing down at 2.8% growth rate.

Romania's indicates a dependence of economic cycles and a huge imbalance between sending and receiving posted workers. During 2010-2015 the growing rate of PDs A1 for Romania as a sending country registered 57.7% the rate of growth, higher with 16.4pp than the rate for all MS but this rate downfall at -18% for the 2014-2015 period. Romania as a receiving country registered 13.4% the rate of growth, lower with 27.9pp than the rate for all MS but this rate accelerating at 10.2% for the 2014-2015 period, higher with 7.4pp than the rate for all MS as receiving country.

The unbalance between sending and receiving posted workers is also reflected by the following ratios:

- The share of Romania's received PDs A1 in total receiving MS is 0.9% in 2010, decreasing with 0.2pp in 2015 at 0.7%.
- Romania's share of receiving to sending PDs A1 for posted workers was 31.8% in 2010, decreasing with 9pp at 22.8% in 2015.
- In 2015 differ the number of posted and self-employed persons regarding sending/issued or receiving. The Romanians that works aboard as posted workers are mainly (99.9%) employed persons while the foreign citizens that work as posted workers in Romania are 96.4% employed persons and 3.6% self-employed persons. At the average, for all MS the share of self-employed person that work as posted workers is more than double, respectively 7.8%.

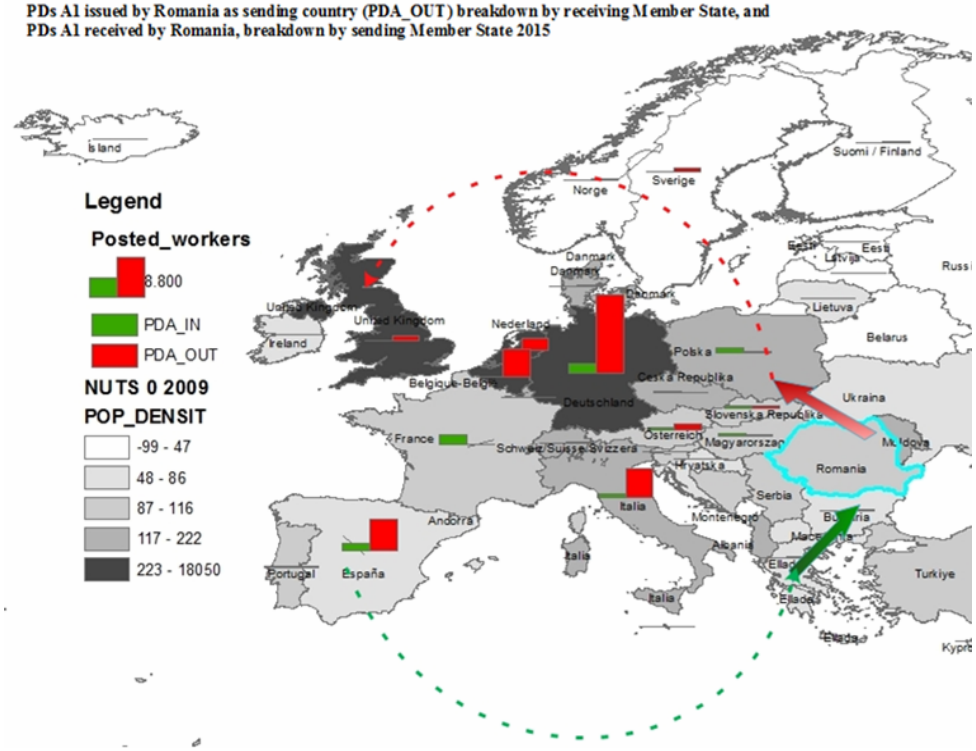

Fig. no. 1 Romania sending and receiving workers

Source: Map made by authors in Arc Gis 10.2 Desktop, ESRI Ro shapefile, data from Administrative data PD A1 Questionnaire 2016, cited from (Pacolet et.al., 2016, p.18) (Source data: [migr_pop1ctz], Eurostat data).

The number of PDs A1 for posted workers in 2015 for Romania and MS, breakdown by economic activity indicates:

- The main sector Romanians are working aborad as posted workers is agriculture, registering 13.7% share of all PDs A1.
- The second important presence of Romanians working as posted workers abroad is transport and storage+ information and communication with an 11.3% share in total PDs A1 issued by all MSM;
- The third sector by importance is Industry (B-F) with 5.9% the share of Romanians PDs A1 issued by Romania, respectively with a share of 4.8% in construction in total MS;

The main sectors of PDs A1 for foreigners working as posted workers in Romania are:

- Finance and Insurance; Real estate; professional, scientific and technical activities; Administrative and support service activities NACE K, L, M and N with a share of 0.6% in total PDs A1 issues by all MS;
- Wholesale and retail trade NACE G and Education, health and social work, arts and other services NACE P, Q, R and S, in both groups with a 0.5% share in total PDs A1 issued by all MS;
- posted workers are 79% in industry (B-F), 3.4% in agriculture. Comparing with the average structure for all MS is visible the structural difference positive with 12.9% for industry and with 2.2% in agriculture;
- Regarding receiving posted workers, foreign citizens indicates a positive difference in structure in temporary employment agency NACE N with 1.8pp.

PDs A1 issued for Romania as sending country (PDA_OUT) and receiving from Member States(PDA_IN), (Fig no.1) indicates that the posting workers model is not based on geographical proximity. Romanian posted workers the main receiver is Germany with 17.6 thousand PDsA1, Spain with 7 thousand PDsA1, Italy with 6.5 thousand PDsA1, Belgium with 6.2 thousand PDsA1. The main sender countries to Romania for foreigner posted workers are Germany with 2.3 thousand PDsA1, France with thousands PDsA1 and Spain with 1.8 thousand PDsA1.

Biletta and Torres, 2016 indicates as key features for Romania's state of play of transposition of Directive 2014/67 to improve enforcement of European regulations as regards posting of workers (mid-2016)**:**

"- Strengthening of the administrative cooperation; obligation to use the IMI system

- Increasing roles for the Labour inspectors: put information at the disposal of service providers, checks, frame of complaints

- Criteria and control measures to be fulfilled by service providers in RO for adequate control

- Liability of subcontracting chains

- Trans-border application of administrative penalties/fines".

Following the adoption of the L16/2017, the Ministry of Labour and Social Justice will elaborate the **methodological norms and** the specific procedure for the posting of employees in the framework of the provision of transnational services on Romanian territory for its implementation, which shall be approved by a Government decision (according to ART 55. L 16/2017). At the date of entry into force of the Government Decision provided for in Art. 55 the Government Decision no. 104/2007, published in the Official Gazette of Romania, Part I, no. 111 of February 14, 2007, shall be abrogated.

According to the new legislative framework, the information management regarding posting workers in Romania is assured by the Ministry of Labour and Social Justice and Labour Inspection. These institutions assures the updating the information provided in the country card on the transnational posting of employees on Romanian territory, annually or whenever necessary." [ART 28. L 16/2017 (7)]; are the national authorities providing general information to posted workers and businesses about national legislation and practice applicable to them in respect of their rights and obligations in Romania. [ART 28. L 16/2017 (8)]; Assures the information access in a clear way publishing on the Labour Inspection the following minimum information [ART 28. 3), L 16/2017]; The Labour Inspectorate is the competent authority with liaison office tasks that ensures the fulfilment of the administrative cooperation obligation with the competent authorities of the Member States or the Swiss Confederation (Art. 14 L16 / 2017). The National Supervisory Authority for the Processing of Personal Data (Art 18 L16 / 2017) participates in the administrative cooperation.

National Agency for Fiscal Administration (ANAF) is the competent national authority with the attribute of cross-border recovery of amounts resulting from the application of administrative, financial sanctions and fines (Chapter IV, L16 / 2017). ANAF, as the demanding authority, executes the Labor Inspection decision, informs the controlled enterprise and/or the requesting member state, the licensed authority on the request for recovery of an amount resulting from administrative financial penalties, as well as relevant documents, as the case may be, according to the Romanian legislation.

Conclusions

The most important receiving countries for Romanian Posted workers are also the destination countries form Romania's migration in 2015: Italy with 1,131,839 Romanians (1st place), Spain with 708,389 Romanians (2nd place) and Germany with 345,753 Romanians (3rd place)

Romania's posting worker future challenges as we identify based on the present study

The main sender countries to Romania for foreigner posted workers are Germany with 2.3 thousand, France and Spain with 1.8 thousand PDsA1.

The increasing importance of the posting workers as a European mobility tool request special attention at all levels: European, national and local. Next to EU level challenges for Romania, there are some challenges at the national level: Law 16/2017 implementation, monitoring, measuring and measures applying in a transnational framework. The Romanian labour force mobility, in general, requests a special attention for Romania. The specific case of posted workers mobility in the context of free services adds some new insights to the problem of free movement of labour demanding information: national level (with authorities, institution, ministries, firms, and workers), other states devolpping administrative cooperation. Both cases demand special management based on moderns informational systems. The Posting of Workers Directive 1996/71/EU opens a large front to work for administration in view to identify the best indicators and assuring continuous data measuring, administrative database building as the only way in which is possible to provide input data flows for the human resources management. The Ministry of Labor and Social Justice, Labour Inspection, ANAF, The National Supervisory Authority for Personal Data Processing, needs to be coordinated and connect to IMI. This process request to build an National Informational Sistem very complex in both dimension – internal and external, still unsolved by the L344/2006 as signaled by Milieu (2009) concerning the transposition of the administrative cooperation and on making the information on the terms and conditions of employment, Biletta and Torres (2016) signaled the challeng regarding the "Liability of subcontracting chains" monitoring.

We consider as the main priority the better exploiting the administrative sources of the posting workers as official statistical sources for better measurement and monitoring, a part of the *Internal Market Information System* (EU- IMI System).

Acknowledgements

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CITIZENS' PERCEPTION TOWARD THE PUBLIC INSTITUTIONS – SATISFACTION LEVEL

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Abstract

Public administration, through its role at the social level, but also through the mechanisms of organization and functioning, can significantly interfere with the perception of the entire administrative system, from the local level to the central one. Citizens, in their capacity as the main beneficiaries of the services provided by it, through their direct or indirect interaction of cooperation/ conflict or subordination, make this administrative mechanism permanently transformed to adapt to the conditions imposed by the development of society and, implicitly, the different needs of those who form it.

The present paper aims to highlight the citizens' perception of the public administration and the relationship with it in order to find tools, methods or actions that increase the level of satisfaction of both actors.

Keywords

Public administration, perception, satisfaction

JEL Classification

M31, H83

Introduction

Through its role, namely to be the image of a country, public administration is the oldest and most important legal institution. The term administration derives from Latin, from the word ministry, which means servant, and is closely related to the magister (Nicu, 2007), that is, the master to which he was subjected (Negoita 2009, p3). According to the Explanatory Dictionary of the Romanian Language, the administration means "the entire administrative organs of a state.". Thus, in this semantic context, the verb to administer can be interpreted as leadership, organization, coordination, guidance of citizens in a given territory, in which it is used and used.

When institutions seek solutions to citizen satisfaction and methods to promote their services to their aid, marketing intervenes (Grigorescu, 2008). Marketing can be likened to a clock system where the products/ services associated with the secondary indicator of the clock are provided to the customer, the customer being the minute watch, satisfying his needs, satisfaction being the hour indicator. All three work continuously and in a close relationship. Doing one of them may damage the entire system.

The public administration specific services generate the most frequent interactions between citizens and authorities; public administration may be seen as a link between citizens and public policies (Grigorescu, 2006), a communication channel necessary for the functioning

of a society (Brooke&Yang, 2012), but sometimes disturbed by various difficulties or barriers (Chiru, 2003). These are specific to either the transmitter or receiver and appear at the language level (difficulty of expressing or interpreting the message by using confused / inappropriate words) or in a context where the lack of attention or interest in receiving the message, the emotional state of the transmitter of the receptor generates ambiguity and unprofessionalism (Danciu & Grigorescu, 2000).

Research methodology

To find out what citizens perceive about their relationship with public authorities in Romania, we have developed a questionnaire with the help of Google - Forms. It could be accessed at address https://goo.gl/forms/wvyisgEOSNFlV9o93. Before it was publicly offered for completion, it was tested to verify its functionality (it does not involve viewing problems of all the questions' answering variants; spelling is correct, clear questions). The creation of the online questionnaire highlighted numerous concerns related to the assumed one: the perception of people about corruption, the perceptions of the clients about the services received, the image of the various institutions in the opinion of the citizens, the perception of the population regarding the activity of civil servants, the transparency of the public institutions in Romania.

The questionnaire was distributed in the online social networking environment, available from 05/18/2018 to 11/18/2018. At the end of this period, 171 responses were aggregated.

The questionnaire contained 14 queries, closed and opens, with a single answer but also a multiple answer. Completing it took about 10 minutes so that the respondents could remain focused until the end and thus reduce the risk of not finalizing it.

The main variables we have considered relate to the direct relationship of the citizens with the authorities, their perception of the quality of the public services reflected in the activity of the public administration institutions. It was offered the opportunity to grasp gradually the satisfaction, respectively the dissatisfaction of the respondents regarding the details that make up the directions analyzed through the questions asked. We also evaluated these analyzed directions with the help of two control questions, one closed and one open type, so that, by correlating the answers, we can draw a detailed profile of the relationship between citizens and authorities. In order to highlight the personal, pregnant needs of the citizens, we introduced an open question in the questionnaire asking for the respondents to enumerate proposals for improving their relationship with public administration institutions, thus understanding the action direction of the administration that citizens need and which these will support (Voican, M., 2006).

The research ethics

In the introductory part of the questionnaire, the purpose of the research was stated so that the persons who access the address to which they are located to be informed regarding the subject for which they are asked for their opinion. Thus, we ensured the informal consent of those who participated in the research. Also in the introduction, we assured you that there are no correct or wrong answers that could be offered to encourage the sincerity of the respondents. To ensure that personal data is protected and that they will not be used for purposes other than the present study, we have stated from the outset the guarantee of anonymity and confidentiality for all those who respond. We also mentioned that their participation is voluntary so that there are realistic expectations about the lack of remuneration for their contribution to the present research and, last but not least, that there will be no repercussions if they refuse to participate or change their minds during the process.

The way the questions were formulated was simple and coherent by using a colloquial and not a specialized language because we considered it very important the understanding of the

questions because the level of education of the respondents was different and only so the answers could be real and interpretable. The questions were prepared and written in an objective way, so that they can give the subjects freedom of analysis and expression without influencing their response.

The research's limits

The questionnaire is an exploratory study, not a representative one, because there are under-represented categories (for example, the category of respondents aged over 65, the category of people without studies) or overrepresented (for example, the category of people with urban residence, with higher education). Thus, the conclusions drawn from the analysis of citizens' responses cannot contribute to a statistical generalization, but it helps to shape a profile and a model of strategy.

The main limit of the research conducted in this study was the distribution of the questionnaire in the online environment that leads to the restriction or even elimination of certain categories of respondents (Grigorescu & Chitescu, 2017). According to a survey of the National Institute of Statistics in 2017, almost 70% of the Romanian households had access to the Internet, over half of them (64.3%) being in the urban area. Compared to 2016, the improvement of Internet access in households in the country, as well as the Internet connection of rural households, was very low (by 3.6% and 0.5% respectively). Also, in rural areas, only half of households have access to the internet, which means that there is little chance that a questionnaire distributed online will reach the rural population.

Results and discussions

Since the questionnaire was anonymous in order to obtain summary information on those who responded favorably to the completion, in the first part of the questionnaire, we asked for data on the identity of the respondents: gender, age, residence, study level, and the environment in which they work.

Of the 171 respondents, 119 are female (69.6%) and 52 are men (30.4%). 36.8% are between 18 and 30 years of age (63 people), 12.3% are between 46 and 65 (21 people). The majority of respondents (49.7%) are aged between 31 and 45 (85 persons) and the lowest (1.2%, two persons) are over 65 years old.

Most respondents from the questionnaire come from urban areas - 90.6% (155 people) and only 9.4% belong to the rural environment (16 persons). Regarding the level of education, a high percentage - 88.9% (152 persons) have higher education, 9.4% have high school education (16 persons), and 1.8% of them have gymnasium studies.

An equal distribution of respondents to the questionnaire from the environmental point of view (41.5% of respondents working in the private sector, 48.5% in the public environment) was observed, which is an advantage in shaping an image of the perception of the relationship between citizens and public authorities. People who do not work also expressed in a percentage (9.9%) their opinion. The question about the respondents' opinion regarding the current functioning of the public administration in Romania implied an open response in order to give people the opportunity to express themselves clearly and precisely.

In interpreting the answers, we chose to encode the words/ phrases transmitted by those who completed the questionnaire in three categories: negative, positive and neutral. There was a disproportionate allocation because we obtained 405 responses that have a negative impact (93.75% of the total of words/ phrases being negative) and only 25 responses that can be ranked as positive points in citizens' perceptions of public administration. Two of the answers were neutral; they could not be identified if they expressed gratitude or dissatisfaction ("Government", "centralized power"). Also, each of the two "positive - negative" categories was divided into subcategories, taking into account the aspects of the public administration function to which the recorded words relate. Thus, in this case, people

referred to the quality and access to public services, to their legality and their organization through work processes, work efficiency, staff attitude and bureaucracy.
Regarding the unfavorable descriptions offered by the respondents, the most have indicated as a source of dissatisfaction issues related to the speed and efficiency of the activity of the public institutions.
Most of the opinions referred to the efficiency of public administration, describing public institutions as a "heavy-duty" system that operates "with the braked pulse", which involves "increased queues", but also improves and "works in the interests of citizens". The word "bureaucracy" was the most common among the answers. By this term is meant, in a general definition, an abundance of written documents and complicated procedures.
There are numerous specialized papers indicating bureaucracy as a problem of Romania that affects the image of public administration in the eyes of citizens, jeopardizes their trust in public institutions, but also the attraction of European funds (Francu & Hociug, 2012) and the opinion of the respondents to our study support these views and conclusions.
The main positive aspect of public administration was, according to the respondents, the employees in the public system whom they described by words like "responsibility", "professional/ professionalism", "seriousness", "respect", "promptness".
More than half of respondents, 66.1% (113 people), said that when they have a problem/ situation they do not always know where to address it, while 27.5% (47 people) said they knew, they were informed.
Regarding the main source of information about the activity and services offered by a public institution, 77.2% (132 persons) indicated the internet, 11.7% said they learned knowledge/ family information/ friends, 7% from the counter/ public relations service, and the other 4.1% said they were informed from other sources-friends, TV. Although according to an IRES study, TV is the main source of information for 77% of Romanians, the low percentage of respondents who are informed about TV public institutions is explicable because in the media of this type it is a habit of talk at most about certain civil servants or politicians, not about the institutions they represent. We consider that more than 10% of respondents who know from the knowledge, relatives, and friends about the proposed topic indicate that many people get non-standardized, possibly incomplete, informal information. Because of this, the image of public institutions can suffer.

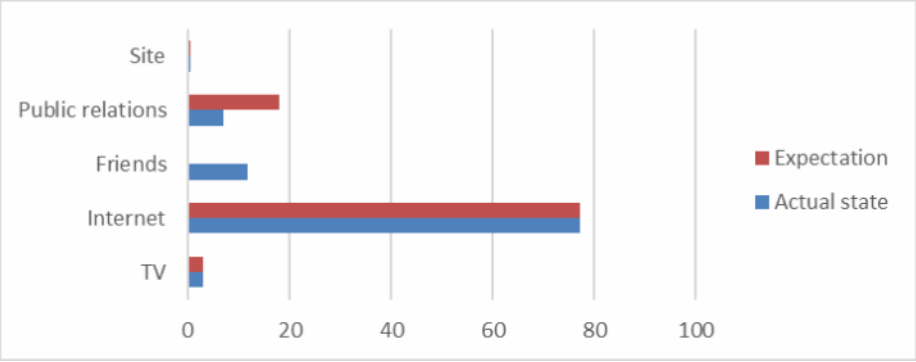

Fig. no. 1 Main sources of information; present vs expectation

Source: Actual state - http://www.insse.ro/cms/sites/default/files/com_presa/com_pdf/tic_r2016.pdf, Expectation – authors data processing study

In view of the future prospects, most of them said they wanted to be informed about the activity and services provided by the institutions via the internet (77.2%, 132 persons), 18.1% (31 persons) want to know information through the counter/ public relations, and the

remaining 4.7% want to find information from events, sites to be updated daily from TV. The fact that a double percentage of respondents said they wanted to be informed about the activity of public administration from someone authorized (counter, public relations), compared to the percentage of those already informed from this source, indicates a weak point authorities to ensure this need for citizens. In the question we considered it appropriate not to offer the source of "friends, knowledge, relatives" as the source of information is not desirable, being an informal and subjective one.

When asked about the appreciation of the relationship between citizens and public institutions, 69% think it is a poor one, and only 17.5% see it as a good one. Approximately as many people as positively believe, 13.5% believe that there is no such relationship.

The relationship between the two actors is composed of several aspects that we have surprised in an open question (question no. 6), in which we asked the respondents to describe in three words how the public administration is currently functioning. Given that all aspects were more negative than positive, the answers correlated to the two questions (no. 5 and no. 6) show that people do not constructively interact with public institutions, and vice versa, being a little confused to provide a clear answer.

Regarding the evolution of the quality of services provided to citizens by public institutions in the last 5 years, half of respondents to the proposed questionnaire (50.9%) consider that it remained the same, almost 30% (or 27.5%) believes that quality has increased, and around 21.6% believe that the quality of the citizen's services has declined thanks to public administration services.

Regarding their opinion about the quality of services offered by public institutions today, more than two thirds (76.2%) of the respondents did not have a positive opinion 21.6% declared they were satisfied, and only two people said they were very satisfied (1.2%). Also, from correlating the answers for this question to the answers given in question no. 6, it is clear and concludes that citizens are dissatisfied with the public services that the public administration offers.

For a more complex analysis of citizens' level of gratitude, they were asked to respond, on the basis of their experience, to a few aspects related to the institutions. As follows:

- In terms of access to information on services provided by public institutions, 64% say *"not at all satisfied"* and *"not too satisfied"*, 22% have a neutral opinion *"neither satisfied nor dissatisfied"* and only 13% they say *"quite pleased"*. No respondent said he was very satisfied with this;
- Regarding the transparency of public institutions, one third of respondents declared *"not at all satisfied"*, 41.52% *"not very satisfied"*. Thus, while 77% of them have a negative opinion, not even 10% (8.77%) are not *"quite satisfied"*;
- in relation to the accessibility of the location where public institutions operate, less than half (40.35%) expressed dissatisfaction, a fairly close percentage declared themselves *"quite satisfied"* and *"very satisfied"* (33, 33%); Also, about a quarter of the respondents (26.32%) consider themselves *"neither satisfied nor dissatisfied"*;
- the work program with the public is appreciated by about a quarter of respondents (23.98%) satisfactory, while more than half (58%) of them are dissatisfied (the two degrees of dissatisfaction - moderate and extreme - are approximately equally represented, 58 persons, respectively 41). For 20%, the work program with the public seems to be irrelevant in relation to their relationship with public institutions, declaring themselves *"neither satisfied nor dissatisfied"*.
- The space in public institutions to work with the public is the place where interaction between the two actors takes place. Around 18% are satisfied with this place, while about 60% are not satisfied.

- With regard to the waiting time for resolving the problem, most of them declared *"not at all satisfied"* (90 out of 171), and other respondents who account for more than a quarter of the total, 27%, said they were *"not too satisfied"*. The remaining 10% have positively appreciated this.
- About the behavior of employees in public institutions, a quarter of respondents say they are not at all satisfied, and only 15% are satisfied.
- A percentage of 20 respondents believe that the language used by public institution staff is a clear one, but the perception of just over half (58.47%) is at the opposite end.
- In addition to the clarity of language, the consistency of the information provided is important in the communication between citizens and authorities. 55% of those who participated in the study said they are not satisfied with what they find out from the contact staff, and less than a quarter (19.29%) is satisfied with this.
- The volume of documents required to solve the problem is a reason for dissatisfaction with 93% of the respondents (101 out of 171 opted for the most form of dissatisfaction), while only 5% (10 of the 171) consider that the volume of documents requested is a positive aspect.

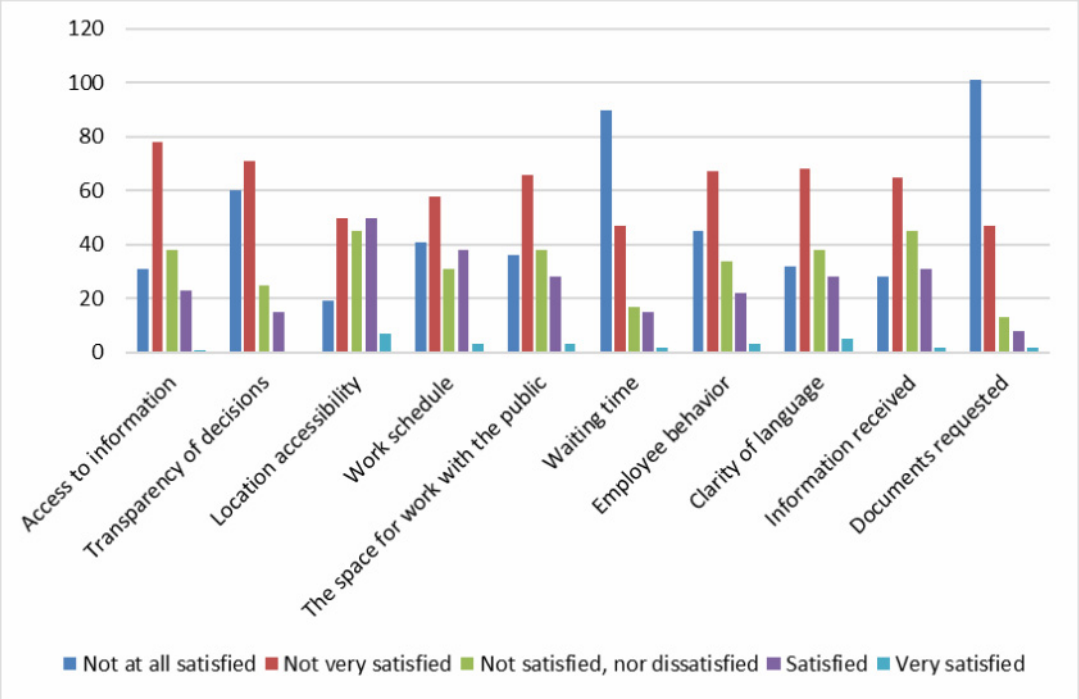

Fig. no. 2 Satisfaction level of the public services consumer
Source: authors' data processing study

Regarding the proposals that citizens have made to improve the relationship between the authorities and them, the recommendations focused in particular on digitization (the development of a platform of information of public interest, coherent and organized, digitization - 33 respondents, 7 respondents, accessibility to online information - 22 respondents, PNC access database - one respondent, Internet problem solving - 13 respondents, embedding online services in application processes - 10 respondents, e-administration - 7 respondents) as well as reducing bureaucracy (41 responses), increasing decision-making transparency (22 responses), better training/ education of employees (50 responses).

The most dissatisfied aspect of citizens is bureaucracy. This resulted from both the closed question in which we named this aspect and we requested either to be evaluated according to a scale of 1 to 5 and the previous but open-ended question that asked for three words describing how in which the public administration in Romania is currently functioning (51 people have indicated "bureaucracy" as a negative aspect present in our country today). This is also underlined by the information gathered in the open question (Question No 14), where 41 respondents mentioned the reduction of bureaucracy as a proposal to improve the relationship between the authorities and the citizens.
At the same time, the citizens expressed their dissatisfaction with the poorly computerized/ non-digitized system of the institutions as well as their limited online access to information on the documents/ forms that they need to fill, which is why, in the proposals for improvement, more responses targeted digitization.
In close relation to this issue, the waiting time for solving the problem, which was negatively pointed out by 80% of the respondents, appears. Also, correlating with the answers to question no. 6, there were 73 responses that indicated the exact same problem.
It should also be borne in mind that among the positive aspects stated by the respondents, very rare were similar opinions (not to mention two for the same positive word), whereas in the case of negative opinions some words were found in many answers (“Bureaucracy" 48 times, 32 people indicated the system as being heavy, "unprepared person" 7 times, "without interest" 11 times).
Regarding staff working in public administration, there were both negative and positive opinions. However, as already noted, the negative ones are disproportionately more numerous, so the professionalism of the employees was appreciated by two people, while 7 people have depreciated this aspect.
There were also opinions that could be classified as extreme: the quality of the services caused "hurting", it was considered an "infected", "rigorous", "dust and powder/ all-laugh" system, "Communist", where you have access to "intercession" and "spade" and compared to "thievery". This can be seen as a frustration of the citizens and also as an aspect requiring improvement. We also believe that this result could be interpreted to a certain extent and as a desire for people to get more involved in the process of providing the services they benefit from, and in developing strategies for linking public institutions.

Conclusions

In order for these services and benefits to be delivered in an efficient way, there is a need for good internal and external communication in an institution as it can be the main factor in promoting the image of an institution. Communication between institutions and citizens is done through various information, conferences, debates, meetings and can be done only over time.
It is also necessary for those working in the field of public relations to understand that they have a key role to play in gaining confidence and support for citizens' behavior, but also by constantly informing them about the activities carried out in the institution and the decisions taken at the higher level as far as it is concerned, so that the image is not affected.
Through the officials, the institutions can also find out what the needs and wishes of the citizens are and, depending on them, find solutions to satisfy them. By conducting market research, different behaviors can be adopted to improve the quality of services, but also to implement various strategies to attract beneficiaries to the market.
The issues that most dislike citizens are the bureaucracy, the weakly computerized/ non-digitized system of the institutions, their limited access to information and waiting time to solve the problem. Through the results we have been able to discover that they feel frustrated with the system and want to be more involved in the process of providing the

services they benefit, as well as in the realization of the relational strategies of the public institutions.

Citizens' proposals for improving the relationship between the authorities and them were reasonable taking into account the evolution of society. The recommendations were focused on digitization (development of platforms with public interest information, integrated databases, online services, reducing bureaucracy via the Internet), increasing decision-making transparency and better training/ education of employees. All of this largely confirms that we still need many changes in the public administration system.

In conclusion, we can say that the relationship between public institutions and citizens depends on the strategy of the institutions that have to look for methods of appropriation towards them to implement. A digitized system makes things move faster, easier and without too much time and is a fit to the standards of modern countries, but the technological system is one that is evolving rapidly. Also, greater involvement of citizens in various community welfare activities will greatly help to modernize the administration, and a satisfactory and effective relationship means the institution's ability to identify people's wishes and achieve them through modern and quality services, effective communication and optimal.

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THE VALIDITY OF THE COLLEGE MODEL OF EDUCATIONAL MANAGEMENT IN PRE-UNIVERSITARY EDUCATION IN ROMANIA

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Abstract
Adapting and permanently connection to the requirements of economic and social development are challenges to which the education system must respond coherently and efficiently to ensure the functionality necessary for each stage of transformation/ evolution. Being a complex system under external pressure, changing a component of the structure affects the functioning of all others, directly or indirectly, and maintaining balance is possible by addressing an educational management model that best fits the individual reality of each institution.
The paper presented is a study that established the validity of the collegial model of educational management in pre-university education based on the results obtained through a focus group research that involved people from South-Muntenia pre-university education with decision-making power.

Keywords
collegial managerial model, education, qualitative research, viability

JEL Classification
M12, I29

Introduction

The importance of education is recognized by all societies and in all fields that define their economic and cultural ensemble. This importance is reflected in the management of education, educational organizations, and educational management is among the main elements responsible for the evolution of this fundamental segment in the development of society (Grigorescu & Olteanu, 2014).
Educational management is the process of planning, organization, leadership, control and evaluation necessary to define and achieve the predetermined objectives of an educational institution through the coordinated use of human and material resources.
The multidimensionality of the concept has made it possible to differentiate strategies for its approach and to define it, highlighting two main directions - leadership management (educational leadership) and educational management. Differences between managerial and administrative management are determinant at the level of general functions (organization-planning, guidance-guidance, and regulation-self-regulation). Bolam (1999) defines the two types by comparison: educational management as executive function for the agreed policy and the management as the one responsible for policy formulation and, as the case may be,

organizational transformation (Bolam 1999, p.232-234). The Cuban Study (1988) offers one of the clearest distinctions between leadership and management. It associates leadership with change, while management is seen as a "maintenance-keeping" activity, but highlights the importance of both dimensions of organizational activity. In another study, Bush (1998, 2003) makes a connection between leadership and values or purpose, while management refers to implementation or technical aspects. However, effective performance, centered on educational performance objectives, implies an equal weight of leadership and management in educational institutions (especially pre-university education). On the other hand, Gunter (2001) shows that there are only slight interpretations of these terms, the syntax used for the same concept varies from the "educational administration" (still commonly used in North America and Australia) to "educational management" and, more recently, "educational leadership". Critically, Bush (2010) raises the question of whether these represent only semantic changes or whether it really generates a deeper shift in the conceptualization of leadership, and Hoyle & Wallace, in the study published in 2005, concludes that "leadership" exceeded recently the "management" as the main descriptor of what is involved in the management and improvement of institutions in the field of public services, including education.

Most of the authors studying this field believe that management in education institutions is directed towards achieving educational goals (Grigorescu & Olteanu, 2017). It emerged as a distinct field of study - the form of scientific management, in the first half of the last century in the United States, it expanded and developed rapidly after the 1960s and in Europe, especially in the United Kingdom where a series of institutions, such as the Bristol University National School Development Center for Education Management (1983), the School Management Working Group (1989), the Teacher Training Agency (TTA) (1989), were formed to impose the National Professional Qualification for Directors (NPQH) in 1997. The transformation of organizations from the industrial society to a knowledge society (the 1980s and 1990s of the 20th century) led to the diversification of management concepts and the emergence of some such as learning organization, intellectual capital, core competence, TQM Total Quality Management), knowledge management specific to educational management (Đorđević-Boljanović, 2009, p. 21).

The complex nature of educational management cannot be included in a single managerial model. Among the first modern authors to propose such models, Cuthbert (1984), Bolman & Deal (1997), Morgan (1997), who, according to the elements considered as main factors, identify and propose several types of managerial approaches. Cuthbert (1984) presents the following group of models: analytical-rational, pragmatic-rational, political, and phenomenological and interactionist. Bolman and Deal (1997) launch four models: structural, political, symbolic, and human; and Morgan (1997) associate metaphors with organizations as mechanical, organic, contemplative, cultural, political, considering management as a direct consequence of their type. Later, Bush (2010), based on the level of agreement on objectives, the concept of structure, the level of environmental influences and leadership strategies appropriate to educational organizations, and defines six managerial models, developed in close connection with leadership style. The author proposes six managerial models - formal, collegial, political, ambiguity, cultural.

All proposed models over time have among the design criteria the structure of the organization, the objectives and the reporting of the members of the organization to them, the organizational culture, the relation between the organization and the environment in which it operates, the institutional fund and the relations between the employees or the relations established between them their hierarchical positioning (Zamfir et all, 2018).

Collective model of educational management

The college model proposed by Bush in 2003 presents numerous features common to the Humanistic Model of Everard, Morris and Wilson from 2004. Both models have as their main elements the determination and formulation of policies through consensus, committees and informal groups. Also, decision taking is a process based on discussions, agreements, and power sharing between some or all members of the organization that are thought to have a common perception of organizational goals (Chitescu, 2015). Thus, it is proposed that all stakeholders in the organization to act rationally depending on how they perceive any given situation (Everard et al., 2004). It is a flexible model that emphasizes reciprocity and consensus and is considered to have the most appropriate means of managing educational institutions (Bush 2003, p.70). Brundrett (1998) states that collegiality can generally be established as the relationship that results when teachers collaborate with other teachers (Brundrett, 1998, 305) and Little (1990) explains that the reason for continuing college study and practice is that, probably, something is gained when teachers work together and something is lost when they do not do so (Little 1990, p. 166).

Collective models are linked to three leadership styles (Bush, 2010): leadership of transformation, participatory leadership, and distributed leadership.

The research's methodology

The research conducted had the focus group as an investigative technique, so to obtain the information. It is an easy method to apply and manage. Four meetings were held, attended by a number of 51 persons, who belonged to the category of directors, deputy directors, as well as that of the teaching staff members of the professorial and administrative council. They represented schools from three cities located in the South-Muntenia region, meaning Targoviste, Ploiesti and Pitesti. The sessions were held between October 20th and November 16th, 2018. By their function, individuals formed homogeneous groups, so the discussion could provide a series of viable responses to coherent interpretations of perceptions, motivations, and attitudes to the developed subject. Interviews were moderated by the authors and ranged between 45 and 75 minutes.

The limits of the research were imposed by the approaching way, meaning by using the focus group, where a small number of people were investigated, but they would be overcome by a later quantitative approach. The lack of involvement of teachers and pupils and parents' representatives in our study cannot lead to a degree of generalization of the answers received but was generated by the motivation of their very limited knowledge of the issue of the managerial mechanisms specific to the educational institutions. Another argument was the real non-involvement of parents and students in decision-making in schools in Romania.

Our study approached educational management by following the model chosen by the manager to effectively carry out the tasks assigned to it. Although the socio-economic and legislative conditions in our country draw common directions regarding the way of applying and developing the management, on all its levels, there are observed differences between the progresses made by the education institutions. The answer to these discrepancies can only be a managerial approach.

In this context, we quoted a series of hypotheses describing the present state of educational management in the pre-university education institutions from the perspective of the external viewer. The main objective was to confirm these hypotheses.

I1. The paradigm of effective educational management in Romania can be collegiality, as in European states like the Netherlands, England, Germany, and France.

I2. Middle management leaders can more easily approach and have better chances of success by addressing the collegial model of management.

I3. In the present socio-economic and political context in Romania the impediments to the implementation of the collegial model are due to a cumulus of factors (legislation, technology, human resource), less the skills and abilities of the manager.

Table no. 1 The research matrix

Dominant features of the collegial model	Questions
Limiting autocratic leadership	1. Do you agree that the managerial style should be chosen according to the situation, the leader's personality and the characteristics of the team members? 2. Are decisions made by consensus or imposed by the managerial mechanism in your institution? 3. Do you agree with the concrete objectives your colleagues propose, even if they do not personally represent you? 4. Through the given tasks, do you encourage the interaction between the members of the decision and professional groups you represent?
Representation of each functional domain	1. Do you consider the size of the appropriate decision-making group to represent all the functional areas in your institution? 2. Does the managerial model you assumed offer satisfaction and stability provide to all working groups? 3. Encouraging employee co-operation and supporting the representation of each field, the management's workloads diminish?
Communication	1. What do you think is the importance of communication with your other activities? 2. What is the type/ direction of communication predominantly used in your institution when setting goals? 3. The psychological and material comfort of all members of the institution gives them the motivation of communication that leads and facilitates finding solutions to future problems? 4. Continuing communication at various levels of the organization diminishes the oversight of the activities of your organization? 5. Without considering the hierarchy, do you attend the usual meetings and tell all spontaneously all your ideas about any problematic issue or not from the institution?
Encourages long-term planning, correct assessment and achievement of goals	1. Do you consider that the managerial approach within your institution determines managers to plan and act more closely than they would in the absence of informal groups? 2. In the case of changes are they being made progressively, with the involvement of each involved employee? 3. In the case of some performance and competence issues, do you do a detailed analysis of the results with each member of the team and then agree on goals and deadlines in a realistic and precise manner? 4. Do you consider that establishing a collective system of results monitoring, closely linked to the objectives set, is a proper assessment?

Source: Authors concept of focus group interviewing matrix

It was, also, requested a list of the five main aspects/ personal things (qualities, skills, competences) that define the internal and external organization (physical and human resources, organizational culture, legislation) that is needed for a collegiate approach to educational management.

Results and discussions

Information obtained from the discussions were analyzed in the context of validating the assumptions on which our research is based. Of the total number of participants, 58% were executives and deputy directors and 42% members of the Teaching and Management Councils. As gender distribution, 62% were women and 38% were men. The category of members of the Teaching and Management Boards was a strong point of the study, as the vast majority of them were also members of other functional boards at the level of schools (methodical, social - scholarships, school supplies, CEAC - quality assurance) had a complex view of the researched problem, being represented all levels of leadership and coordination.

The subjects of our research invoke a series of contextual factors, particularly external, which prove to be inhibitors of the transformation process. These include: permanent tensions between conventional and administrative education processes (there are no clear boundaries between the school head as a leader/ administrator/ teacher); permanent and unforeseen change of curriculum/ curricular areas, the structure of the school year and forms of assessment that require prompt response; the lack of a specific policy between educational institutions and the community, which thus excludes the involvement in the decision-making process of an important factor; the human resource less and less prepared for modern approaches to managing its own subject and classroom activities; the lack of material and psychological comfort that leads to superficiality and non-involvement. The skills and competences of decision-makers (directors, deputy directors) are not considered to be important in developing a collegiate approach to management than in times that require managing internal crises and as a determining factor in relation to the hierarchically superior level or to local public authorities (raising funds). Among these, the first places were the communication and negotiation ability. Thus, we can assert that the first hypothesis (I1) is partially confirmed but the third (I3) is fully validated.

Participants in the proposed study occupy specific middle management positions, which is why the questions that constituted the research matrix, through possible answers, could indicate the validity of the collegial model in their managerial approach. Through their responses they generated a matrix that could overlap or not with the defining characteristics of the analyzed model.

In principle, all respondents believe that the practiced way of driving is not self-directed. They emphasize, however, that managerial style is constantly changing depending on the situation, the leader's personality, the characteristics of the team members, and that there may be moments when self-rule is required. The managerial style of the institution makes teachers, students and community feel that they are directly responsible for the good schooling. Decisional consensus is a utopia. The variety of human typologies, of personalities, leads rather to a compromise necessary for the natural evolution of the institution. At the same time, the objectives assumed by the manager through the managerial project transpose his/ her vision, and possibly a decision-making group that does not represent the common values of all members of the school unit. It is also believed that encouraging group actions can minimize or annihilate the work of a director, even if his duties were.

The communication characteristic of the collegial model is generally horizontal and requires face-to-face discussion. Due to lack of centralization and careful monitoring, it leads to problems (increased response time, fragmentation, and incoherence). In the schools represented in our study, the communication is mainly done vertically, hierarchically, but there are situations where the transmission of information is done directly, spontaneously, in a collegial discussion. The link between the psychological and material comfort of employees and the motivation of communication to resolve problems quickly was not supported.

Collegiality is considered to be a process of assimilation involving the encouragement of expressing the personal vision of employees to become part of a common vision based on synergy (Singh&Manser2002, p. 57). Reflecting personal views on all stakeholders involved in the decision-making process involves planning and adopting a set of long-term goals that drive stability and efficiency at school level. Deviation of power from teachers and other components of the organizational school environment to become an integral part of the decision-making process is hampered by the resistance to change of all those involved. In this context, the peer approach to setting objectives, monitoring activities and evaluating results is often avoided.
This analysis confirms the second hypothesis (I2) in the particular context of our society and the capacity to implement the collegial management model of management in school units.

Conclusions

The Romanian education system is going through a period of structural changes dictated by legislation in constant adaptation accompanied by the diminishing of the public financing in relation to the increase of the requirements imposed by the level of responsibility that must be assumed. The position of principal, manager, becomes even more vulnerable as the exercise of repositioning the educational system in Romania involves more and more internal and external variables. The collegiate managerial model is specific to European countries, and is often called the European model. Although a series of measures common to education and structural processes have been adopted at European level, Romania, in the socio-economic and political context mentioned above, cannot apply the collegial model in educational management, only gradually but not coherently and unitarily the whole system as evidenced by the information provided by the subjects of our research.
Any auxiliary or administrative teaching staff has the authority of professional expertise, so it should be involved in the decision-making process. This involvement is argued by respondents by enumerating the numerous councils and committees existing within the school organization, and involving all members of the academic community in the decision-making process. Thus, the representation of each functional domain is supported, but representation does not imply involvement or decision-making on the specific hierarchical level because the size of the group is not always the right one. It has been emphasized, however, that decision-makers at all levels of hierarchy ensure that learning is at the heart of development plans.
The collegial model of management represents a challenge for the educational management system in Romania. It is now found at the stage where it coalesces with the formal model, generating a hybrid model whose results do not emphasize constant and targeted developments. Ignoring the limits of the Romanian educational process, its bureaucratic realities and inconsistent policies, this type of management, normative and idealistic, cannot become an alternative model to the rigid hierarchy imposed by the formal model.

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THE OVERVIEW OF THE DEVELOPMENT OF SERVICES IN KAZAKHSTAN

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Abstract

The service sector has become one of the driving forces of the economy. It is actually in the era of the post-industrial world. Especially important the problems of the development of the service sector for developing countries in which there is a redistribution of labor resources. Since it is believed that an efficient and dynamic service sector can bring the economy to a new level of development.

The subject of this study is the development of the service sector in Kazakhstan. As part of the study, the task is set: to evaluate the development of the service sector in Kazakhstan, by comparing it with its nearest neighbor, Russia. For comparison, data on the share of services in the structure of GDP, the share of employees and labor productivity in the services sector are used.

The comparative analysis shows the service industries increasing role for Kazakhstan. The investment flows in the services sector are falling but the service sector share in employment is growing. At the same time, in Kazakhstan, there is a lag in the grow productivity in services from the productivity of goods and in Russia there is a reverse trend.

Keywords

services, investments, labor productivity, GDP share

JEL Classification O14, N70, N75

Introduction

The service sector has become an increasingly interesting research topic over the last two decades. Information technologies have become the driving force behind the interest in service orientation (Bauer, 2017). But there are differences in the interests of developed and developing countries. For example, Paslauski believes that service companies are economically developed countries are less subject to technological change than in developing ones (Paslauski, 2017). Therefore, in the current conditions, the assessment of the development of the services sector becomes relevant. This article assesses the development of the service sector in Kazakhstan.

The relationship between the development of the service sector and economic growth has been proven by the example of Saudi Arabia and the USA (Alhowaish, 2014; Bosworth, Triplett, 2007). For the post-industrial economy, the services sector is not only an economic sector which created a large part of the value added. It is the sector which large part of the labour force is involved, more detail about it in D. Bell's work (Bell, 1973). Also, service industries can create multiplicative effects that determine the development of other sectors of the economy (Edelov, 2009). The development of the service sector and the factors affecting this process are the subjects of many studies. Some of them are given in this paper.

Efficiency is one of the most important factors in the development of services, and reforms should focus on strengthening competition to increase productivity, according to Hiziroglu et al. (Hiziroglu, et al., 2012). Maroto-Sánchez and Peters et al., in turn, believe that productivity in the services sector is influenced by the transition to a society actively using information and communication. Also, it depends on globalization processes, integration between goods and services, application of technology and innovation, human capital and its qualifications, investments, government regulation (Maroto-Sánchez, 2010; Peters, et al., 2018).

Another factor positively influencing the development of services is foreign direct investment considered by Williams and Mariotti, (Williams, et al., 2008; Mariotti, et al., 2013), Latorre shares the same opinion, believing that when economic barriers are lowered, foreign investments of transnational companies flows rise and lead to short-term and long-term results in the services sector (Latorre, et al., 2018).

Thus, a review of the literature points to two main directions in the study of the development of the services sector: through investment, through the assessment of employment and labour productivity.

Methodology

To explore the service sector of Kazakhstan, through investments and dynamics of productivity is carried out by a descriptive analysis of the structure of GDP, the structure of employment and the change in labour productivity, comparing the two countries, Kazakhstan and Russia. The choice of Russia as a country for comparison was not chosen by chance, the fact is that Russia for Kazakhstan is not only a geographical neighbour, but also a country with which Kazakhstan develops in a single economic area (EAEU). Therefore, many economic conditions can be similar and comparable.

The Service Overview

In order to study the dynamics of the development of the service sector, we consider the indicator of the share of services in Kazakhstan’s GDP, to compare the dynamics of development, we use data for Russia.

The service sector in Kazakhstan is steadily growing - from 54.3% in 2007 to 57.5% in 2017, its share is significant and reduces the impact of the industrial sector on the country's economy. However, in Russia, the service sector has shown more dynamic growth since 2007 (Fig. №1). So, in 2017, the service industries in Russia accounted for 56.2% of GDP. Compared to 2007, the share of the service sector in Russia's GDP grew by 5.6 percentage points, while the share of services in Kazakhstan's GDP grew by only 3.2

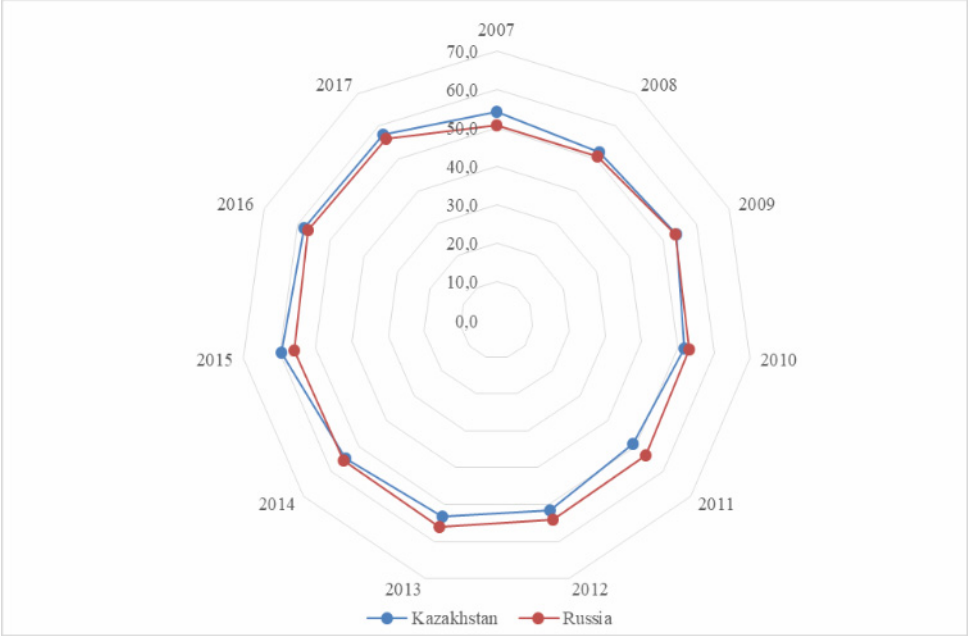

Fig no. 1 - Share of the service sector in GDP, in% for 2007–2017

Note: compiled by the authors based on data from the Committee on Statistics of the Republic of Kazakhstan and the Federal State Statistics Service of the Russian Federation for 2007-2017.

The increasing importance of the service sector in Kazakhstan can also be assessed by examining the state of the labour market (Table №1). Employment in the labour market in the service sector is characterized by growth in both Kazakhstan and Russia. Thus, the share of people employed in the service sector of Kazakhstan increased from 46.9% in 2001 to 61.5% of the total number of employees in 2017, and in Russia from 61.7% to 67.1%. It is noticeable that back in 2007, the share of people employed in services in Russia was signed. It is worth noting that the indicators of the share of people employed in the services sector of both Kazakhstan and Russia are above the global level. According to the World Bank, from 2007 to 2017, the share of people employed in the services sector in the world increased by 1.8 percentage points, from 49.3% in 2007 to 51.1%. 3.2 percentage points during the same period.

Table no. 1 The share of people employed in the service industries from 2007 to 2017, as a part of the workforce, in% of the workforce

	2007		2008		2009		2010		2011	
	РК	РФ	РК	РФ	РК	РФ	РК	РФ	РК	РФ
Wholesale and retail trade, accommodation and food services	14,2	17,6	14,8	17,3	15,0	17,3	15,4	17,5	15,5	18,0
Transport and storage, information and communication	6,8	9,3	7,1	9,2	7,0	9,3	7,2	9,3	7,7	9,4
Financial and insurance, operations with real estate	2,4	8,0	2,5	8,1	2,6	8,3	2,8	8,3	2,9	8,7

Professional, scientific and technical activities, activities in the field of administrative and support services	3,7		-	3,9	-	4,0	-	3,7	-	4,0	-	
Public administration and defense; compulsory social security	4,2		6,9	4,2	7,6	4,4	8,0	4,4	8,2	4,5	7,7	
Education	9,0		9,1	9,0	9,1	9,1	9,4	9,5	9,4	9,7	9,2	
Health and social services	4,0		7,3	4,1	7,4	4,1	7,9	4,3	7,9	4,5	7,9	
Other types of services	2,6		3,5	2,6	3,7	2,7	3,7	2,6	3,8	3,0	4,0	
All service sector	46,9		61,7	48,2	62,4	48,9	63,9	49,9	64,4	51,8	64,9	
Wholesale and retail trade, accommodation and food services	14,8	18,2	15,4	18,4	15,8	18,4	16,1	18,4	16,4	18,5	16,9	18,5
Transport and storage, information and communication	7,8	9,4	7,8	9,5	8,3	9,5	8,7	9,5	8,7	9,5	8,5	10,3
Financial and insurance, operations with real estate	2,8	8,7	2,7	9,0	3,1	9,3	3,3	9,4	3,3	9,2	3,7	4,0
Professional, scientific and technical activities, activities in the field of administrative and support services	4,0	-	3,9	-	4,0	-	5,1	-	5,5	-	5,7	5,4
Public administration and defense; compulsory social security	4,3	7,5	4,5	7,4	5,2	7,3	5,3	7,4	5,3	7,4	5,3	7,2
Education	9,9	9,2	10,2	9,2	11,0	9,2	11,4	9,2	11,5	9,4	11,7	9,5
Health and social services	4,6	8,0	4,7	7,9	5,2	7,9	5,1	7,9	5,2	8,0	5,3	7,9
Other types of services	3,9	3,9	3,9	4,1	4,7	4,3	4,6	4,3	4,2	4,3	4,4	4,3
All service sector	52,1	64,9	53,1	65,5	57,3	65,9	59,6	66,1	60,1	66,3	61,5	67,1

Note: Compiled by the authors based on data from the Committee on Statistics of the Republic of Kazakhstan and the Federal State Statistics Service of the Russian Federation for 2007-2017.

The structure of the employed in Russia and Kazakhstan in the services sector is similar: the largest share is occupied by those engaged in the trade and accommodation services sector, 18.5% and 16.9%, respectively, of total employment. In the last decade, the share of people employed in commerce and residence increased by 0.9 percentage points. from 17.6% to 18.5% in Russia; in Kazakhstan, the increase is more obvious from 14.2% to 16.9%, by 2.7 percentage points.

In the field of education, the share of employed increased in Kazakhstan by 2.7 percentage points, from 9% in 2007 to 11.7%. In Russia, the increase was 0.4 pp - from 9.1% to 9.5%. The share of people employed in health care in Kazakhstan for the period under review increased by 1.3 percentage points, from 4% in 2007 to 5.3% in 2017, which is lower than in Russia. Back in 2007, employment in health care in Russia was 7.3%, and in 2017 it increased to 7.9%.

Kazakhstan and Russia are similar in terms of the structure of employment in the sectors of trade and residence, education. At the same time as employment in the field of finance and insurance, Kazakhstan is growing, while in Russia it is declining. There are also differences in the structure of people employed in the field of health care: the indicators of Russia are much higher than in Kazakhstan.

The growth reason in the number of people employed in the service sector of Kazakhstan is most likely related to the release of labour from the spheres of industry, agriculture, and construction. Then they influx into the services sector, i.e. due to the technology and innovation in them that replaces human labour. Another reason may be the growth of jobs in the service sector, due to the increased production of services.

The analysis also shows that the share of people employed in the service sector in the labour force is large. Which reinforces the relevance of the development of service industries, in terms of solving problems of structural unemployment.

Employment in the labour market is closely related to labour productivity. According to Figure 2, labour productivity in the services of the Republic of Kazakhstan and Russia is significantly different (Fig. №2).

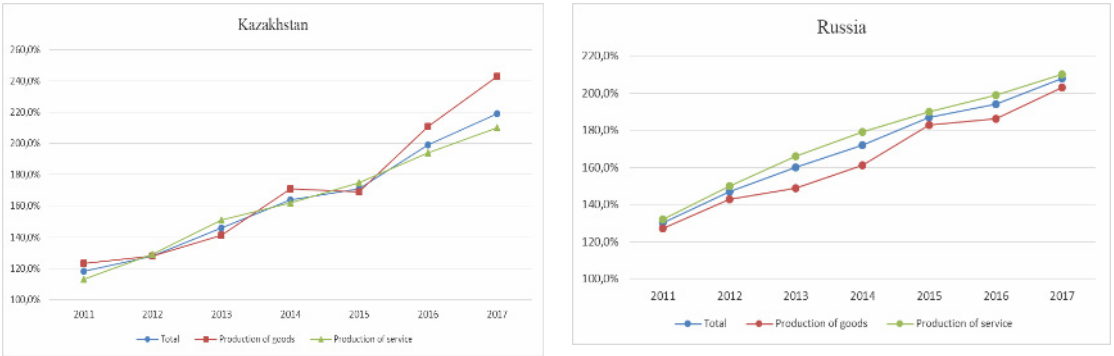

Fig. no. 2 The change in labor productivity by industry, as a percentage of 2010

Note - calculated by the authors based on data from the Statistics Committee of the Republic of Kazakhstan for 2010-2017, the Federal State Statistics Service of the Russian Federation for 2010-2017.

Labour productivity indicators in the services sector in recent years in Kazakhstan have significantly lagged behind the performance indicators of goods. In Russia, on the contrary, labour productivity in the services sector is growing more dynamically. Nevertheless, the

overall consistent growth in labour productivity along with the increase in the share of services in GDP and employment growth in the services sector emphasizes the relevance of the further development of this sector in Kazakhstan. At the same time, considering the qualitative component of development, attention should be paid to the indicator of foreign direct investment in the service industries of Kazakhstan.

Assessment of the development of the investment services sector

The gross inflow of foreign direct investment includes such indicators as the share of foreign voting shares, reinvested earnings and the flow of funds, in monetary and material forms. The volume of foreign direct investment has recently been declining, their peak was in 2011 in Russia, and 2012 in Kazakhstan (Fig. №3). In Russia, the investment attractiveness of the service sector is the same as at all economy (Pearson's correlation coefficient is 0.83). But in Kazakhstan investments in the service sector are declining (Pearson's correlation coefficient is 0.62), whereas in general, all sectors of the economy are growing.

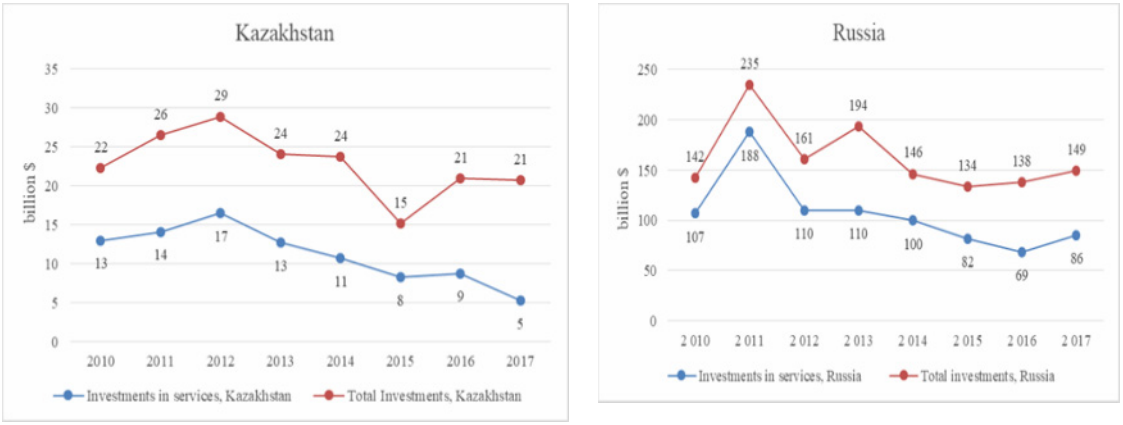

Fig. no. 3 Dynamics of investment in services and investments in all sectors of the economy by foreign investors

Note: compiled by the authors on the basis of data from the National Bank of the Republic of Kazakhstan for 2010-2017, the Central Bank of the Russian Federation for 2010-2017

In 2008 a special law was passed restricting the participation of foreign capital in strategically important economic sectors of the economy (AB Dudarev, 2017), the effect of this law is obvious - most of the foreign investment falls on the services sector.

Investments in all sectors of the economy in different countries. Thus, in Kazakhstan, in 2010, investment in services amounted to 58.3%, and in 2017 only 25.4% of all investments; in Russia in 2010 - 75.2%, in 2017 - only 57.4%.

This reduction in Kazakhstan promotes rates that, despite investment preferences and incentives, interest in implicit sectors of the economy is still low (Gakhov, 2016). In addition, according to RSM, there are high corruption risks for foreign investors in Kazakhstan (C.O'Neill, 2014), as well as low development indicators.

Conclusions

In Kazakhstan, the importance of the service sector is increasing, because, first, the service industries are flexible and the first to respond to technological changes in the economy. Secondly, service industries such as professional services and scientific and technical information development services themselves contribute to the development of technology and service economy.

The results of a comparative analysis of the share of people employed in the service sector

as part of the labour force show similarity in the structure of employed in trade, accommodation, education. While employment in the field of finance and insurance is growing in Kazakhstan and decreasing in Russia. There are also differences in the structure of people employed in the field of health care: the indicators of Russia are much higher than in Kazakhstan.

According to the results of the assessment of labor productivity in the service sector, there has been a general consistent growth for Russia and Kazakhstan. At the same time, there is a significant lag in labor productivity in the service sector compared with labor productivity in the industrial production sector in Kazakhstan.

An analysis of foreign direct investment as a factor of economic incentives shows that in Russia and Kazakhstan there are problems of a decline in foreign participation in recent years compared with the peak year of 2012 (in Russia in 2011). It is noteworthy that the share of foreign investment in the services sector of the total investment in all sectors of the economy is significant in Russia, while in Kazakhstan there is still interest in the industrial as primary industries.

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THE FORMATION OF THE CRYPTOCURRENCY MARKET IN THE REPUBLIC OF KAZAKHSTAN: OPPORTUNITIES AND THREATS FROM THE POINT OF VIEW OF ECONOMIC SECURITY

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Abstract

The study of cryptocurrency as an economic tool has been the focus of attention of states and the international community over the past ten years. Many economists and government officials are very skeptical about the use of cryptocurrency by business entities. Using the anonymity of transactions carried out via the Internet the criminal world, on the contrary, conduct illegal transactions, for example, engage in money laundering, finance terrorism and extremism, promote the development of marketing channels for drugs and psychotropic substances.

This kind of research is one of the first for the Republic of Kazakhstan. In this research, the authors tried to identify the potential opportunities and threats to the development of the cryptocurrency market in the context of combating money laundering and the financing of terrorism. Based on the analysis of international practices in the field of cryptocurrency market regulation, as well as the expert interviewing conducted by the authors, 2 main problems of cryptocurrency market development in Kazakhstan are identified. Firstly, the security problems of using cryptocurrency in the context of technical support, secondly, the lack of regulatory infrastructure for the development of the crypto currency market in the Republic of Kazakhstan.

Finally, the authors come to the conclusion that the Republic of Kazakhstan is currently not ready to develop the cryptocurrency market, since there are a number of organizational and legal issues. Nevertheless, the authors are convinced that Kazakhstan should be part of the global crypto market and should be actively involved in the development, implementation and regulation of the cryptocurrency market

Keywords: Cryptocurrency, cybercrime, money laundering, cybersecurity, National Bank
JEL Classification: G23, O17, Q38

Introduction

The implementation and use of cryptocurrencies which is sometimes called virtual currencies, in the Republic of Kazakhstan is at the revival stage. This relates to the lack of institutional framework, legal support, insufficient human resources, as well as technical and financial capabilities, which slow down the process of large-scale discussion and implementation of cryptocurrencies in the Republic of Kazakhstan.

However, the above circumstances can be an impetus for the development of the cryptocurrency market in the Republic of Kazakhstan (Kazakhstan). Firstly, the globalization of economic markets implies the creation of competitive advantages in all sectors of the economy, secondly, over the past quarter century, the world community, including Kazakhstan, is shaking one after another by the consequences of financial crises, which increase a mistrust of financial institutions, international and national currencies. As a result, society is forced to seek an alternative to real money. In this regard, the active development and discussion of cryptocurrency is becoming popular among business entities in many countries around the world.

In the meantime, the question arises: what tool will the cryptocurrency be used for? Will it be a means of payment or an asset? Jin Shin notes in his research (Jin Shin, 2017) that 54,2% of the working-age population invested in cryptocurrency in order to increase their well-being. In Germany, digital currency (Bitcoin) is positioned as an independent asset (Stiegler, Singer, Wiesener, 2018). According to Cvetkova (Cvetkova, 2018), a cryptocurrency may become part of a market economy in the future. Meanwhile, the Bank for International Settlements published the Report of the Committee on Payments and Market Infrastructure (2015), which states that "digital currency" is used by individuals as payment for committing illegal actions. This, in turn, causes concern from law enforcement agencies and financial intelligence units, since the requirements of laws on anti-money laundering and combating the financing of terrorism are not met.

Literature review

For the first time in history, digital currencies appeared in the late 1980s. The idea was to optimize the mode of operation of gas stations and truckers at night. Thus, in the Netherlands, the idea of introducing digital currencies in the service sector, gas stations and its customers. According to scientists, the use of cryptocurrency as a means of payment solved in parallel the problems of theft, robbery and murder at night (Biscontini, 2017, Lansky, 2018).

Innovations in any field of activity are associated with certain risks, the risks of implementation, use, acceptance / non-acceptance by society, and the emergence of cryptocurrencies as a separate object of study is not an exception. For example, Nicholas Weaver (Weaver, 2018, p. 20) highlighted four main risks associated with cryptocurrencies in the following areas: technical, economic, social, and also systemic risks for a cryptocurrency ecosystem. At the same time, he notes that "If the cryptocurrency succeeds, we can expect a significant increase in criminal throughput" (Weaver N., 2018, p. 24).

According to research (Genkin D., Papapdopoulos D. & Papamanthou C. 2018, p. 88), increasing user privacy can cause problems such as user involvement in the illegal activities of various cryptographic ransomware. These actions, in turn, may lead to a tightening of state regulation of cryptocurrency transactions.

On the one hand, the emergence of cryptocurrency, as a result of scientific and technological progress, implies a reduction in transaction costs of economic entities, an increase in cashless payments, and finally, comfort and customer-oriented population. On the other hand, the use of cryptocurrency or virtual currency in the financial system entails certain risks of fraud, cybercrime, money laundering and the financing of terrorism.

The founding institution prescribing international standards in the field of Anti-Money Laundering and Combating the Financing of Terrorism - FATF, is concerned with the problems of crimes and cybercrime caused by the use of virtual currencies. The FATF believes that it is necessary to regulate the cryptocurrency market, in terms of compliance with the law in the field of Anti-Money Laundering and Combating the Financing of

Terrorism. In this regards, the FATF published two reports on virtual currencies of 2014* and 2015†. The 2014 FATF report points out possible risks in the field of Anti-Money Laundering and Combating the Financing of Terrorism (AML / CFT). Bitcoin addresses, which are a kind of accounts, do not contain the names and surnames of clients. When conducting the transactions in decentralized systems, there is no need to carry out customer due diligence measures. The greatest vulnerability is the possibility of participants in decentralized systems to carry out transactions with countries included in the FATF blacklist.

Batoyev and Semenchuk note the frequent cases of using the cryptocurrency market in fraudulent schemes (Batoyev, Semenchuk, 2017). According to the authors, the strength of the cryptocurrency for the underworld is the speed and anonymity of the transactions. This is also a weak point and a threat to law enforcement agencies conducting investigations of money laundering and terrorist financing crimes.

Thus, the sphere of influence and the scale of use of transactions with virtual currencies / cryptocurrencies are irreversible. Governments, central banks of the states and FATF are unanimous about the need to cover the sphere of cryptocurrency, due to the growing threat of money laundering and terrorist financing. In its Report to the G20 finance ministers and central bank governors (2018), the FATF confirmed its readiness and commitment to AML / CFT policy and the extension of this regime to the areas of activity related to virtual currencies. A decision was made on the need to make changes to the FATF standards and to regulate the sphere of virtual currencies by the states of the world.

Regulation of cryptocurrencies in different states

While the FATF and G20 platforms are making statements about the need to regulate the scope of cryptocurrencies and the possibility of extending the AML / CFT regime, some states have already begun to take action. As shown in Table No. 1 "Overview of the states taking measures to extend the AML / CFT regime to virtual currency transactions", the amendments to the Basic Laws on combating money laundering have been adopted at the legislative level in Canada, Hong Kong and Switzerland. Central banks of China, France, Italy, Russia, and the Republic of South Africa issued recommendation letters for financial organizations on the need to comply with the requirements of the AML / CFT Law and to send suspicious transactions reports to the financial intelligence unit. In Singapore, it is expected to make changes to the legislation, which provides for the intermediaries on the sale and exchange of virtual currencies for fiat to be obliged to carry out customer due diligence measures.

Table No. 1 "Overview of the states taking measures to extend the AML / CFT regime to virtual currency transactions"

State	Regulatory measures
Canada	2014. Amendments to the Anti-Money Laundering and Combating the Financing of Terrorism (AML / CFT) legislation.
Hong Kong	Amendments to the AML / CFT legislation
Singapore	Draft amendments to the AML / CFT legislation
Switzerland	2014. Political statement that the requirements of the Anti-Money Laundering and Combating the Financing of Terrorism Act are extended to individuals engaged in commerce and virtual currency was adopted.
Great Britain	Since 2014, comprehensive work is underway to identify the zones of threats and vulnerabilities in the state.

* FATF report Virtual Currencies Key Definitions and Potential AML/CFT Risks

† Guidance for risk-based approach virtual currencies

USA	2011. Amendmends were made to the Law on Banking Activities and the concept of "money transfer services" was expanded
China	2013. At the level of recommendation letters for financial institutions
France	2014. At the level of explanatory activities, two reports were issued.
Italy	2015. At the level of recommendation letters for financial institutions
Russia	2014. At the level of recommendation letters for financial institutions
South Africa	At the level of recommendation letters for financial institutions

Note. Compiled by the authors based on the FATF Guidelines for the Application of Risk-Based Approach.

The concept of cryptocurrency

What is a cryptocurrency market?

The cryptocurrency market is a virtual platform where the purchase, sale and exchange of cryptocurrency or virtual currency is carried out. In their studies conducted for the period from 2013 to 2017 (ElBahrawy, Alessandretti, Kandler, Pastor-Satorras, Baronchelli, 2017) note that the cryptocurrency market was formed gradually. Firstly, there was a Bitcoin, then other types of currencies began to appear, some of which are bitcoin clones themselves. In 2017, there were more than 1,500 types of currency types in the cryptocurrency market, but more than 1/3 of these currencies are actively in demand and supply. Scientists note that the total number of users reached 6 million users with a total market capitalization for May 2017 of about 91 billion US dollars.

On measures taken by Kazakhstan to regulate cryptocurrency

The issues of possible regulation of the cryptocurrency market in Kazakhstan have been discussed for the past 5 years. Thus, the National Bank of Kazakhstan believes that a detailed research of international experience is necessary and there is no need to be hurry with the development of the draft law. At the same time, the National Bank conducts an active preventive policy and issued two recommendation letters for financial organizations. The first is that the National Bank warns the population about the risks in cooperation with companies that use cryptocurrency as an investment (2017). According to the second letter the financial regulator prohibits financial institutions of the state to carry out illegal transactions, which include cryptocurrency transactions (2018).

According to experts' assessments, the Kazakhstani cryptocurrency market is approximately $ 20-25 million (Butin, 2017), which is 0.015% of Kazakhstan's GDP. According to official data of the National Bank of Kazakhstan, the money supply (M3) in 2017 is 19,456.0 billion tenge, the share of cash (M0) in the total share of money supply is 10%. The estimated share of cryptocurrency in the total volume of M3 and M0 will be 0.04% and 0.42%, respectively. The market share of cryptocurrency in Kazakhstan is not significant, it is occupying only 0.04% of the total share of M3, thereby not representing a real threat to the financial sector and economy. Nevertheless, a number of questions arise that require reflection and scientific research. What are the threats and opportunities in Kazakhstan for the development of the cryptocurrency market? How can the legal field be constructed to regulate cryptocurrency? Answers to these and other questions are relevant not only for Kazakhstan, but also for many states of the world.

In Kazakhstan, there is no concept of "cryptocurrency" or "virtual currency" at the legislative level. To make a decision on the introduction of regulation of cryptocurrency by the state, it is necessary to determine its purpose. Will it be an independent asset like in Germany, or a currency like in Sweden or USA? There is no state authority responsible for regulating and controlling cryptocurrency transactions in the country.

Despite this, private electronic currency is being created in Kazakhstan, which will operate on the territory of the Astana International Financial Center (Financial Center). In

accordance with the Rules for the operation of financial services on the territory of the Financial Center there will be an exchange where the purchase, sale and exchange of private electronic currencies for fiat money or another private electronic currency will take place.
In order to comply with FATF international standards and prevent illegal transactions with virtual currencies, the Financial Center and state agencies are developing a draft Law "On Amendments and Additions to Certain Legislative Acts of the Republic of Kazakhstan on Digital Regulation" (hereinafter - the Draft Law). According to the Draft Law, it is proposed to define the term "private electronic currency" or (private electronic money). At the same time, private electronic currency will be used exclusively between individuals and organizations registered as members of the Financial Center.
In addition, there is a joint order between the Financial Center and the Ministry of Finance, which states that all participants of the Financial Center must comply with national AML / CFT legislation, and the financial intelligence unit must conduct awareness-raising activities among the participants of the Financial Center. However, the participants of the Center de facto are not subjects of financial monitoring to which the requirements of the AML / CFT legislation would apply.
In Kazakhstan, attempts are being made to regulate the sphere of cryptocurrency, but this process is fragmented and applicable to a separate category of subjects within the same location.

Vulnerabilities of the Kazakhstan market from the point of view of cybersecurity

Kazakhstan is one of the most vulnerable countries in the field of cybersecurity in cyberspace. The basis for such conclusions is the national cyber security index of 2018 (National Cyber Security Index 2018), where Kazakhstan took the 84th position out of 100. Thus, Kazakhstan is ahead only of Tajikistan and Turkmenistan, and is inferior to Estonia, Lithuania, Latvia, Georgia, Russia, Ukraine, Belarus, Moldova, and Uzbekistan (Rikk, 2018). This indicator shows that Kazakhstan needs to take appropriate measures to increase the level of cyber security in the state.
In addition, approximately 90% of offenses in Kazakhstan occur under part two of Article 190 of the Criminal Code, "fraud committed by deception or abuse of the trust of an information system user", as well as article 188 of the Criminal Code of the Republic of Kazakhstan, "theft committed by unlawful access to information system or changes in information transmitted over telecommunications networks" (2018).
In October 2018, the Resolution of the Board of the National Bank of Kazastan approved the Cybersecurity Strategy of the Financial Sector of the Republic of Kazakhstan for 2018-2022 (2018). This document was developed in order to effectively ensure cybersecurity in the financial sector of the Republic of Kazakhstan, and it was focuses on the cybersecurity of information exchange between participants in the financial sector.
Thus, taking into account the current situation in Kazakhstan's cyberspace in the field of security, it is hard to imagine the development of a crypto currency in the near future.

Research Methodology

The purpose of this research is to: determine the degree of regulation of cryptocurrency in various jurisdictions in order to comply with the FATF International Standards and identify regulatory problems in Kazakhstan.
In conducting this research, the authors carried out a literature review indicating that the development of cryptocurrency in the state should be viewed from two perspectives: cryptocurrency is a financial asset that increases future wealth, and cryptocurrency is a threat to the state's economy caused by its use for criminal purposes.
The second research method was expert interviewing. The interview was attended by experts in the field of economics and finance, representatives of state and special bodies, as

well as independent experts in the field of combating money laundering and terrorist financing. The total number of respondents was 10 people. Expert interviews and questionnaires were conducted for 2 months from February to March 2019 directly with each respondent. During the interview, it was revealed that none of the 10 respondents did not use cryptocurrency in the course of their activities, explaining that the transactions with cryptocurrency are illegal in the territory of the Republic of Kazakhstan.

Results and discussions

Below are summarized interview results:

So, R. 1 notes that "...we cannot ignore many changes - this is market demand. However, it should be noted that for Kazakhstan, first of all, it is necessary to raise the level of cyber security. In order to promote cryptocurrency, Kazakhstan must have a prepared regulatory and technical, managerial and organizational base and only after that think about the introduction and development of cryptocurrency in the country".

Representatives of special and law enforcement bodies adhere to the absolutely opposite opinion.

R. 2 "The cryptocurrency market is actively developing in Kazakhstan, especially in Almaty and Astana, which is primarily due to the fact that Almaty is historically considered as the financial center of Kazakhstan and Astana, since it is the capital of our country, where active and young people are willing to develop and adopt the latest innovations in any field of activity. However, despite a certain prevalence of the cryptocurrency market, there is no crypto-exchange in Kazakhstan. Existing crypto exchangers provide their services via such messengers and applications as Telegramm, olx.kz".

R. 3 believes that "...the development of the cryptocurrency market should be accompanied by state regulation. From an economic point of view, it is advisable for the state to see the dynamics of development of this market, especially in terms of its influence on the total money supply. Moreover, speaking of the cryptocurrency market development in Kazakhstan, it is necessary first of all to provide the necessary number of professional personnel able to understand, promote and, if necessary, take into account possible risks and threats entailing transactions with cryptocurrency".

R. 4 and 5 are convinced that "...the cryptocurrency market is unequivocally necessary to be developed in Kazakhstan. But for this you should create the following. Firstly, to create the Blockchain Institute with good powers, good funding, with the assistance of the best international experts to develop strategic approaches for the actions of state bodies, the development of regulatory documents and vectors of technological development. Today there is no platform in Kazakhstan that could unite experts, scientists involved in the research of blockchain and cryptocurrency issues".

R. 6 believes that "...there are big risks of involving the young population aged 20 to 25 in the cryptoindustry and using them to commit fraudulent transactions, taking advantage of their illiteracy in the field of cryptocurrency".

Meanwhile, R. 7 and 8, are convinced that "The cryptocurrency market must develop in Kazakhstan and there must be appropriate regulation by the states. At the same time, control and supervision in the field of cryptocurrency should not be carried out by one state agency. An integrated approach is needed, i.e. one state body is responsible for accounting and control of participants in the cryptographic market, the second state body provides the technical infrastructure, the third state body provides human resources ...".

Summarizing the results of interviewing, we believe that today Kazakhstan is not ready for an adequate formation of a cryptocurrency market in the country.

Conclusions and recommendations

The processes that occur in the world are already irreversible because of the achievements of high technology. The real reasoning about the need or absence of the need to regulate the cryptocurrency market in terms of ensuring compliance with FATF standards is a temporary process.

State regulation of cryptocurrency is a political decision, while the technical, financial and organizational part is the components. We believe that a low cybersecurity index in Kazakhstan's cyberspace suggests a high probability of hacker attacks, as well as cyber-attacks related to money laundering and terrorist financing.

The recommendations of this research will be:

1. Definition of the concept of "cryptocurrency" or "virtual currency" at the legislative level with the research of the issue of its security.
2. The National Bank, in conjunction with other state bodies, should determine the area of responsibility of each state body. International experience and the results of expert interviewing shows that the integrated approach in the field of regulation and supervision of transactions with cryptocurrency is required.
3. State bodies should conduct active explanatory work among the population using the opportunities of social networks about the possible risks of performing fraudulent transactions using cryptocurrency.
4. At the same time it is necessary to attract foreign experts in the field of cybersecurity to train highly qualified specialists of Kazakhstan.

The authors do not exclude that this research may be a prerequisite for further research, study and analysis of the cryptocurrency market in Kazakhstan.

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ROMANIAN SMES UNDER LENS: MULTIFACETED INSTRUMENTS FOR DEVELOPING THE INTELLECTUAL AND FINANCIAL CAPITAL

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Abstract

The paper aims to approach the legal, governmental and institutional instruments - with a special emphasis on the national undertakings congruent with the European policies and programmes - which are oriented towards the multifaceted development of Romanian small and medium-sized enterprises (SMEs). The focus is set on the extant catalyzers (i.e., specific national laws, governmental programmes, institutional initiatives, etc.) meant to provide SMEs with consistent support for the enhancement of different types of capital, ranging from the intellectual capital dimensions (human, structural and relational) to varied forms and sources of financial capital. The main underlying premise for the advancement of this theoretical approach resides in the fact that a bigger picture would assist SMEs entrepreneurs and managers in exploring and deciding on the most suitable solutions for the lack of multifold resources.

Keywords

Small and medium-sized enterprises (SMEs); intellectual and financial capital; legal and governmental instruments; Romania.

JEL Classification

M13; L26; L53

Introduction

In the European Union (EU), a fragmented legal framework for small and medium-sized enterprises (SMEs) may pose limits to the market standardization in terms of disclosure practices and of disparities between the legal ground and supervisory practices (Kraemer-Eis & Lang, 2017). In this vein, consistent with Daude and Fratzscher (2008), the rules for disclosure of information and the costs of legal proceedings influence the attractiveness of a country in terms of financing, the favorable administrative and legal ground bringing growth to the SMEs involved.

The European Commission's plans to improve the framework for European SMEs will create a better background and the effectiveness of the legal policies has to be examined

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taking into account the heterogeneity of the European population (Demary, Hornik & Watfe, 2016). The discussion is even more intense when it comes to the emerging markets as far as legal challenges and structural risks are concerned, given the exposure of SMEs to supply chain vulnerabilities and the imperative to properly manage the dynamics of contextual factors (Vătămănescu et al., 2017; Vătămănescu, Gorgos & Alexandru, 2018). External forces such as climate changes (Matopoulos et al., 2007), price fluctuation (Matopoulos et al., 2007; Trkman & McCormack, 2009), lack of education concerning management, the fast-changing market regulations, contractual clauses, and enforcement (van Veen, 2005) are difficult to manage because they determine substantial disturbances. It is in this particular point that describing the context in which SMEs operate and evolve comes forward as a priority in that the exploration of various legal frames of reference, the actual approaches of stakeholders, the monitoring of processes and the objectivization of the management style are relevant for establishing SMEs' goals and adequate actions in an opportunity/challenge setting (Clusel et al., 2011; Hapenciuc et al., 2015).
A good harmonization between the external factors and the managerial practices has a direct impact on the business activities and stands for a compelling determinant of the collective and individual ability to adapt in order to cope with all kinds of events (Clusel et al., 2013). In this sense, the sector of international labour, marked by increased mobility of the employees, enters in the area of positive consequences driven from rapid access to new markets (Navas-Aleman & Guerrero, 2016). As different authors reveal, employment opportunities governed by decent time of work, adequate earnings, security of work and social security are definitive for the established relations between SMEs and their employees (Giannacourou et al., 2015; Navas-Aleman & Guerrero, 2016) and pose additional pressures on managers.
Berkhout et al. (2004) developed a four stages framework for surpassing business challenges from a managerial point of view: risk and opportunity analysis, strategy setting, implementation and integration. In essence, managers can improve the adaptive capacity of businesses when rethinking contractual strategies, contract costs and the time allocated to their projects (Wedawatta et al., 2011; Vătămănescu et al., 2016). The management team may enhance performance and reduce the negative impact of external factors when it makes accurate and timely decisions based on well-grounded assessments of the external variables (Aleksic et al., 2013). Here, a good knowledge on the extant legal and governmental instruments at their disposal stands for a catalyzer for their future courses of action and for adopting feasible solutions.
Starting from these premises, the scope and content of this study stem from the imperative to examine the state-of-the-art of the available tools for the Romanian SMEs in their quest for achieving competitiveness at different levels. Assuming the fact that Romania is a member state of the European Union, with its inherent challenges and opportunities, the paper revolves around the national instruments meant to support the development of distinctive types of intellectual capital (human, structural and relational) and the access to various forms of financial capital.

Conceptual framework

Regularly, policy makers have the capacity to develop and sustain programs for the development of innovative SMEs, depending on the country, the type of enterprise and its approach (Apanasovich, Heras & Parrilli, 2016, p. 38). The European Union's policy for SMEs reifies itself via various funding options, but SMEs often lack the proper human capital (i.e., entrepreneurs, managers, employees) to fully assess and benefit from these opportunities and dedicated programmes. In this front, one of the identified barriers mainly consists of the precarious managerial knowledge and practice (Rademaekers et al., 2011). The European Union's transposed plan might have distinctive impacts on SMEs, taking into

consideration the particularities of different enterprises in terms of policies, products and services, industry, business model (Demary et al., 2016), all these being indicative of the inherent structural capital.

Further, Eastern countries are grounded in a deficit of financial capital, lack of innovative management experience, but at the same time they are distinguished by practice in manufacturing activities and high human capital (Apanasovich et al., 2016). Innovation is a requirement for adapting to the new environment, though it has been reported that SMEs prefer to prioritize already used technologies, depending on the suppliers' suggestions (Rizos et al., 2015). Similarly, technical skills and knowledge are impetuous for a well-done implementation. However, an excessive dependence on external opportunities without a proper internal adjustment (Hoevenagel et al., 2007; Rademaekers et al., 2011) emerges as a weak premise for the business growth. For example, the statistics show that, in the group of post-communist countries such as Romania, Poland, Hungary, Bulgaria, Slovakia or Czech Republic, more than 45% of the SMEs are financed internally and these states have the lowest share of flexible-debt (9,8%) compared to other regions (Demary, Hornik & Watfe, 2016).

As proven by experience and underscored in empirical studies, most actions of the SMEs managers are more reactive to events rather than proactive (Wedawatta et al., 2011). The evaluation of uncertainty regards the examination of different units, such as the market, government, suppliers, and competitors (Giannacourou et al., 2015), thus supporting the paramount importance of the relational capital. Facing dramatic difficulties particularly led managers to seeking new opportunities for innovation and competitiveness (Freel, 2005; Trivellas, 2012), therefore unfolding a shift from the adaptative behaviour to a proactive one.

A proactive behavior is liable to emerge as a consequence of a thorough knowledge on the extant opportunities in support of SMEs development, both at a national and European level. This is why casting an eye on the challenges encountered by SMEs (in terms of various types of capital) and on the extant instruments meant to support them may arise as a first step towards fruitful actions. In this regard, a synopsis of the main challenges met by SMEs and of the available multifaceted instruments is illustrated in Table no. 1.

Table no. 1 A synopsis of challenges and instruments apposite for Romanian SMEs

Challenges	Legal, governmental and institutional instruments at the national level (selection)
- Lack of resources (mostly financial and human resources) - Lack of demands / customers (relational capital issues) - Managerial limitations (incompetence, lack of knowledge, enthusiasm or vision) - Political / mental / cultural barriers - Fierce competition on certain markets - Short-term goals and approaches (lack of business	- Law no. 62/2014 (partnerships & professional guidance) - Governmental Decision no. 859/2014 (sustaining entrepreneurs & internationalization) - Governmental Decision no. 775/2015 (national strategy for competitiveness 2015-2020) - Law no. 97/2014 (sustaining debutant entrepreneurs) - Law no. 20/2015 for stimulating individual - investments – Business Angel (building up relations: new entrepreneur-experienced entrepreneur) - "Growing the capacity of the National Council of the SMEs in Romania to formulate and sustain alternative public policies regarding the activity of the SMEs" (development of operational and administrative capacity of the National Council for

and organizational sustainability) - Scepticism regarding opportunities - Difficulties in contract negotiations - Excessive bureaucracy	the creation and support of public policies for SMEs) - "SME Academy" (the promotion of qualitative work force - special training for 600 entrepreneurs, managers and human resources' employees) - The SME Initiative Programme for Romania (part of an initiative of the EC and the EIB Group - five Romanian banks provide financing for the SMEs)

An insight into the multifaceted instruments for SMEs

The reality is that, in Romania, the legal framework is in a continuous changing process and the SMEs often have difficulties in confronting bureaucracy and reaching the targeted achievements.

While examining the Romanian legislation which encourages SMEs in their endeavors to develop various types of capital (from the intellectual capital to the financial one), the Law no. 62/2014 comes forward as the most innovative law at a European level, the main provisions referring to: 1. testing SMEs in the sense of adjustment of normative projects at their benefit and evaluating the introduction of new rules; 2. constant number principle – the introduction of new administrative obligations for the companies simultaneously with eliminating already marked tasks; 3. special measures for public acquisition for the SMEs which outsource lots of the existent contracts, with legal reduction for participation guarantee and performing guarantee; 4. vouch for 0.4% from the Gross domestic product (GDP) for the SMEs sector. Moreover, Law no. 62/2014 has sustained partnerships between the business environment and the educational system in order to correlate the programs for professional guidance with the needs of the enterprises and to develop entrepreneurial strategies at all levels, with the consultation of confederations.

The governmental strategy for the development of the SMEs sector in Romania - Horizon 2020 had been approved through the Governmental Decision no. 859/2014, with the following main directions: 1. sustaining entrepreneurs and the access of the SMEs to financing; 2. sustaining innovation and access to new markets and to internationalization; 3. public administration implication for fulfilling and aiding SMEs needs. The strategy established rules for seven years ahead regarding the extensive growth of the SMEs sector locally and on targeted markets and the augmentation of the SMEs density in specific areas where regional disparities should be resolved. As the Governmental Decision reveals, at a macroeconomic level, Romanian SMEs face four problems: the number of active SMEs is too small - medium-sized enterprises are less, the firm structure – too many firms activate in the services and commerce areas, and the resilience of businesses – 2/3 of the number of new firms do not succeed to enter in the second year of activity. The mentioned needs of Romanian SMEs are: liquidities, technology, the relation capitalization-evolution, information flows, less barriers on the market, and the internationalization of the business.

Further, the National Strategy for Competitiveness 2015-2020, adopted through the Governmental Decision no. 775/2015, had as aim to reinforce the Romanian key sectors with a competitive potential: tourism, textile, wood, creation industry, automotive industry, information technology and communication, food and drink processing, health and pharmaceutics, energy and environment, bio-economy, bio-pharmaceutics, and bio-technology. Its objectives concerned taxation reducing, partnerships between private and public sectors, support services and the preparation of the "2050 Generation" with societal implications. As the Governmental Decision states, for competitiveness, the life standard has to be higher and the present generation has the obligation to ensure superior conditions for the foundation of educational programs at an international standard, with the

implementation of a flexible and innovative system of education, prepared for embracing modern civilization and for developing professional abilities.

The Law for debutant entrepreneur no. 97/2014, modifying the Governmental Ordinance no. 6/2011, offers a chance for inexperienced entrepreneurs in the sense of starting a business without any taxes. The main provisions are: a finance of 10.000 euro without the repayment obligation; support and guidance; no payment obligation for social insurance contributions for maximum four employees who detain an undetermined contract; no taxes for the registration at the special office (National Trade Register Office in Romania).

Another important law (no. 20/2015) for stimulating individual investments – Business Angel – is effective from the 17th of July 2015, being recognized as an instrument for business funding as in other countries such as Italy or Finland. This law establishes the modality of procuring funding for new businesses by the investors, through the cession of social parts from the owner of the business, but it establishes the limit of 49% from the social capital of the enterprise. The investment is between 3.000 euro and 200.000 euro and it is registered in the enterprise accountancy. The benefits of this document and action are remissions: first, gained assessment from the transmission of social parts if it takes place after at least 3 years from the acquirement and secondly, the taxation for income as dividends, for a period of 3 years, beginning from the acquirement of the social parts, for the dividends correspondent to those social parts. The law also specifies that the enterprise which involves the individual business angel shall not be in an insolvency state, in bankruptcy or in other liquidation procedures.

With the purpose to protect European SMEs, the Directive 2011/7/EU has been released against late payment and for improving businesses competitiveness and it should have been integrated by the member states into national law until the 16th of March 2013 (European Commission, 2018). In Romania, the provisions were integrated in the Civil Code, Procedural Civil Code and Governmental Ordinance published in the Official Monitor of Romania no. 607/29.08.2011, Governmental Decisions published in the Official Monitor of Romania no. 166/28.03.2013, 172/29.03.2013, 174/29.03.2013, and no. 175/29.03.2013, Law on measures to combat the delay in execution of payment obligations of money amounts resulting from contracts between professionals and contracting authorities published in the Official Monitor of Romania no. 182/02.04.2013 (EUR-Lex, 2018). The Directive 2011/7/EU established stricter measures than its precedent, harmonizing for the first-time payment periods made by public authorities to businesses.

Revolving around the national level, the National Council of the SMEs in Romania implements in 2018-2019 the project "Growing the capacity of the National Council of the SMEs in Romania to formulate and sustain alternative public policies regarding the activity of the SMEs", with a total financing of 926.630,72 Lei (around 199.704 Euro), and a EU co-finance of 762.655,86 Lei (around 164.365 Euro) (CNIPMMR, 2018a). As the official website informs, the general objective of the project is the development of operational and administrative capacity of the National Council of the SMEs in Romania for the creation and support of public policies in its area of expertise, representing the SMEs and the entrepreneurs at national and international levels for achieving performance in this sector. The aimed results of this project are the public policy for studying the impact of legal initiatives upon SMEs sector and the formation of experts from the National Council for underlying and conducting public policies proposals. Nonetheless, the program will strengthen the development of non-governmental organizations' capacity and social partners' ability to promote policies proposals, initiated by the Romanian Government (CNIPMMR, 2018a).

At the same time, the National Council of the SMEs in Romania has introduced - for the period May 2018 - May 2019 - the project called "SME Academy", with a non-refundable finance of 3.263.629,30 Lei (around 703.368 Euro) (CNIPMMR, 2018b). The project's

main purpose is the promotion of qualitative and sustainable work force in the North-East, Centre and South-East regions by preparing special training for 600 entrepreneurs, managers and human resources' employees for adapting their activity to the dynamics of competitive areas (CNIPMMR, 2018b). The official website of the National Council of the SMEs presents the expected results concerning the development of entrepreneurial skills, strategic planning, financial education and the management of human resources, the formation of 300 persons who will benefit from business coaching, 300 SMEs supported for strategic planning on a long-term, meetings with business representatives, public authorities, representatives from the Offices of work forces and with academic personalities, collaborations between the National Council and important stakeholders interested in sustaining this project, one mobile application for training SME Bootcamp initiated for testing and spreading expertise and information, ambassadors of SME Academy and one event „SME HR Weekend" with the participation of 100 employees from Human Resources departments.

The official website of the European Investment Fund presents the fact that five Romanian banks have chosen to be part of the SME Initiative in Romania, to provide financing for small and medium-sized enterprises, under the surveillance of the European Investment Bank Group, the European Commission and the Government of Romania (EIF, 2018a). These banks (Raiffeisen Bank, ProCredit Bank Romania, Banca Comerciala Romana, Banca Transilvania and BancPost) agreed to provide a 60% guarantee on each loan for a SME and by diminishing the interest rates charged by them as creditors and should support around 3.700 SMEs in need. From the European Regional Development Fund, Romania is contributing 100 million euro for this EU initiative, together with resources from the EIB Group and Horizon 2020 programme, obtaining benefits on advantageous terms such as diminished interest rates and collateral requirements (EIF, 2018b). The SME Initiative Programme for Romania is part of an initiative of the European Commission and the EIB Group since 2016 so as to encourage member states to improve their use of ESI Funds invested through financial instruments until 2020 and augment the competitiveness of Romanian SMEs through increased access to finance; this financial instrument will act in favor of private investment, and it will certainly stimulate growth and job creation for the SMEs area.

Conclusions

The current paper envisaged the exploration of the multifaceted instruments at the disposal of Romanian SMEs in their endeavor to increase business competitiveness via the development of various forms of capital, starting from the intellectual capital and its inherent dimensions and moving forward towards the access to different sources of financial capital.

The addressed legal, governmental and / or institutional initiatives and programmes are in line with the general policies of the European Union for the SMEs sector and have been designed to provide feasible solutions to the entrepreneurs and managers who confront themselves with multiple challenges, such as the lack of knowledge, competence, expertise, vision, know-how, etc. at different organizational levels, the ambiguity related to the proper strategies and practices dependent on contextual factors, the pressure of fierce competition and of establishing sustainable business relationships with key stakeholders, the deficit of financial resources, etc.

Even though the paper aimed at advancing an overall outlook, further studies would benefit from more in-depth analyses of these instruments and their practical effects within SMEs. Conducting empirical investigations in this vein would offer valuable insights into the topic by bringing forward key informants' views on the impact of such catalyzers for SMEs' capabilities to innovate, become more competitive and efficient in their long-term

undertakings. Also, it would unravel the advantages and potential areas to improve in the formulation and implementation of specific national initiatives, thus engendering a proactive approach.

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CORPORATE SOCIAL RESPONSIBILITY FOR INDUSTRY 4.0. THE CASE STUDY OF THE ITALIAN COMPANY OPERATING IN POLAND

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Abstract

Sustainable development must be part of the organization's core business and can not be treated as a chance to satisfy shareholders, customers or the regulator. Operating in a sustainable manner is an advantage for companies and for society. So why are not all companies operating in this direction? The reasons are many and sometimes complicated. The main useful tools to addressed this issue are CSR culture and the new vision of Industry 4.0.

The article presents various aspects of Corporate Social Responsibility for Industry 4.0 on the example of the Italian company operating in Poland.

Keywords: Corporate Social Responsibility, Industry 4.0, Circular Economy, FCA Poland

JEL Classification: O14, O19, O25, 033, O35, 044

Introduction

Manufacturers are under constant pressure from various circumstances. They must reduce the negative impact on the environment and work time, while increasing throughput and quality, in order to continue to compete effectively. Manufacturers are also not indifferent to disruptions, and in recent years lean manufacturing and automation put additional pressure on them, forcing some of them to even eliminate them altogether.

Another breakthrough in production is already underway, i.e. "Industry 4.0" [Manohar, 2015]. It is a continuation of the three previous phases of industrialization - mechanization, the dissemination of electricity and the automation and computerization of production. It will be a smart production environment thanks to the integrated platform of corporate data systems, Internet of Things (IoT) and cloud computing. Industry 4.0 will provide insight into variables or anomalies that may cause performance problems, such as machine failures, bottlenecks or waste, thereby completely changing the manufacturing sector and fundamentally changing established relationships between manufacturers and consumers of products [Sundblad, 2018]. By introducing Industry 4.0 to their strategies, manufacturers also orientate their organization towards the future. Consumers are increasingly interested in buying products from companies that have introduced CSR principles. Organizations that

can demonstrate low energy consumption or lower carbon dioxide emissions and have better employee welfare policies will be the ones that will be able to compete most effectively encourage and gain larger market shares. [Sundblad, 2018]. According to Sundblad [2018], Industry 4.0 goes beyond creating efficiencies. It also empowers manufacturers to create more customized products, which can help them stand out in a crowded marketplace, and improve loyalty and satisfaction among their customer base.

Manufacturing industry contributes to environmental pollution and social cost. Hence, corporate social responsibility (CSR) functions as a way to reduce the effects of corporate activities, to increase long-term performance and stakeholder trust.

The Industry 4.0 opens up scope for thought and action in the area of corporate social responsibility. There is a very close link between the fourth industrial revolution and CSR. The digitalisation of industrial production has a direct impact on employment and, through this, on society. And if the forecasts are right – 47% of industrial production will be fully automated by 2028 [Rossi, 2017]**.** Rossi asked:

- if people will lose their jobs because they've been replaced by machines?
- if the numbers of new professionals required by digitalisation (data scientists, automation experts, application or smart device developers, software programmers, systems integrators, etc.) will be greater or smaller than today's factory workers?
-if the boost to productivity and competitiveness will be sufficient to guarantee new jobs for people in companies that lose out to competitors and have to cut their workforces?

According to Visser [Visser, 2011], the history of corporate social responsibility can be divided into five periods: greed, philanthropy, marketing, management, and responsibility. Each period refers to a specific stage for companies: defensive, charity, promotional, strategic and systemic. Naqvi [Al Naqvi, 2018] is convinced that a new CSR era has begun. It is known as the age of intelligence, and the corresponding stage is the cognitive era when machines are implemented in order to radically transform and improve CSR processes. CSR can be seen as a business process and therefore it constantly needs improvement in its efficiency and effectiveness. Industry 4.0 will be the foundation of cognitive CSR in which artificial intelligence technology is implemented in a strategic and integrated way to radically improve the CSR process [Al Naqvi, 2018]. This will be of particular importance to the automotive industry.

Why is it especially in the automotive industry? The demand for customer services has increased along with several non-automotive companies that are looking for customer engagement channels outside the point of sale of vehicles. Original equipment manufacturers (OEMs) are losing significant opportunities in product planning, new services and timely response due to the lack of information about customer or vehicle data. Direct interaction between the OEM producer and the customer or vehicle will help them to understand and evaluate customer preferences and thus increase the efficiency of operations [Manohar, 2015]. Industry 4.0 will present some of Mega Trends, which are to be key factors in the transformation of the automotive industry, namely Cloud computing, cyber security, Big Data analytics, and Internet of Cars. Industry 4.0 will create conditions to shape the future of the automotive industry. By using such innovations as 3D printing, robotics and common IT technologies, OEMs will improve product design and transform traditional forms of production and supply chain. As the needs of the automotive industry are changing towards complex products, minimum lead times, raw materials savings and non-standard products, it is certain that most industry players will adopt this transition. For example, the automotive industry is expected to account for 20% of the 3D printing market by 2025. This change in the industry will create a situation in which the workforce will be responsible for a smaller proportion of the overall production costs. The cost advantage in countries with low labor costs will fall sharply.

The emergence of new business models will eliminate disparities between industries. Horizontal and vertical convergence will be more real than an independent approach. For example, it is expected that the cooperation of the healthcare and automotive industry will increase. Thanks to this, health, wellness and wellbeing will become a distinctive feature of the brand outside of automated vehicles.
The development caused by Industry 4.0 and its impact on the automotive industry will require a joint effort by all ecosystem partners (OEMs, decision makers, suppliers, end users, etc.) to increase reliability and bring great benefits. Such synergistic efforts will increase end-user awareness of the huge potential of Industry 4.0, which will eventually lead to increased demand for new services and, as a result, to the sustainable development of the automotive industry [Manohar, 2015].
Companies in the automotive industry are opening research centers dedicated to Industry 4.0. One such created is Centro Ricerche Fiat: Industry 4.0. Their latest achievement is the DIDA platform [DIDA, 2019]. DIDA (Digital Industry Data Analytics) is a platform for analyzing shop floor data, developed by Engineering and tested by the FIAT Research Centre as part of the OEDIPUS project. OEDIPUS (Operated European Digital Industry with Products and Services) is part of EIT Digital's Digital Industry Action Line and focuses on creating innovative solutions for European actors in the manufacturing sector. The DIDA, a business intelligence platform for the collection, management and visualization of big data derived directly from IoT sensors installed on production lines, makes it possible to collect, store, analyze, filter and visualize a substantial amount of big data from a variety of sensors located on the production lines (e.g. from sensor-equipped welding cells) within an FCA factory.
This issue also enters to the FCA in Poland. Recently at the industry conference dedicated to Industry 4.0 Jagosz from Fiat Chrysler Automotive showed how to eliminate the problems associated with ergonomics using cooperating robots [Jagosz, 2019].
In this paper we present the application of CSR concept, in particular concerning the environmental issue, and the innovation tools of Industry 4.0 within the Italian automobiles company operating in Poland.

FCA in Poland

The economic relations between Italy and Poland have very solid roots. This is thanks to long-term relationships of companies, which have been operating in the area for long time. One of these is Fiat Polski, in Poland since 1932.
FCA market in Poland is growing steadily with the phenomenon of delocalization for many reasons: the main one is the need to contain the costs and relocate to countries where labor costs much lower. One of the most important plants is that of Tychy, which we will discuss in the next section.
FCA being a multinational must interface with the territory, the environment and the workers: the stakeholders. Hence, sustainability reports have been elaborated addressing matters as gas emissions, water footprint, energy consumption, policies adopted with workers. So we can have a complete view of how the company operates in all aspects. Let's study the FCA case and show how greening can help even on the turnover as well as the image.
In the last report of sustainability of FCA [FCA, 2018], the company set the goals, even, through sustainable products and responsibility of the management manufacturing for reduce the impacts on the environment. The basic concept is producing for the environment and sustainability, minimizing the waste during all the value chain

Producing in the perspective of a circular economy concept

All the steps of value chain are important and FCA take care, minimizing and solving all the probably problems they can have during the entire life of the product. Sustainability is one of the goal for all those steps:

- Design and Innovation: with 4.3 billion Euro spent in research and development, FCA gives innovations on their product and process, vehicle fuel economy and emissions, vehicle material composition and end-of-life, environmental impact and natural resource consumption in production processes. The results of these operations generate a value of 8,478 patents.

FCA select materials enhanced with natural fibers and recycled aluminum alloys allow a reduction in both weight and environmental impacts of the vehicle. For example, for the Chrysler Pacifica's model, soy-based acoustical foam contributes to the weight reduction of over 100 kg. In addition, its lower density requires less foam to achieve the desired performance, while reducing costs.

- Purchases: On this side, the company set goals on indirect environmental impact and natural resource consumption and innovation of components and processes. A key point is the collaboration with sharing the technologies (industries and the regions).

FCA can count on 2500 suppliers in all the world, each one operate with this standards, for a total purchasing of 70 billion of euros.

- Production: this is the phase with the main impact regards as sustainability, environmental burden and natural resource consumption. Input needs for the production are around 48 Million GJ of energy and 24.1 million m^3 of water. Results? 3.8 Million tons of CO_2 emissions, a decrease of 11.3% compared to 2010 and 2.1 billion m^3 of water saved with a recycling index of 99%. This approach helps to improve the vehicle fuel efficiency and reduce vehicle CO_2 emissions.
- During this step the company uses waste as a resource. For example, the use of rainwater and new production technologies adopted at the Cassino plant in Italy makes it self-sufficient in terms of water usage for production. Through innovations such as dry scrubbing technology in the paint shop, zero water is withdrawn from local resources.
- Use: one of the major impact for the brand reputation and value, for a car company like FCA, is vehicle fuel consumption and emissions. With 111 billion of euros in revenue FCA guarantee mobility to 4.7 million of new FCA vehicles delivered to customers.

Promoting eco-friendly driving is a responsibility for FCA: an example is eco Drive, an FCA software system available on selected models that offers personalized tips on driving styles with the objective of contributing to a reduction in fuel consumption and emissions.

- End of Life: last step and strength point of the green value chain. Promoting reuse, recycling and recovery of vehicle materials is one FCA responsibility. So how, parts like battery and the vehicle are dismantling and remanufacturing. It is here where we have in addition saving costs. The old "linear economy" concept is replaced by the concept of the "circular economy" (Kalmykova et al, 2018).

These reuse parts, from an economic point of view, simultaneously reduce the cost of vehicle and decrease the volume of salvageable materials heading to landfills.

The remanufactured parts of the company are air compressors, starters and alternators, electronic control modules, engine and transmission product categories.

According to the line of FCA, "Jeep Wrangler" can be a good example for show the guideline of the company. A modern design, advanced technology and an integration of sustainability solutions to reduce weight and improve fuel efficiency. The wider use of smart technologies has contributed to an improved balance between performance and fuel economy. These technologies include smart charging, optimized engine cooling systems and cylinder deactivation.

For the material: aluminum closures (doors, hood, fender flares, and windshield frame) for help to reduce weight and boost fuel economy so consequently reduce emissions of CO_2. But not only this for reduce the CO_2 emissions: they developed electrification technologies: a mild hybrid system using belt starter generator technology which offers improvements in fuel economy and a reduction in CO_2 emissions. The line on reducing emissions is even on alternative fuels: natural gas, produce new products that can use the fuels aligned already on the market or bio methane (a Renewable Fuel Source).
As we said, the final step of end of life, have to be manage for a recycle or re use the product with the final goal of minimizing the waste. The methodology used to support transition to circular economy is the Life Cycle Assessment, which consider factors based on ISO standards (Motta, 2018).

Polish companies of FCA (Tychy and Bielsko Biala) and the World Class Manufacturing

FCA Poland is the biggest of the 17 companies of the Fiat Chrysler Automobiles Group (FCA) in Poland, and its plant in Tychy is one of the best plants of the FCA Group. In 2017 the car "FIAT 500" had an increase in demand compared to 2016. Tychy's plant produced 263,424 units divided between Fiat, Abarth and Lancia (178,989 Fiat 500s, 62,085 Lancia Ypsilons and 22,350 Abarth 500s).
The Tychy factory is one of the few factories in the world to have won a gold medal in the World Class Manufacturing (an integrated business management methodology according to the highest world standards in terms of safety, environmental protection, maintenance, logistics and quality).
This way of production (the WCM) is an innovation program based on continuous improvement, is an integrated system derived from Japan, a new way of working that involves the elimination of all kinds of waste and loss (Muda). One of the step is the responsibility environmental management. An integral part of the management of its industrial processes is committed to implementing an Environmental Management System (EMS) based on standard methods and procedures, created to prevent and reduce the environmental impact of production activities at source, from the bottom to the end.

How the FCA Poland World Class Manufacturing works

After evaluating the results obtained by the plant, the auditors score between 0 and 100. Certified and qualified members of the World Class Manufacturing (WCM) Association carry out the audit work. High scores are ranging from bronze to silver, gold and World Class. This audit system enables a constructive exchange of experience and solutions between members of the WCM Association as well as between Group plants. At the end of 2012, 109 Fiat Group sites were involved in the WCM program: 19 of these achieved performance levels, eight were silver and the Bielsko Biala plant (Poland) was the first in Fiat Group history to reach gold level [FCA Poland, 2012].

Conclusions

The future development of Industry 4.0 and its effect on the automotive industry will require synergetic efforts from all ecosystem.
The companies and their stakeholders must take responsibility for the process of Industry 4.0 and steer it in a direction that simultaneously ensures economic, social and environmental sustainability.
Industry 4.0 forms the basis for cognitive CSR. FCA Poland World Class Manufacturing is a good examples of the CSR and initial Industry 4.0.

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GREEN HRM: TOWARDS SUSTAINABILITY IN HUMAN RESOURCE MANAGEMENT

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Abstract
Environmental management is recognized as one of the most appropriate tools used to manage environmental degradation issues. Organizations around the world have begun to implement changes in their organizational culture and structure to put the sustainable development concept in the forefront and include environmentally friendly practices as an essential part of their business. The aim of this paper is to attempt to ascertain, summarize and explain the specificities of sustainable development, the characteristics of its environmental, economic and social dimension for organizations, the benefits of implementing the concept of sustainability in organizations worldwide, as well as the importance and advantages of embedding sustainability in human resource management (HRM) practices in order to reach a new concept worldwide - green human resource management. Even though green HRM is still in the initial stage of development many organizations are already accepting green initiatives in all areas of HRM. Having in mind that HRM should serve as a foundation of every business, green human resource management should include all policies and procedures that will transform the roles of employees so they may contribute in different ways to the achievement of environmental sustainability. The conclusion of this paper is that HRM has an opportunity to play a vital role in driving the organizations to implement green practices and become more sustainable. The significant contribution of green HRM should be in terms of raising environmental awareness among employees and their readiness to perform green activities, while environmental behaviour learned at work may be easily transformed into employees' lifestyle.

Keywords
Green human resource management, sustainability, environmental sustainability, human resource management, environment, sustainable development

JEL Classification
M50, Q50

Introduction

Continuous environmental degradation mainly caused by the human factor has created the need for putting more emphasis on sustainable development. Industrial and economic development increased further devastation of the environment which led to the state where preservation of the environment and natural resources have become tasks of vital importance for the whole society. Climate change, regulatory pressures and societal demands continuously emphasize the need for greater environmental and social

responsibility. As achieving sustainability becomes a key focus, more organizations have realized that they need to change the way they are doing business to reach this goal. Organizations around the world have started to implement changes in their organizational structure and organizational culture in order to put the sustainable development concept in the forefront.

Environmental management is recognized as one of the most appropriate tools used to manage environmental degradation issues. It refers to a set of practices implemented by a specific group in order to preserve the natural environment. Sustainable companies need to consider environmental impacts in the process of making business decisions. Environmentally friendly activities have become equally important as other business activities and have grown into an essential part of every business policy. Today organizations are facing uncertainty regarding the ways to implement efficiently the principles of green management and improve the sustainability of business (Boselie et al., 2001). There is a wide range of variables which influence the adoption of environmental strategies by an organization, including financial indicators, pressure of stakeholders and the image of the company (Gonzalez-Benito, 2006).

However, the implementation of environmentally friendly programs is not possible without the contribution of human factor. Therefore, human resource management function has a critical role in achieving success in sustainability-oriented organizations. It is claimed that greater power of green HRM policy leads to higher intensity of adoption of environment management system within an organization (Bohdanovicz et al., 2011). Having in mind that human resources are an essential part of the actual implementation of environmentally friendly policies and practices (Renwick, 2012), in order to reach environmental sustainability goals organizations need to include human resource management processes to influence their employees toward a green way of thinking.

The aim of this paper is to explain the meaning of environmental, economic and social dimension of sustainable development for organizations, the benefits of implementing the concept of sustainability in organizations worldwide, as well as the importance of embedding sustainability in HRM practices in order to reach a new concept - green human resource management function.

Dimensions of Sustainable Development

More and more organizations around the world implement principles of sustainable development in their operations (Kim, 2018). The most widely used concept of sustainable development was presented by United Nations World Commission on Environment and Development (WCED) in 1987. Today this concept is supported by various institutions, companies and governments around the world (Almada & Borges, 2018). According to WCED sustainable development is defined as the ability to fulfil the needs of the present generation without threatening the potential of future generations to content their own needs (WCED, 1987).

The aim of sustainable development is to improve the standard of living while preserving the environment, natural resources and ecosystems resources for future generations (Zoogah, 2011; Seliger, 2007). Implemented in the appropriate way sustainability bring numerous benefits to the organization, such as competitive advantage, improved efficiency and increased value of the company (Kim, 2018). It may also increase employees' satisfaction, improve their growth and enable introduction of innovations in the organization (Fairfield et al., 2011).

Sustainable development consists of three mutually supported and dependent dimensions: economic, social and environmental. Even though the liaison among these three dimensions of sustainable development is important, they are often seen in a different way by different groups (Gollagher, 2013), which makes the implementation of the concept of sustainable

development difficult since it is focused on the overall sustainability of the business while at the same time it needs to respond to the interests of various stakeholders.
In order to be economically sustainable organizations need to maintain a continuous production of goods and services, to enable effective use of workforce and resources, to be responsible to the regulations set by the government, to keep external debt on a reasonable level and to avoid severe disproportions in the sector that could have a negative impact on agricultural and industrial production. Social sustainable development focuses on improving living conditions and overall human safety, while socially sustainable organization is expected to focus on health, education, gender equity, adequate provision of social services, political responsibility and involvement.
The concept of environmental sustainability (including preserving and more efficient use of natural resources and energy) has become recognized in the contemporary business world and research has shown that it may be successfully implemented. Environmental sustainability stands for "meeting the resource and services needs of current and future generations without compromising the health of the ecosystems that provide them" (WCED, 1987). Environmentally sustainable organizations are focused on the preservation of the natural environment and resources, i.e. protection of biodiversity, atmospheric stability and other ecosystem functions. They are characterized by stable foundation of resources, avoiding overutilization of renewable resources and exhaustion of non-renewable ones to a certain degree. Environmental sustainability requires acquiring new knowledge which will enable further development of advantages of the environment.

Greening the Business

Simultaneously with the concept of sustainable development, the green business concept started to develop. Increased environmental awareness over the last two decades influenced the implementation of green practices in organizations worldwide. First green initiatives were implemented in the business world in 1980s.
Any green activity related to the operations of an organization can be considered as business greening (Buyyse & Verbeke, 2003). Hence, the organization which has incorporated green practices in its operations is being referred to as "green business" (Peattie, 2001). Green business refers to an institution which produces green output (Brown & Ratledge, 2011) and enables the achievement of a positive financial turnover utilizing the opportunities provided by the nature without damaging the environment. According to Cooney (2008) green business is a business with a long-lasting commitment to environmental principles placed in its business operations.
Green business provides many benefits for the organization, including enabling access to new markets, cost reduction, increased productivity and a healthier environment. Sustainable organizational practices should be accompanied with social responsibility since green business is being environmentally responsible, while at the same time tends to be accountable for the activities that involve managing human resources.
Nowadays terms such as "green jobs" and "green employees" are used more and more often. Organizations are increasingly expected and required to support environmental strategy development in order to improve sustainability performance.

Embedding Sustainability in HRM Practices

An organization that wishes to implement the green concept should determine the importance of sustainability for the business, define a sustainable development plan, and review the capabilities and resources available for successful implementation of the green strategy. Sustainable human resource management supports the "greening" of an organization (Cohen et al., 2010). Therefore, the inclusion of environmental practices into HRM enables the achievement of sustainability of an organization. Sustainable human

resource management refers to "the utilization of HR tools to help embed a sustainability strategy in the organization and the creation of an HRM system that contributes to the sustainable performance of the firm" (Cohen et al., 2010).

Managing green human capital plays an important role in developing ecological practices within an organization (Jabbour et al., 2010). Since environmentally friendly actions of an organization are encouraged by human factor, employees need to be involved in this process. Environmentally-oriented approach may be implemented only by employees who have a positive attitude and respect towards the environment (Jabbour et al., 2010). Thus, organizations need motivated and committed employees to help the company achieve its environmental objectives.

If an organization is considered environmentally friendly, it may inspire employees to accept these environmental values. The best way to incorporate environmental values into an organization is to change the organizational culture. Organizational culture is considered a good indicator showing whether environmental management has been implemented successfully within a company (Brio et al., 2007). A sustainable HRM will make a sustainable corporate culture which will eventually lead to achieving sustainable business (Ogbechie et al. 2016).

Each employee (both those working in managerial and non-managerial positions) is contributing to the progress towards achieving sustainability. Employees may play the following roles in the process of greening the organization: preservationist, conservationist, non-polluter and maker (Opatha, 2014). Preservationists are responsible for the protection of the natural environment from hazard and changes that can harm the environment; conservationists are concerned for the environment in the way that they minimize correspondence with the environment to increase its durability; non-polluters implement various practices that should prevent or minimize further pollution of air, water and soil; and makers are responsible for the creation of a greater number of quality green surfaces and work on their expansion.

Performing HRM sustainably refers to creating and delivering core HRM processes founded on the principles of sustainability (Cohen et al., 2010). The role of HR department in an organization oriented towards achieving sustainable development is to perform implementation, development and improvement of the system based on the sustainability. In such an organization employees are becoming drivers of organizational change focused on environment preservation. The achievement of environmental objectives largely depends on motivation and readiness of management and employees to accept environmental values. The commitment of management of the company influences the eagerness to change the organization towards achieving the desired environmental goals. Employee's motivation is of crucial importance in this process since it influences the course of changes and the amount of employee's commitment to environmental issues (Meyers, 2009).

Green Human Resource Management

A global concern for the preservation of environment influenced the organizations to integrate the green concept into already existing fields of management. This created a tendency to implement green ideas also in the field of human resource management, thus introducing a new concept - Green human resource management (Green HRM). Green human resource management links human resource management with the environmentally friendly actions of an organization and is considered one of essential aspects of sustainability of an organization. In order to incorporate the green concept into human resource management successfully, HRM policies and processes need to be associated with tree main aspects of sustainability - economic, environmental and social (Yusliza et al., 2015). However, this concept is still not commonly recognized among researchers and academics around the world.

One of the main goals of green HRM is to ''green'' the employees and the whole organization. Green HRM may be defined as the utilization of human resource management policies and practices with a goal to encourage sustainable use of resources and raise environmental awareness of an organization (Zoogah, 2011). It refers to approaches, frameworks and activities used to position employees within the green movement bringing various benefits both for the organization and the environment (Opatha, 2014). Green human resource management includes all environmentally friendly practices contributing to the preservation of the environment, and these green HRM practices need to be in harmony with the objectives of sustainable development.

Human resource management should serve as a foundation of every business aiming to successfully implement environmentally friendly practices and policies due to the fact that it is accountable for the implementation of green policies and activities. It has been widely accepted that HRM is primarily responsible for planning, recruitment, selection, training development of employees, performance appraisal, reward and compensation. Having this in mind, green human resource management should include all policies and procedures that will transform the roles of employees and in that way gain benefits on the business and individual level as well as on social and economic level. Environmentally friendly practices and concepts are being introduced to all areas of human resource management. Therefore, organizations have started to implement green recruiting and selection, green training and development, green performance management, green employee relations etc.

HRM has an essential role in establishing sustainable strategies. It needs to integrate the sustainability into HRM functions of an organization. The implementation of environmental elements into human resource management should be performed systematically so that employees can control environmental management (Jabbour, 2011). To achieve this both employees and employer need to share the same values.

Many organizations become green to promote themselves as desired employers. More and more job candidates are looking for employment in conscious organizations which nurture specific values (Hanna et al., 2000). It is thought that maintaining a corporate image of a green organization will attract highly-qualified and motivated staff (Greening & Turban, 2000) and improve employee satisfaction.

Sustainable organizations are looking for employees who are not concerned only on financial benefits, but also on the environment. In order to achieve and maintain the green concept, an organization should recruit those individuals who are interested in environmental issues (Haddock-Millar et al., 2015). Therefore HRM should adapt the staffing process to ensure that environmentally friendly policies and practices are being implementing in recruitment and selection strateries as well as retaining top talent (Ogbechie et al., 2016).

Even though expectations of their employees may be defined in company's environmental policy, it is not enough to enable their effective implementation. Engagement of each employee is required to achieve the environmental goals of a company. HRM should create and implement the strategies that would foster employees' engagement in environment and involve them as drivers of sustainability. It may introduce employee training and development programs that raise employee awareness of sustainability issues, while in terms of performance appraisal HRM should be responsibile for developing and implementing measurable sustainability metrics to assess employees' performance (Ogbechie et al., 2016). Additionally, employees should be encouraged to propose and perform sustainability initiatives and ideas and participate in sustainability projects and they should be rewarded for adhering to sustainable business practicess (Ogbechie et al., 2016).

Employees may contribute in different ways to achievement of environmental sustainability of a company, e.g. through reducing energy and water consumption, increasing recycling, or limiting carbon emissions, reducing air-conditioning temperatures, unplugging electrical

devices and shutting down computers when not in use, switching off lights in unused offices and meeting rooms, reducing the amount of printing, or organizing virtual meetings to reduce travelling (Cohen et al., 2010).

Green HRM provides various benefits not only at the business level but also on the individual level of every employee since knowledge and experience gained within the organization could be easily transferred into the employee's lifestyle. Thus, environmental behaviour and environmentally friendly attitudes learned within the company could be easily adopted in the personal lives of employees. If an employee values environmental behaviour at work, most likely he/she will imply the same values in his/her private life which indicates that environmental awareness and attitudes may originate both from personal and work life. An organization can use one of the two approaches to encourage environmentally friendly behavior - it may promote environmental practices from a workplace to employees' private life or vice versa (Muster & Schrader, 2011). Both approaches will result in achieving a broader range of accepted environmentally friendly practices among employees.

Conclusions

Environmental management plays one of the essential roles in achieving sustainable development (Barrow, 2006). Green human resource management has been recognized as a HRM strategy that supports environmental management in organizations with a potential to become a crucial part of environmental management. Advantages that emerge from the incorporation of green human resource management are a result of the increased awareness about environmental issues as well as increased commitment to the concept of sustainability.

Many organizations are already accepting green initiatives in human resource management. HRM has an opportunity to play a vital role in driving the organizations to implement green practices and become more sustainable. HRM should also contribute in terms of employing environmentally aware employees and raising awareness and readiness to perform green activities among existing employees. In order to achieve this HRM should work together with the company's management and other departments to develop practices and policies that align with the sustainability standards.

However, green HRM is still in the pioneering stage and it is yet to take a leading role in driving sustainability issues. Green human resource management has a lot of potential for development in the future. Even though there is a considerable amount of research in this field, there is still a lack of empirical research in the academic sphere in the context of green HRM. Further research is needed to provide a deeper understanding of how HRM practices may help in the process of greening the organization and improve the connection with the environmental management.

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DYNAMICS OF DIGITAL COMPONENT INDICATORS OF PEOPLE'S QUALITY OF LIFE IN RUSSIA IN 2015 – 2017

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Abstract

The process of digitalization covered all areas of people's life, affecting its quality. Impact of digital transformation is huge, though not yet properly studied. The first step in research of digitalization influence on quality of life should be made through analysis of its qualitative parameters. Six attributes were defined to characterize digital component of people's quality of life: digital competences of people, availability of digital goods, quality of working life and social sphere in conditions of digitalization, state electronic services for people and safety of people informational activities. These attributes are presented by blocks of indicators reflecting the process of digital transformation in Russia in different areas. To exclude interrelated indicator correlation analysis was made, with calculation of paired correlation coefficients. The results of analysis allowed to characterize alterations occurred in the area of digital technologies application within defined blocks of indicators for Russian regions and for the whole country during the period 2015 – 2017. A positive dynamics of indicators of digital component of people's life in Russia was revealed, along with some fluctuations of indicators from region to region. Finally, meaningful interpretation of observed indicators and their alteration was given.

Keywords

People's quality of life, quality of labour life, digital transformation, regions of Russia

JEL Classification

J01, O18, R10

Introduction

Digital transformation of economy involves all spheres of people and organizations activities. It suggests the alteration of technological paradigm, traditional markets as well as institutional structure of society, in which it is now necessary to consider interaction of formal and informal, market and non-market institutions as well as those corresponding to digital and non-digital processes etc. The augmented reality means the system which combines real and virtual things with real ones prevailing (World Economic Forum, 2017).

People's quality of life is a multidimensional term and there is no shared vision on it (Litvintseva and Stukalenko, 2014). Basics and specific features of people's quality of life are considered in theoretical works of scientists belonging to classic, neoclassic and Keynesian schools of thought. At the present time the people's quality of life in different interpretations was explored by A. Atkinson, A. Sen, A. Coudouel, J. Hentschel, Q. Wodon, S. Maxwell, T. Shulz, V.R. Shmidt, T. McKinley, N.D. Vavilina, V.N. Bobkov, Z.Z. Biktimirova, V.M. Zherebin, B.Ju. Koval, A.I. Pishnyak, N.M. Rimashevskaya and others.

In general we will consider people's quality of life (PQL) as level of satisfaction of material and cultural needs of people determined by their social experience and environment (Quality of life in Russia and its regions, 2009).
In our days the number of publications concerning digital transformation of society is rising. They are written by U. Isaakson, S. Berinato, S. Greenguard, D. Kahneman, R.G. Cooper, J.A. Moore, M. Reeves, D. Tapscott, E.D. Williams, K. Schwab, E. Schmidt and G. Cohan, P. Erisman, as well by as Russian scientists A.Ju. Bykov, V.I. Ignatyev, A.I. Kovalenko, L.V. Lapidus, M.M. Likina, V.D. Markova, A.A. Troshina, Ya.M. Roshchina, M. Shekhovtsev, S.A. Yablonskiy. This is despite the fact that until now there is no common approach to the set of indicators and methods of quality of life estimation, even without considering digitalization. Statistical and mathematical methods for estimation of different aspects of people's quality of life were modified and elaborated by S.A. Aivazyan, I.I. Eliseeva, L.I. Nivorozhkina, Z.A. Vasilieva, V.V. Glinskiy, E.A. Kolomak, P.M. Kozyreva, A. Kiruta, A. Shevyakov, A.V. Suvorov, V.S. Timofeev, as well as by representatives of mathematical economic school. However in practical international comparisons different indices are used which in one or another way estimate people's quality of life in different countries. The most famous are Human development index, Happiness index, Inclusive Development Index and so on. There were also works estimating quality of life in national economies as well as in separate regions and municipalities (Bobkov et al., 2017).
In modern conditions of augmented reality new approaches to measuring people's quality of life are necessary, which take into account its digital component (Digital Globalization, 2016).

Indicators

In the conditions of augmented reality it is necessary to mark attributes of PSL digitalization and to define if necessary information on them divided by regions exists and which method could be applied. Analysis of papers and other information sources on Russian regions allowed to detach different attributes which could be aggregated into 6 blocks: digital competences of people, availability of digital goods, quality of working life and social sphere in conditions of digitalization, state electronic services for people and safety of people informational activities. It should be noted that state electronic services for people and organizations are significant part of modern life and are included in development programs in many countries (Melnikov and Lukashenko, 2017). Each block is characterized by a number of indicators (Quality of life in Russia and its regions, 2009). The article considers 85 regions of the Russian Federation. Data on Arkhangelsk and Tyumen regions were used without taking into account data on the autonomous okrugs on their territories (Abdrahmanova et al., 2017). Temporal period of the research is the years 2015 – 2017.
To detach indicators for blocks the data from the Russian Federal State Statistics Service, National research university "Higher school of economics" and others (Indikatory cifrovoj jekonomiki, 2017; Informacionnoe obshhestvo, 2018; Regiony Rossii, 2018) were used in the research. These data included information from selective people screening on the matters of information technologies and information and telecommunications networks (ICN) use as well as federal statistical observation for ICN use by organizations and output of computing techniques, software and provision of services in these spheres. ICN screening is made by people selective questioning in all subjects of Russia with the subsequent extrapolation of its results on the whole population of appropriate age which allows estimation of ICN use by people both in households and in professional activities. Observation on ICN use by organizations involves legal bodies of nearly all types of economic activities (Informacionnoe obshhestvo, 2018).
Initially 49 indicators reflecting 6 attributes (blocks) digital component of peoples's quality of life. As some of indicators could reflect the same phenomena and be interrelated, they

were subjected to correlation analysis with calculation of paired correlation coefficients to measure strength of relations ship between different pairs of indicators (Timofeev et al, 2009):

$$r_{xy} = \frac{\overline{xy} - \bar{x} \cdot \bar{y}}{\sigma_x \sigma_y}, \quad (1)$$

where: r_{xy} – paired correlation coefficient; $\overline{xy} = \frac{1}{N}\sum_{i=1}^{N}(x_i y_i)$; $\bar{x} = \frac{1}{N}\sum_{i=1}^{N}(x_i)$; $\bar{y} = \frac{1}{N}\sum_{i=1}^{N}(y_i)$; $\sigma_x = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(x_i - \bar{x})^2}$ – mean square deviation for indicator x_i; $\sigma_y = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(y_i - \bar{y})^2}$ – mean square deviation for indicator y_i.

In case of paired correlation coefficient higher than 0.7 the conclusion about strong relationship between two indicators was made, then one of them was excluded from consideration basing on the analysis of their relationship with other indicators and their essence. As a result, 12 indicators from different blocks were excluded. As a result, 37 indicators remained, among them 6 ones with negative relation (table no. 1)

Table no. 1 Quantity of indicators considered in attributes (blocks) of people's life digitalization in Russia

Blocks of indicators of people's life digitalization	Selected for correlation analysis	Excluded as a result of correlation analysis	Remained	Among them having	
				positive relation	negative relation
1. Digital quality of people	11	3	8	5	3
2. Availability of digital goods for people	7	2	5	3	2
3. Quality of working life in conditions of digitalization	8	3	5	5	–
4. Social sphere and services in conditions of digitalization	17	4	13	13	–
5.State electronic services for people quality	3	0	3	3	–
6.People informational activities safety	3	0	3	2	1
Total	49	12	37	31	6

Source: own table

Examples of indicators with positive connection could be people skills of using personal computers, share of households having broadband Internet access, people using Internet for getting state and municipal services etc. Of negative connection are, for example, share of people which do not use Internet, absence of technical abilities of households to connect to Internet, factors restraining people from using Internet by safety reasons.

Indicators of digital quality of people's life in Russia

Digital quality of people. Available statistical data characterizes people's literacy level for the following types of computer work (as a percent of overall population with age from 15 to 72): using text editors (notable growth from 53% to 60%), using electronic tables (notable growth from 30 to 39%), file transfer between computers and peripheral devices (negligible growth from 38 to39%) and using programs for photo-, video- and audiofiles editing (remained at 29%). The first two indicators represent basic skills of computer literacy, their growth is in good accordance with growth of people share using computers (this indicator is excluded from consideration as a result of correlation analysis). The third and the fourth indicators are more specialized, especially editing photo-, video- and audiofiles, so they are rather "niche" indicators, related to more "advanced" computer users and to specialists in information technologies. Almost all of such users have basic computer skills, but their number is not changing so rapidly as it is observed with inflow of new computer users with basic skills only, causing therefore absence of significant changes of the third and the fourth indicators of people's computer literacy.

Index of availability of digital goods for people. Scale of personal computer use in Russian households did not significantly changed during the period of consideration, it increased only by 1.9%, and its value in 2017 was 74.4% of total number of households. The highest value was in Yamalo-Nenets Autonomous Okrug, Khanty-Mansiysk Autonomous Okrug, city of Sankt-Peterburg, the Republic of North Ossetia-Alania and Moscow region. The lowest values were in Chechen Republic, Republic of Adygeya, Chuvash Republic, Kirov and Kurgan regions.

High level of households saturation with personal computers lead to growth of broadband Internet access. In 2017 share of households with broadband Internet access increased by 5.8% comparing to 2015, from 66.8% to 72.6%. The highest value was in Yamalo-Nenets Autonomous Okrug, Khanty-Mansiysk Autonomous Okrug, Republic of Tatarstan, cities of Sankt-Peterburg and Sevastopol. The lowest values were in the Chechen Republic, Chukotka Autonomous Region, Republic of Ingushetia, Republic of Khakassia and Magadan region.

Among households with no access to the Internet the share of those reasoned by absence of technical feasibility to get connection decreased from 7.7% in 2015 to 6.2% in 2017. The share of those without Internet access due to high costs of getting Internet connection also decreased from 12.3% in 2015 to 11.5% in 2017.

So far all these indicator values allow to conclude that full availability of digital technologies for people has still not been reached in Russia. Not all households have personal computers and Internet access. The main cause for absence of Internet access is high costs of getting Internet connection.

Index of quality of working life in conditions of digitalization. Using personal computers in organizations of all types of economic activity in Russia (excluding small enterprises) slightly decreased during the considered period, though remained at quite high level. In 2015 92.3% of surveyed organizations used personal computers, in 2017 this indicator was at 92.1%. In some Russian regions 100% value was reached, namely in the city of Moscow, Republic of Crimea, Republic of Ingushetia. In Voronezh region and Republic of Tatarstan in was at 99.8%. The lowest values were in the city of Sevastopol (69.6%), Republic of

Dagestan (72.5%), Tomsk region (76.6%), Samara region (80.9%) and Novosibirsk region (81.9%).

Despite high level of using personal computers their amount for each 100 workers is not so high. On the whole in Russia the indicator value was 49 in 2015 and 2016, and 50 in 2017. The highest values are in the city of Sankt-Petersburg (60), Novosibirsk region (57), Tomsk region (57), Republic of Altai (56). Such distribution could be explained by structure of Russian economy. For example, Moscow, as the capital of Russia, is its financial, trade and information center, therefore enterprises with a need of high amounts of digital devices prevail there. The same could be said about Novosibirsk and Tomsk regions with high share of scientific centers located there. The lowest numbers of this indicator are in Republic of Dagestan (34), Kemerovo region (36), Kabardino-Balkar Republic (37), Republic of Ingushetia (37) and Yamalo-Nenets Autonomous Okrug (40).

Abundance of computer equipment allowed organizations to use it to create local information networks as well as electronic document flow. Along with it using local information networks in organizations in Russia on the whole decreased from 63.5% from overall number of surveyed organizations in 2015 to 61.1% in 2017, whereas using electronic document flow increased from 62.7% in 2015 to 66.1 in 2017.

Expenditures of organizations on information and communication technologies increased. In 2015 they spent 8.08 mln rubles per 1000 persons, while in 2017 it reached 10.13 mln rubles. Leading place takes Moscow with value of this indicator of 62.47 mln rubles in2017. In other regions this indicators value is notable lower. For example, second place takes Yamalo-Nenets Autonomous Okrug with 38.3 mln rubles. The lowest value is in the Republic of Dagestan, it is only 0.3 mln rubles in 2017.

Social sphere and services in conditions of digitalization. The period 2015-2017 did not show significant growth rates of computers amount as well share of educational institutions having high-speed (broadband) Internet access. The reason could be in active development of this aspect of education digitalization in Russia in the previous years so currently we could speak of saturation achieved in these indicators for educational institutions. Therefore this level of saturation is reflected in statistical data on amounts of computer in educational institutions in 2017 and is equal 15-20 computers per 100 students, i.e. 1 computer per 5-6 students. The same is true for share of educational institutions having Internet sites, currently it is close to 100%.

Significant increase (53% during the considered period of time on average in Russia) was shown by some other indicators of education digitalization, particularly by using technologies of distance learning. Such increase looks like next logical step in education digitalization after educational institutions got necessary tools for that – computers and Internet access (Programma «Cifrovaja jekonomika Rossijskoj Federacii», 2017). It could be expected that this process will lead to increase in number of offers on online education, distant lecture courses etc.

Comparing to education, digitalization of other spheres of social services looks to be delaying. For example, the process of saturation medical institutions with computers and Internet access is still going on, the growth rate of this indicator during the analyzed period was 22% on average in Russia and in 2017 it reached 33 computers per 100 workers of medical institutions, i.e. 1 computer per 3 workers. On one hand, it is higher that corresponding indicator for educational institutions (per 100 students), but target level of saturation in medical institutions also should be higher, perhaps at least 1 computer per 2 workers of medical institutions, so potential growth of this indicator is still at least 50%. Analogous situation is with Internet access – this indicator also demonstrates fast growth (47% on average in Russia during the analyzed period), but in 2017 there were 22 computers with Internet access per 100 workers of medical institutions, i.e. 1 such computer per 4-5 workers, which looks clearly insufficient. As a result, in contrast to educational

institutions, share of medical institutions having web-site is still quite fat from 100% (79% in 2017), though it also shows growth by 18% during 2015-2017.
The same delay could be observed for institutions of culture and museums. Indicators of their digitalization (number of institutions of culture having web-site; share of museum pieces included in electronic catalogue; volume of libraries electronic catalogues etc.) show fast growth, by tens and hundreds percents during the considered period, which is a positive thing by itself but these high growth rates are the consequence of low comparison base, among other things, i.e. low current level of digitalization in this sphere.
Finally, the fast growth of people's share using the Internet to buy goods (64% of growth on average in Russia). It could be considered as the second step of digitalization which started after people (households) in majority got computers and Internet access.
So far all considered indicators of digitalization of social sphere and services allow to state that partially it is in the first stage of digitalization (saturation with computers and growth of Internet access possibilities). This is related to medical institutions and institutions of culture. At the same time, educational institutions are already on the second stage, i.e. using newly got digital capabilities to increase online educational activities. The same situation is with households using new opportunities of digital economy (buying goods through Internet, getting distant services etc.) after getting necessary base presented by computers with Internet access.
State electronic services for people quality. In 2017 significant increase of people's share aged from 15 to 72 who interact with state and local authority bodies in getting services was observed in Russia. In 2014 it was only 29.9% while in 2017 it increased to 65.7%, i.e. more than 2 times. Among people getting services from authority bodies share of those who used the Internet for this purpose increased a bit less than 2 times, namely from 32.2% in 2014 to 64.3% in 2017. Alteration in the share of those using the Internet to get state services could be explained by overall increase of computer numbers and increase in amounts of computers with Internet access possessed by people. In addition the Russian Government implements programs aimed at digitalization of the state services sphere. In particular, the Internet portal Gosuslugi (State services) was opened and then regularly updated and widened with new functions, the same is for Internet portals of electronic government. This could also serve as a factor of increasing people's estimations of quality state and municipal services provided though Internet. Share of people using the Internet to get state services and fully satisfied with quality of these services increased from 57.5% in 2014 to 70.5% in 2017.
Among regions in 2017 the higher share of people's share used state services was in Yamalo-Nenets Autonomous Okrug (96.7%), Kurgan region (96%), Murmansk region (91.3%), Republic of Bashkortostan (90.6%), Republic of Tatarstan (90.2%). The lowest share was in Republic of Adygeya (27.2%), Republic of North Ossetia-Alania (33.4%), Oryol region (33.8%) and Magadan region (38.4%). Along with it distribution of regions in people's using state services differ from distribution in using the Internet for this purpose. So far among mentioned above regions high share of Internet use to get state services is only in Yamalo-Nenets Autonomous Okrug (86.1%) and Republic of Tatarstan (81.4%). At the same time leading position takes Moscow region (86.2%). The lowest share of people using the Internet to get state services in 2017 was in Chukotka Autonomous Region (19.2%), Jewish Autonomous Okrug (36.4%), Kostroma region (37%), Magadan region (37.8%) and Zabaykalsky Krai (37.8%).
Among those who used the Internet to get state services the most satisfied with their quality are inhabitants of Ryazan region (90.9%), Lipetsk region (89.9%), Tula region (89.1%), Karachayevo-Circassian Republic (88.9%), Yamalo-Nenets Autonomous Okrug (88%). For regions weakly involved in the Internet use to get state services the most significant reason seems to be dissatisfaction with quality of these services. These are Magadan region and Chukotka Autonomous Region, as they have lowest degree of satisfaction with quality –

22.5% and 24.4%, correspondently. Also low value of this indicators are in Zabaykalsky Krai (48.6%).
So far, sufficiently high level of using digital technologies for getting state services is still not reached in Russia (Rossija v zerkale mezhdunarodnyh rejtingov, 2019). Quality of these services is also under question as level of satisfaction with their quality was only in one region slightly higher than 90%.
People informational activities safety. Gradual growth of people's share not facing problems in the sphere of information safety (from 66 to 71%) is observed in Russia during the analyzed period, and this growth occurred in Russia on the whole and in all federal districts, which says about reliability and sustainability of this trend. At the same time people's share using tools of information protection remains at nearly the same level in 2015-2017 (about 83-86%). Therefore we could conclude that along with growth of people's skills of using computers and the Internet, the understanding of what actions should be avoided in order not to face information safety problems is also growing, not relying only on tools of information protection (for example, on antivirus programs).

Conclusions
The article consider the indicators of digitalization of Russian economy and its influence on quality of digital aspect of life in the country. These indicators were combined into 6 blocks: digital competences of people, availability of digital goods, quality of working life and social sphere in conditions of digitalization, state electronic services for people and safety of people informational activities. 49 indicators covering almost all regions of Russia for the period of 2015-2017 were analyzed within these blocks. As a result of correlation analysis (calculation of paired correlation coefficients) 12 indicators were excluded from consideration.
Essential interpretation of the remaining 387 indicators points at:
- share of computer and Internet users with basic skills is going on in households, while share of "advanced" users remains stable;
- potential of growth of computer and Internet users in households remains in case of cheapening of getting new Internet connection, all before in rural and distant locations;
- on the whole saturation level in computers and information technologies (information networks, electronic document flow) using is achieved in Russian organizations. At the same time this level (approximately 1 computer per 2 workers) is lower than analogous indicator for households;
- educational institutions, which achieved saturation in computer number and Internet access, started to use newly got capabilities in development of distance education, online lectures etc. At the same time, in medical institutions as well as in institutions of culture the first stage of digitalization process (saturation with computers and Internet access) is still going on;
- high enough level of digital technologies using in providing state services for people has still not been achieved. Quality of these services is also under question as level of satisfaction with their quality was only in one region slightly higher than 90%;
- as a consequence of growing scale of using computers and the Internet, the skills of people in the field of information safety are also increasing, which shows itself in growing of people's share not facing problems in this area.

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THE EFFECT OF REMITTANCES ON ECONOMIC GROWTH IN THE EMERGING COUNTRIES OF THE EUROPEAN UNION

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Abstract

With globalization, remittances play a particularly important role in the economies of emerging countries. In this paper we study the impact of remittances on economic growth for emerging countries in the European Union and the evolution of the share of remittances in their gross domestic product. The analysis is performed using two time-dependent regression models (linear and cubic), on data taken from the Eurostat database for the period 2005-2017. The results lead to the conclusion that, in the short term, it is expected that the share of remittances in gross domestic product to maintain the growth trend for most of the analyzed countries (Bulgaria, Czechia, Estonia, Latvia, Romania, Slovakia). The models estimate a downward tendency after 2018 for Poland and Hungary, while short-term decline and growth after 2020, for Lithuania. The regression results obtained are analyzed and interpreted and can be used as a starting point for consequent studies. It is important that remittance flows are primarily used to stimulate the economic growth of these countries by using them for improving health, education and entrepreneurship and less for consumption.

Keywords

remittances, economic growth, globalization, emerging countries, linear and cubic regression.

JEL Classification

C10, C13, C23, F24, O11, O47, O52.

Introduction

With globalization, many emerging economies in the world have turned into open markets with free flows of goods and factors, including through cross-border work. In these circumstances, the importance of remittances in the economies of developing countries cannot be ignored. People will continue to migrate as long as there is a demand for labor in developed countries. Remittances have emerged as a consequence of migration and are heavily rooted in human history, over time their economic importance and economic benefits being noticed. Remittances refer to the amounts of money transferred by migrant workers from the host country to the country of origin, for dependent persons in their home country. "Remittances" are current private transfers made by non-residents in their home country by workers who have been resident in the host country for more than one year. Transfers by migrants who live in a country for less than a year are classified as "employee compensation" (World Bank, 2010). In view of increasing remittances flows around the

world, especially in developing countries, it has become important to study the impact of remittances on the development of these economies.

Gross domestic product (GDP) as a macroeconomic indicator measures economic activity and indicates the strength of an economy by determining the value of all goods and services produced in an economy over a given period of time. Nominal GDP is commonly used to determine the economic performance of a whole country or region and to make international comparisons. Per capita GDP is used to eliminate the influence of the absolute size of the population, allowing for easier comparison of living standards between different countries.

The impact of remittances on economic growth has been studied by a number of researchers at the macroeconomic and household level, and many have found a positive remittance effect on economic growth, while others have found the opposite. Some authors believe that remittances stimulate economic growth and poverty reduction (Akobeng, 2016). Imai et al. (2014) examined the effects of remittances on GDP growth per capita for 24 Asian and Pacific countries and the results generally confirm that remittance flows have been beneficial to economic growth. The empirical analysis of the relationship between economic growth and remittances for African countries (Ahamada & Coulibaly, 2013) as well as for Saudi Arabia (Alkhathlan, 2013) has shown that workers' remittances have a negative effect on economic growth. Konte (2018) examines the impact of remittances on growth, using data for developing countries between 1970 and 2010, dividing the data into two growth regimes according to level of development, financial development and geographical location, noting that in a regime, remittances do not have a significant impact on growth, while in the second remittances the remittances have a positive and significant impact on the growth rate. Nsiah and Fayissa (2013) found a positive and long-term impact of remittances on growth in countries in Africa, Asia and Latin America and the Caribbean, while Lim and Simmons (2015) only examine the Caribbean sample and find no relationship long-term remittances and incomes. Meyer and Shera (2017) noted the impact of remittances on economic growth, using data from six countries with large remittances Albania, Bulgaria, Macedonia, Moldova, Romania and Bosnia Herzegovina between 1999 and 2013 and the results showed that remittances have a positive impact on growth. Clemens and McKenzie (2018) analyzed the correlation between remittances, population migration, poverty related to macroeconomic and microeconomic growth for 68 developing countries for the period 1990-2010 and concluded that remittances increase with increasing emigration and have a positive effect on poverty reduction, but the impact of remittances on economic growth is difficult to quantify. Sobiech (2019) analyzed the impact of remittances on economic growth on a sample of 61 developing countries for the period 1970-2010, and conclude that while in the short term remittances caused by population migration lead to poverty reduction, long-term remittances can stimulate growth, but the effect is only significant at low levels of financial development.

In conclusion, we can say that the studied literature suggests that there are different results regarding the existence of the causal relationship between remittances and economic growth, depending on the countries, the area and the analyzed period.

In this paper we studied the impact of remittances on economic growth for the emerging countries in the European Union (EU). We analyzed the evolution of remittances received from European Union and from worldwide, and then used different regression models to estimate and predict the evolution of remittance share in gross domestic product of emerging countries. In order to estimate this share we used two univariate time-dependent polynomial regression models. In this respect, we have used data for the emerging countries of the European Union (Bulgaria - BG, Czechia - CZ, Estonia - EE, Hungary - HU, Latvia - LV, Lithuania - LT, Poland - PL, Romania - RO, Slovakia - SK) concerning GDP, individual GDP per capita, remittances received from the EU countries and remittances from worldwide. The data series for the period 2005-2017 were taken from Eurostat, and

were processed using the EViews econometric software. This study includes the analysis of the share of remittances in gross domestic product for EU emerging countries, which is a novelty in this configuration of macroeconomic indicators. The results obtained are analyzed and interpreted from an economic point of view and can be used as a support either for subsequent studies or for the government policy of emerging EU member states.

Data, models and results

Data analysis. The macroeconomic indicators used for the analysis in this study are: GDP, GDP/capita, remittances received from EU countries (REM_EU), global remittances (REM_W), share of remittances in nominal gross domestic product (S_REM). The values of these indicators over the period 2005-2017 for the 9 emerging EU Member States were taken from the Eurostat database (2019). The data are organized in two-dimensional form, cross-sections - containing information on the value of the indicators analyzed at the level of each year, and time series - containing information for the indicators obtained between 2005 and 2017 for each of the nine emerging EU countries. Theoretical models are estimated and the data are processed using econometric, data processing and analysis software EViews 9.5 (2019). The statistical data collected from Eurostat shows that before 2005 there few remittance values available only for a very small number of countries. This motivates the period 2005-2017 of choice in this study. The evolution in time of remittances from worldwide and from EU shows that the value of remittances has a sinuous trend with increases and decreases, except for Hungary, which has seen a steady increase in remittances (fig. no. 1). It is noticed that with the global crisis, the level of remittances has been affected (for instance, in Romania the value of remittances has dropped dramatically).

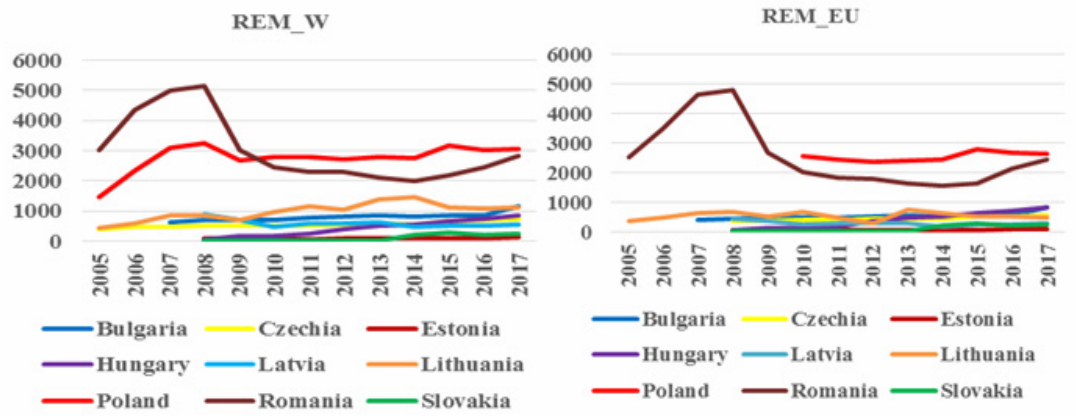

Fig. no. 1 Evolution of REM_W and REM_EU for EU emerging countries

Source: Own processing according to the Eurostat database

Analyzing the evolution of GDP and GDP/capita (fig. no. 2) it is observed that both indicators have registered a permanent increase in the 9 emerging EU states, with the exception of 2009 compared to 2008 when 8 of them (excluding Bulgaria which has kept the same value) recorded a consistent decrease. The share in GDP of remittances received from EU countries (S_REM_EU), or from worldwide (S_REM_W), are represented in fig. no. 3. From fig. no. 3, it is noted that the share of remittances in GDP has seen quite significant positive or negative variations in each country. Making the effect of the global crisis felt, people are sending less money to their country of origin, while the number of people who send money to their country of residence has diminished. At the same time, the

negative value is also due to the fact that the growth rate has in some cases exceeded the rate of increase of remittances.

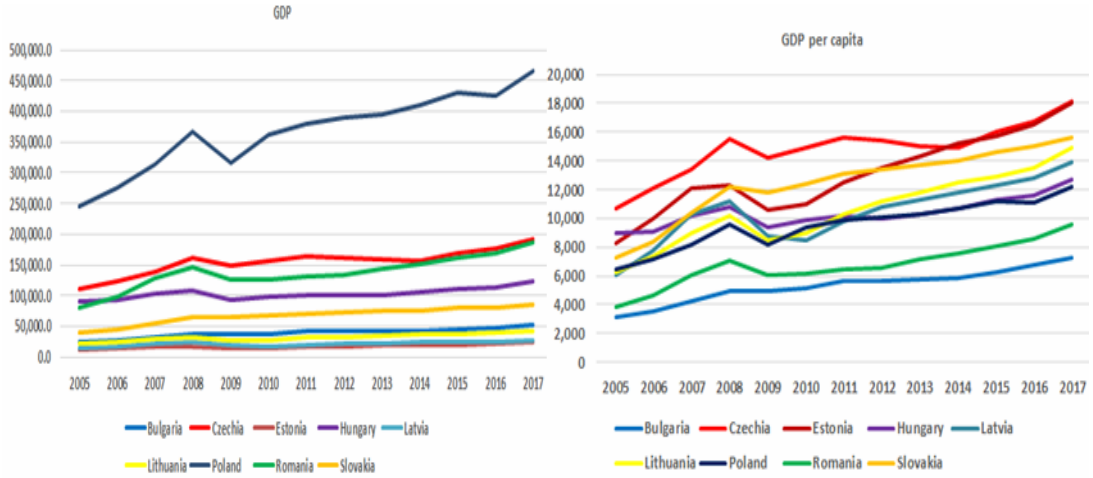

Fig. no. 2 Evolution of GDP and GDP/capita for EU emerging countries

Source: Own processing according to the Eurostat database

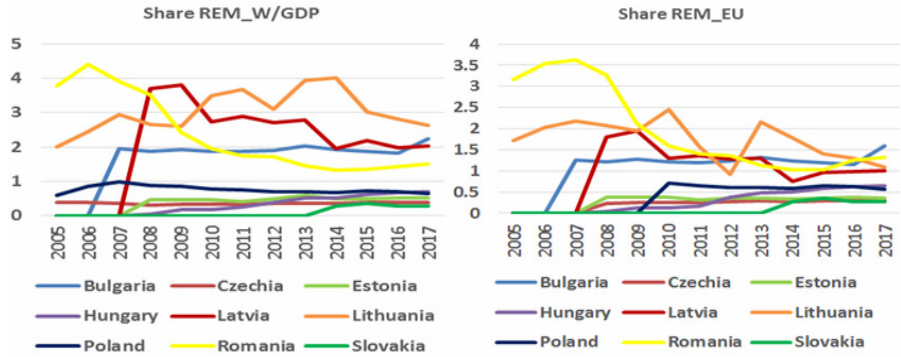

Fig. no. 3 Evolution of S_REM_W and S_REM_EU for EU emerging countries

Source: Own processing according to the Eurostat database

Estimation of the share of remittances into GDP. In order to estimate and forecast the share of annual remittances into the gross direct product different regression models can be used. Analyzing the graphs in fig. no. 3, we chose to use two different polynomial regression models, namely (1) the linear time regression model and (2) the cubic model:

$$y_t = a_0 + a_1 t, \qquad t = 1, \dots, n, \tag{1}$$

$$y_t = b_0 + b_1 t + b_2 t^2 + b_3 t^3, \; t = 1, \dots, n. \tag{2}$$

While the linear model allows only to establish an increasing or decreasing tendency of the data set, the cubic model may provide more interesting information. The signs of the coefficients of t, t^2, t^3, or specific relations between them determine the shape of the approximating curve. Thus, the dependent variable follows a N-shaped curve if $b_3 > 0$, and

there exist two real critical values of variable t, namely $t_{1,2} = \frac{-b_2 \pm \sqrt{b_2^2 - 3b_1 b_3}}{3b_3}$, if $b_2^2 - 3b_1 b_3 > 0$. In this case, as $t_1 < t_2$, to t_1 a local maximum value of the dependent variable y corresponds, while to t_2 a local minimum value. The results of the estimation using the linear model (1) are given in table no. 1, those obtained using the cubic model (2) are given in table no. 2. Here the dependent variable is either the share of the remittances form EU countries or the share of the remittances from worldwide in GDP.

Table no. 1 Estimation of S_REM_EU and S_REM_W, period 2005-2017, linear model

Co	S_REM_EU		S_REM_W	
	c	t	c	t
BG	0.483691	0.083814	0.769748	0.123703
CZ	0.028237	0.025844	0.335381	0.002812
EE	0.070263	0.029243	0.069719	0.043533
HU	-0.1702	0.064432	-0.15672	0.066628
LV	0.578809	0.057066	1.15823	0.128159
LT	2.220418	-0.06907	1.15823	0.128159
PL	-0.07775	0.065927	0.849574	-0.01317
RO	3.599519	-0.23029	4.173171	-0.26065
SK	-0.11083	0.028674	-0.11158	0.028877

Source: Own processing in EViews according to the Eurostat database

Table no. 2 Estimation of S_REM_EU and S_REM_W, period 2005-2017, cubic model

Country	S_REM_EU				S_REM_W			
	c	t	t^2	t^3	c	t	t^2	t^3
BG	-0.9671	0.9413	-0.1234	0.0051	-1.390	1.3656	-0.1735	0.0069
CZ	-0.1482	0.1103	-0.0091	0.0003	0.4299	-0.0484	0.0067	-0.0003
EE	-0.2474	0.1921	-0.0197	0.0007	-0.278	0.2093	-0.0178	0.0005
HU	0.0921	-0.0979	0.02445	-0.001	0.0383	-0.0584	0.0195	-0.0009
LV	-1.4115	1.1416	-0.1421	0.0053	-2.694	2.1570	-0.2543	0.0089
LT	1.6167	0.2520	-0.0408	0.0015	2.0377	0.0775	0.0434	-0.0036
PL	-0.0239	-0.0556	0.0311	-0.002	0.5190	0.2005	-0.0335	0.0015
RO	3.4095	0.1839	-0.1054	0.0062	4.4022	-0.1067	-0.0660	0.0045
SK	0.0987	-0.0760	0.0122	-0.001	0.0999	-0.0770	0.0123	-0.0004

Source: Own processing in EViews according to the Eurostat database

Several regression coefficients useful to compare the quality of the fit of the two selected models are reported in table no. 3. Comparing these values we may conclude that the best fit is provided by the cubic model.

Results and economic significance. Interpretation of the empirical estimations obtained using the two regression models are summarized in table no. 4. The monotony results provided by the linear model lead to the conclusion that REM_EU share in GDP is increasing for 7 of the emerging EU countries and decreasing for 2 of them, Lithuania and Romania. The same holds for S_REM_W for 8 countries, except for Poland where the linear model shows a decreasing trend.

Table no. 3 Regression statistical coefficients

Country	Model	S_REM_EU			S_REM_W		
		R^2	SER	SSR	R^2	SER	SSR
BG	linear	0.448402	0.378121	1.572734	0.43141	0.577662	3.670633
	cubic	0.840334	0.224906	0.455245	0.836776	0.34217	1.053722
CZ	linear	0.690697	0.070348	0.054437	0.160586	0.026147	0.00752
	cubic	0.864948	0.051391	0.023769	0.817997	0.01346	0.001631
EE	linear	0.522015	0.113824	0.142514	0.607145	0.142438	0.223174
	cubic	0.788437	0.083718	0.063079	0.820294	0.106504	0.102087
HU	linear	0.936838	0.068052	0.050941	0.966525	0.050437	0.027982
	cubic	0.979953	0.042384	0.016168	0.989715	0.030908	0.008598
LV	linear	0.118906	0.631863	4.391764	0.145355	1.264051	17.57606
	cubic	0.634426	0.449961	1.822182	0.665969	0.873655	6.869465
LT	linear	0.340611	0.390886	1.680711	0.145355	1.264051	17.57606
	cubic	0.440555	0.398046	1.425965	0.716758	0.371435	1.241678
PL	linear	0.654581	0.194801	0.417424	0.18749	0.569041	3.561889
	cubic	0.79767	0.164826	0.244507	0.630202	0.075643	0.051497
RO	linear	0.763771	0.52096	2.985397	0.803355	0.524549	3.026667
	cubic	0.9186	0.338084	1.028706	0.932565	0.339595	1.037925
SK	linear	0.619558	0.091395	0.091884	0.618505	0.092248	0.093607
	cubic	0.77509	0.077689	0.05432	0.773569	0.07857	0.055559

Source: Own processing in EViews according to the Eurostat database

The cubic model seems to provide a better approximation for the evolution of the data, attested by the statistical coefficients in table no. 3. If the regression curve has is "N"-shaped, there is an increase up to the first turning point (2005 + x in table no. 4), then a decrease to the second turning point (2005 + x in table no. 4), followed by an increase. This is the case for S_REM_EU for BG, CZ, EE, LV, LT and RO, or for the S_REM_W indicator for BG, EE, LV, PL and RO. As the regression curve has the "Inverted N" shape, it shows a decrease up to the first turning point, then an increase to the second turning point, followed by a decrease. This is the case for S_REM_EU variable for HU, PL and SK, and for S_REM_W in the cases CZ, HU, LT and SK. Based on the two estimation models, we can formulate the following concluding remarks regarding the evolution of the share of remittances received from EU in GDP, for the 9 emerging EU countries:

- for BG, CZ, EE, LV, RO and SK, S_REM_EU shows an increasing tendency for the next period, according to both models;

- for HU, the upward trend is maintained in the short term (2005 + 13), according to cubic model, followed a downward trend;
- for LT, the downward trend of S_REM_EU should maintain short-term (2005 + 15), followed by a growth period;
- for PL, the linear model indicates an upward trend, while the cubic pattern indicates a downward trend after 2015.

Table no. 4 Interpretation for the empirical estimation results

Co.	S_REM_EU				S_REM_W			
	LMT	Cubic model			LMT	Cubic model		
		Shape	FTP	STP		Shape	FTP	STP
BG	increasing	"N"	6	10	increasing	"N"	6	10
CZ	increasing	"N"	11	12	increasing	"Inverted N"	5	13
EE	increasing	"N"	8	12	increasing	"N"	10	15
HU	increasing	"Inverted N"	2	13	increasing	"Inverted N"	2	13
LV	increasing	"N"	6	12	increasing	"N"	6	13
LT	decreasing	"N"	4	15	decreasing	"Inverted N"	-1	9
PL	increasing	"Inverted N"	1	10	decreasing	"N"	4	11
RO	decreasing	"N"	1	10	decreasing	"N"	-1	11
SK	increasing	"Inverted N"	4	18	increasing	"Inverted N"	4	17

Note. LMT - Linear model tendency; FTP - First turning point; STP - Second turning point
Source: Own processing in EViews according to the Eurostat database

Conclusion

Remittances are a vital source of financial support that directly increases the income of families who migrate to other countries to work, and can lead to increased investment in health, education, and even the creation of new small businesses. As a result of the increase in remittances (after the decrease due to the global crisis in 2009 compared to 2008) and their stable nature, remittances have become a topic of interest for more and more emerging economists. The reality is that the value of remittances is assumed to be significantly higher, taking into account unregistered flows through formal and informal transmission channels.

It is noticed that after the global crisis there is a reconfiguration of the EU countries where the labor force of the emerging EU countries is migrating. At the same time, the data recorded in Eurostat is incomplete due to the fact that only a small part of the outputs are "officially captured". In the EU there are 9 countries receiving significant remittances, namely the emerging countries, having an annual GDP per capita below 19,000 Euros. The biggest nominal values of these remittances are recorded by Poland and Romania. Only three of the emerging countries, namely Bulgaria, Romania and Lithuania, account for more than 1% of nominal GDP for the remittances received from EU, while the share of remittances received from the worldwide in nominal GDP records the highest values for Lithuania, Bulgaria and Latvia, with a percentage above 2%. After the global crisis, there is an increase in both the volume of remittances and their share in GDP for all emerging analyzed countries. The estimation models used in this paper lead to the conclusion that, in short-term, it is expected the share of remittances in GDP to maintain the growth trend for most of the analyzed countries. The models estimate a downward tendency after 2018 for Poland and Hungary, while short-term decline and growth after 2020, for Lithuania.

Following trends in remittances, policymakers can make informed decisions to protect and capitalize on this massive capital flow, which is three times higher than official social assistance flows. Europe continues to be a significant source of remittances for countries inside the EU borders, due to the fact that EU citizens can move freely to the EU labor market and thus 2 out of 3 Euros remain in the EU countries. Real flows of remittances across Europe are considered to be substantially higher than those from official data, as legislation on migrants' entry and exit in the country of origin allows them to return home frequently, bringing home their money earned abroad. Remittance flows are vital in emerging countries, but it is important that they are used more heavily to improve health, education, entrepreneurship and less for consumption (currently most remittances being used for consumption) so that the impact of remittances leads to the economic growth of these countries.

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NEW TRENDS IN MEASURING SUSTAINABLE BUSINESS

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Abstract

Sustainable business as an inherent part of the economy faces new dimensions of topicality. Formerly, the company's impact on the environment was measured with respect to its CO_2 emissions, the usage of fossil fuels or it's consumption of natural resources. In order to evaluate or compare the companies' environmental governance, different models were implemented.

Nowadays, the company's negative externalities are being considered multidimensionally and applied to the whole value chain of business. New environmental topics such as the pollution of the sea by plastic waste and microplastics, the loss of topsoil through intensive farming and the depletion of natural resources are being hotly discussed worldwide. These challenges are enhanced by the increasing world population and the accession of wealth of the emerging markets and BRIC countries, thus resulting in sustainable growth being the only solution to the conflict of objectives.

Rating models that evaluate the sustainability of investments in the financial markets are already approved and used in politics, as well as help investors measure and compare companies' impact on the environment. Due to the new eco-friendly megatrend and challenges, the authors deal with the question whether the actual sustainable practices and measurement models are still contemporary.

Keywords

Sustainable business and development; social responsible investments (SRI); environmental, social and corporate governance (ESG); sustainability measurement; ESG-rating; Green Economy.

JEL Classification

Q55, Q56, G15

Introduction

According to the United Nations (UN) the world population will grow to be 9.8 billion people by 2050 (United Nations, 2017) Based on that fact, there is a bigger need for housing, food and energy consumption, even though the earth's resources are already limited, since the industrial countries' economic wealth already exploits the available resources. Henceforth, Brazil, Russia, India and China (BRIC countries) as well as the emerging markets will observe an accession of wealth. This megatrend leads to a fast-increasing resource demand from nature, far more than it can regenerate. On the other hand,

the population growth depends on economic expansion, as the population's needs have to be satisfied.
In order to respect both objectives equally, a sustainable economy interconnects an economic growth within ecological limits. The idea of the Green Economy introduced by the UN and the United Nations Environmental Program (UNEP) in 2012 is one solution to deal with the conflict at hand: "[The Green Economy] contributes to eradicating poverty as well as sustained economic growth, enhancing social inclusion, improving human welfare and creating opportunities for employment and decent work for all, while maintaining the healthy functioning of the Earth's ecosystems" (UNEP, 2011).
By the means of this concept, the environment is included into economical calculations in the capacity of nature capital as negative environmental side effects such as air pollution, waste and pollution of the water have an essential impact on a nation's wealth. Therefore, this deadweight loss has to be considered in national accounting.
With respect to certain studies, sustainability is now more important than ever, although it was already first used in the nineties (Cortés, 2015) by using the term "environmentally responsible development" by the World Bank in 1992 (Moldan et al., 2011) but still it seems to be difficult to reflect environmental side effects financially. To manage this challenge, a range of indices like Living Planet Index (LPI), Ecological Footprint (EF), Environmental Sustainability Index (ESI) or Human Development Index (HDI) and methods like environmental full-cost accounting (EFCA) or an environmental, social and corporate governance (ESG) rating were implemented to measure and compare companies' performance.
In regard to the new trends in sustainable business e.g. the avoidance of plastic waste, this article focuses on the question whether or not the rating of the companies' environmental impact is still up to date. Through literature research the core elements of current sustainable business practices are determined. The definition of the term "sustainability" is basically the same in most of the numerous publications, but it is not specific enough to determine a global consensus of a measurably sustainable economy.
The authors analyze the rating model of the MSCI ESG-rating, which is approved in the financial markets, concerning its measurability of sustainability and the context of the new trends in environmental questions.

Literature research

Sustainable business has been exercised since the nineties but has experienced a comeback in the last years as "global environmental problems have become increasing pressing" (Durant et al., 2017).
The broad definition of sustainability refers predominantly to the environmental sustainability as global resources are limited. A sustainable consumption of natural capabilities "in a manner that does not eliminate or degrade them or otherwise diminish their usefulness for future generations [...] and implies using non-renewable (exhaustible) mineral resources in a way which does not unnecessarily preclude easy access to them by future generations" (Moldan et al., 2011).
Cooney (2009) describes sustainable business practices as adhering to environmental principles with an outcome of environmentally friendly products or services.
According to Epstein and Buhovac (2014) sustainability is divided into the nine principles ethics, governance, transparency, relationships, financial returns, community involvement and economic developments, value, employment practices and protection of the environment. Protection of the environment means a commitment of "minimizing the use [...] of natural resources, [...] decreasing waste and emissions [...] and to maximize the use and production of recycled and recyclable materials, the durability of products, and to minimize packaging" (Epstein and Buhovac, 2014).

Although "sustainability remains a ubiquitous term [...] the most famous definition of "sustainable development" remains that of the Brundtland Report", (Durant et al., 2017, Epuran et al., 2018).
The Brundtland Report's definition of sustainability "meets the needs of the present without compromising the ability of future generations to meet their own needs", (Brundtland and the World Commission on Environment and Development, 1987).
To sum up, the fig. no. 1 gives a good overview of all definitions of sustainability throughout the correlation of the ecological footprint and the human development index. The human well-being must not be compromised by sustainable businesses, however, the consumption of the natural resources is restricted to one earth. Both targets have to be equilibrated to achieve sustainability.

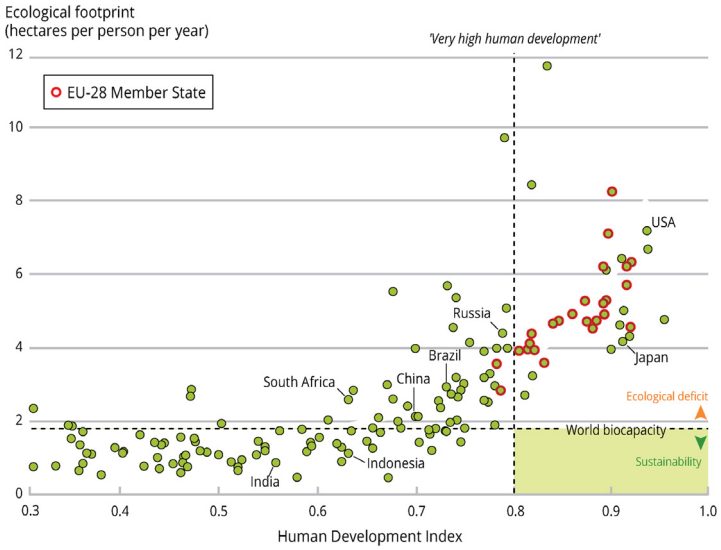

Fig. no. 1 Correlation of the ecological footprint and the human development index

Source: European Environment Acengy, 2015. Green economy, [online] Available at: <https://www.eea.europa.eu/soer-2015/europe/green-economy> [Accessed 27 March 2019].

Measuring sustainability

As the literature research shows sustainability is a multidimensional definition without a global consensus which makes it hard to quantify the information into measurable factors. Nevertheless, a transformation into a green economy requires certain quantified indicators and a range of sustainable indices are already developed and used in policy practice. Böhringer and Jochem, (2007) have evaluated sustainability indices like LPI, EF, ESI or HDI with respect to scientific requirements and found the following: No index reproduces all variables of sustainability. Furthermore, the variables are not objectively weighted and almost all indices, "fail to comply with the scientific aggregation rules [... only one] uses the appropriate geometric mean for aggregation" (Böhringer and Jochem, 2007) and most of the sustainability indices are not applicable for the assessment of companies.
Besides indices a range of rating agencies like the Morgan Stanley Capital International (MSCI) or Sustainalytics have developed ESG-ratings to set standards for a company's business. The environmental standards focus on the company's impact on nature, while the social factor examines the company's relationships with respect to employees, business partner and the society. The criterion corporate governance rates the company's leadership and willingness to make its business transparent.

The ratings are based on a list of criteria individually compiled by the agency. Hence, due to differently weighted criteria and a varying definition of sustainability the ratings diverge from each other, even by evaluating the same company, (Karrenbrock, 2018).
The MSCI ESG-rating model specifies ESG risk and opportunities which "are posed by large scale trends (e.g. climate change, resource scarcity, demographic shifts) as well as by the nature of the company's operations" (MSCI Inc, 2018a). Environment, social and governance are clustered in themes which are subdivided into a variety of "key issues", which are converted to each industry (MSCI Inc, 2018a). The range of key issues is shown in fig. no.2.

3 Pillars	10 Themes	37 ESG Key Issues	
Environment	Climate Change	Carbon Emissions	Financing Environmental Impact
		Product Carbon Footprint	Climate Change Vulnerability
	Natural Resources	Water Stress	Raw Material Sourcing
		Biodiversity & Land Use	
	Pollution & Waste	Toxic Emissions & Waste	Electronic Waste
		Packaging Material & Waste	
	Environmental Opportunities	Opportunities in Clean Tech	Opp's in Renewable Energy
		Opportunities in Green Building	
Social	Human Capital	Labor Management	Human Capital Development
		Health & Safety	Supply Chain Labor Standards
	Product Liability	Product Safety & Quality	Privacy & Data Security
		Chemical Safety	Responsible Investment
		Financial Product Safety	Health & Demographic Risk
	Stakeholder Opposition	Controversial Sourcing	
	Social Opportunities	Access to Communications	Access to Health Care
		Access to Finance	Opp's in Nutrition & Health
Governance	Corporate Governance*	Board*	Ownership*
		Pay*	Accounting*
	Corporate Behavior	Business Ethics	Corruption & Instability
		Anti-Competitive Practices	Financial System Instability
		Tax Transparency	

Fig. no. 2 ESG key issues of the MSCI ESG-rating model

Source: MSCI Inc., 2018a. MSCI ESG Ratings Methodology. Executive Summary. [pdf] Available at: <https://www.msci.com/documents/10199/123a2b2b-1395-4aa2-a121-ea14de6d708a> [Accessed 28 March 2019].

MSCI Inc. evaluates the exposing to the company and the company's ability to manage those key issues. The relevant key issues are weighted and the evaluation of a company's business is normalized to other companies of the same industry.
Finally, the scores between 0 and 10 are asserted to produce an established letter rating between AAA and CCC that "helps investors identify ESG risks and opportunities within their portfolio" (MSCI Inc, 2018b). The process of the aggregation is shown in fig. no. 3.

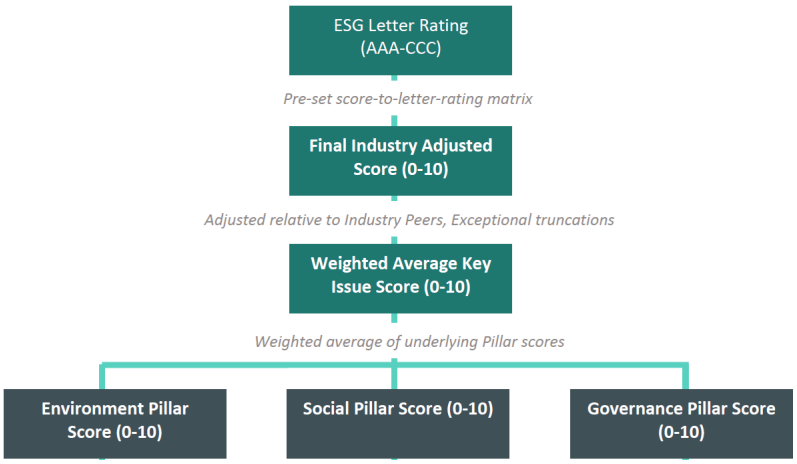

Fig. no. 3 The MSCI ESG-rating hierarchy

Source: MSCI Inc., 2018. MSCI ESG Ratings Methodology. Executive Summary. [pdf] Available at: <https://www.msci.com/documents/10199/123a2b2b-1395-4aa2-a121-ea14de6d708a> [Accessed 28 March 2019].

Stock exchanges have taken up the ESG-ratings to create ESG indices that "reflect the level of maturity of companies listed in this area. Currently, there are more than 50 indices of responsible companies on the global market [like Dow Jones Sustainability Index, ESG MSCI, STOXX Global ESG Leaders Index]" (Mikolajek-Gocejna, 2018).
Example indices may consist companies with higher ESG ratings compared to the benchmark (e.g. MSCI ESG Leaders Indexes), high ESG-rated companies are separated into regions (e.g. MSCI USA ESG Focus Index) or investments without an involvement in specific industries like tobacco, weapons or fossil fuels (MSCI Inc, 2018b).

Conclusions

Through the literature research the missing consensus of the term "sustainability" becomes apparent. Because of this, every business and industry has the possibility to call itself sustainable, which opens the floodgates to greenwashing. Sustainability, although it remains a ubiquitous term, implicates an ecofriendly business model to potential customers.

The ESG-rating model values a company's impact on the environment and establishes transparency for financial investors. However, the model is predominantly applicable for companies quoted on the stock exchange. So, most of the worldwide corporations are neither listed on the stock exchange nor rated in matters of ecofriendliness. In addition, a low ESG-rated company with a high exposure of risks does not have to bear financial consequences. The rating itself is not a basis for sanctions, only an instrument for ESG aware investors. However, most investors will not take this rating into consideration.
Unfortunately, the results of the rating agencies differ in weighting, emphasis of the key issues and the evaluation itself is subjective and not transparent. Furthermore, every corporation's business model is individual and the value chain not completely transparent. Therefore, the question arises, how does the rating agency deal with low or non-rated subsidiary enterprises and subcontractors? And at the same time how are companies assessed with ecofriendly and conventional brands?
So, as long the ESG ratings cannot be objectively quantified to offer financial incentives or financial penalties conversely, a transformation towards sustainability is difficult to implement.

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RISK ASSESSMENT MATRIX FOR FOOD SAFTEY

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Abstract

In recent decades, the agri-food sector study has been based on the analysis of commodity exchanges, while in the current period it is replaced by the study of the product line, focusing on the agents involved in each phase of the chain, but also on the material operations that trigger these changes and highlight the tendency for more and more products not to reach the final consumer in their natural state, which are often processed.

The foundation for the development of a viable society brings to the forefront the quality and safety of food and products marketed by any approved establishment. The new EU vision focuses on extending this concept across a country's borders, ultimately encompassing regional structures around the world. Therefore, the value of food across the European area will be the first in making decisions of any kind on compliance with food quality and safety standards.

In view of the above-mentioned aspects, this paper aims to identify and analyze the risks in critical control points across the food chain so that they can be reduced to the minimum threshold

Keywords

Risk assessment, Food safety, HACCP System

JEL Classification

Q18, Q12, I12

Introduction

The foundation for the development of a viable society brings to the forefront the quality and safety of food and products marketed by any approved establishment. The EU's new vision focuses on expanding this concept across the borders of a company or even a country, eventually ending up with regional structures around the world. Therefore, the value of food across the European area will be the first in making decisions of any kind on compliance with food quality and safety standards.

Another important aspect of the quality concept, which is defined as the summation of all the features that will be included in a standard generated by the European Commission and which requires them to be respected, is consumer-oriented quality. In this respect, the consumer will establish the quality criteria and not the manufacturer because demand is the one that generates the offer and the manufacturer will be able to meet the safety and quality standards to meet the consumer's requirements. Consumers' needs evolve in relation to technical and material developments at a global level and directly proportional to scientific progress.

The quality of pork meat is influenced by certain decisive factors of aesthetic and organoleptic nature and among them we can list:
• Quality of raw materials for processing.
• Feed quality of animals.
• Personnel qualification level.
• The degree of technology of the processing unit.
• Quality of genetic material.
• Commodity circuit on the distribution chain.
These issues may or may not improve the quality of the finished product, be it processed, packaged and conditioned or sold as such.
In addition to the factors listed above, the product that reaches the final consumer is directly influenced by the management strategy adopted within the company and by the degree of organization of work within the social framework. Facilitating decision-making, promoting a quality management system and optimizing the relationships between all the economic agents involved in the production process at each stage of the process is the essence of research over the last 30 years with a strong strategic focus. Consumers are becoming more and more aware of their needs, and hygiene requirements across the production-distribution-marketing chain are becoming increasingly complex.

Literature review
Over the years, specialists have defined the agri-food chain in a number of ways but with a common meaning, representing a succession of stages achieved to achieve the objectives and the aggregate of the unified agents in the same activity.
In 1968, Goldber defines the agri-food chain as the totality of economic agents involved in the production, transformation and marketing of a product. 20 years later, Malassis says that the agro-food line represents the itinerary traveled by a product or group of products within the agro-food system.
The French economist Malassis proposes a classic approach to the study of the agri-food sector, which distinguishes between sectoral and agricultural branch concepts. It defines the sector as the group of enterprises that carry out a joint activity, namely the activity which contributes most to the formation of turnover.
In 1960 Clarck proposes a model of 3 sectors: the primary sector that includes agriculture, forestry, mining and fishing, the secondary sector that is represented by industry and the tertiary sector that includes transport and services. Current approaches to the classification of sectors of the economy are proposed and the quaternary information sector.

Research methods
For a better understanding and analysis of the risks at each stage of the agro-food chain it is necessary the fundamental theoretical research of the specialized literature regarding the possibility of occurrence of different risk factors. Also, for the implementation of preventive measures, it is necessary to research the current food safety standards, as well as the HACCP system (Hazard Analysis and Critical Control Point).

Analysis of Critical Control Points
Currently, each production or marketing establishment is bound by European requirements to practice an exceptional management system. This system is called HACCP and is a systematic method of preventing, evaluating and controlling risks that occur in the production process. The HACCP system will be deployed across all departments of the company, where specific activities such as analytical checks, quality control, technological flow control, corrective action, etc. will be carried out. All these activities, as well as the implementation of this management system, lead to the achievement of a finite product that

conforms to the requirements of the consumers that meet the hygienic and sanitary requirements as well as the technological ones.
The first stage of the HACCP system relates to risk analysis to identify, assess, prevent and correct any mistakes that may occur in the production process as a result of the human or natural factor. Risks may be of a physical nature (foreign bodies on the surface or in the composition of the product at any stage), chemical (chemical residues from outside or inside the production unit) and biological (the presence of pathogenic or non-pathogenic microorganisms on the surface or in composition of the product).
The second step of the HACCP system is to identify the Critical Control Points that are represented by each stage of the production process over the entire technological stream from raw materials to the finished product that reaches the final consumer. In the literature, there are two types of CCP (Critical Control Point), one in which risks can be prevented and eliminated, and one in which risks can only be reduced without being completely eliminated. Not only why CCP is concerned, both must be kept under control within the limits set by the relevant standards.
The four stages of the meat industry are: preproduction stage, production stage, processing stage and distribution stage. At these stages, risk analysis will be conducted on the following critical control points:
1. Obtaining raw materials.
2. Transport.
3. Obtaining the carcasses and appreciating their quality.
4. Packaging and conditioning.
5. trade.

The present study aims to analyze the chemical, physical and biological risks at each control point and at each stage of the technological flow to identify, evaluate and eliminate any doubt that the finished product will be non-compliant or will not meet the safety standards and the quality to which it is subjected.

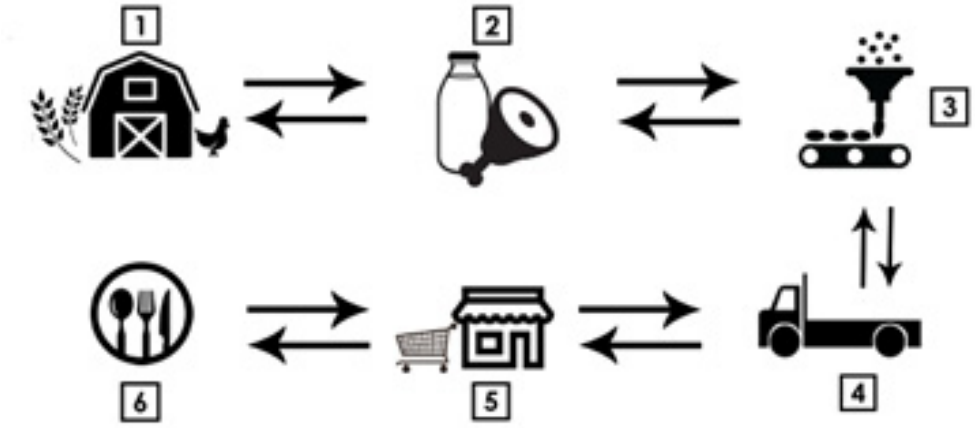

Fig. no. 1 Stages of the agri-food chain
Source: Self processing

As can be seen in figure 1, the food chain starts with the preproduction stage made in vegetal and animal farms, followed by the production phase, resulting in the primary food products such as milk, raw meat, eggs, bakery cereals , honey, etc. The third chain link illustrating traceability on the agro-food chain is represented by the processing stage that takes place either in slaughterhouses or in specialized processing units, resulting in

processed foods for consumption as such (slaughtered meat, products bakery) or products to be conditioned, packed and marketed (sausages, canned food, sweets). After the processing stage, another important chain link is represented by distribution that is followed in turn in specialized stores or supermarkets. The last stage is represented by consumption in which the processed or raw foods arrive at the final consumer included in the daily shopping cart

Table no. 1 Identifying the main categories of risks in the agri-food chain stages

CRITICAL CONTROL POINT	BIOLOGICAL RISKS	CHEMICAL RISKS	PHYSICAL RISKS
The Preproduction Stage	Pathogenic microorganisms: Trichinella, Salmonella, Leptospire, Koch Bacillus and non-pathogenic microorganisms - Coliform bacteria	Pesticides, Chemical fertilizers, Antibiotics, Veterinary medicines, Fertilizers, Herbicides	Glass from unprotected lighting fixtures, windows, insects, animal hair, nails, safety pins, accessories
Production Stage	Microorganisme patogene: Trichinella, Salmonella, Bacillus Antracis, Brucella, Picorna virusuri, Tenia Saginata/Solium	Detergents, hygiene, additives, equipment lubricants, heavy metals, environmental pollutants	Plastics, accessories, employees, nails, hair, bones, glass, various impurities
Processing Stage	Penicillium, Aspergillus, Mucor, Cladosporium, Sporotrichum, Moraxella, Clostridium	Cleaning agents, coloring agents, detergents and disinfectants, sterilizing agents, polychlorinated phenols, equipment lubricants	Foreign bodies in the working environment, bones, hair, glass, plastics and metal, various impurities
Distribution Stage	Salmonella, Bacillus anthracis Bacillus Koch, Brucella, Leptospire, Ricketts Burnetti picornaviruses Trichinella, Tenia, Saginata / Solium, Different Molds Aspergillus genus	Various types of liquefied gases, cleaning agents, solvents, residues	Glass, stones, sand, insects, hair, plastics from damaged packaging or damaged utensils, dust

Source: Self Processing according to Bălăucă Nicolae(2015) The main zoonoses in Romania incidence, evolution and legislative provisions, EuroAcademia, Bucharest

To minimize the risks at each stage of the agri-food chain, the following prevention measures are proposed:

1. Compliance with hygiene rules throughout the technological flow
2. Apply corrective measures if critical limits are exceeded for each critical control point
3. Avoid direct contact of meat with contaminated surfaces or sources
4. Phytosanitary control periodically
5. Sanitary veterinary control before the animal is slaughtered
6. Sterilization of contact surfaces and textile materials
7. Permanent deparazitation
8. Prevention of the development of microorganisms in the class of molds on the surface of the meat

Results and Discussion

Following the research carried out on each stage of the agro-food chain, from farm to fork, aspects of particular importance are illustrated by respecting the technical parameters that are included in the present standards, the observance of the legal norms on food safety and environmental protection as well as the HACCP principles . The research results highlight the importance of prior identification of chemical, physical and biological risks at each stage of the industry and the establishment of both preventive and corrective measures. For a good functioning of the processing and production units, the decision maker will take the necessary measures depending on the situation, sometimes with huge losses.

The most important aspects to be taken into account in the optimal functioning of the agri-food units, regulated by the European Commission are:

1. Labeling - This will provide consumers with complete product information regarding the quality and chemical composition
2. Genetically modified organisms - Current legislation guarantees the absence of risk for the consumption of genetically modified foods but imposes the appropriate label
3. Plant and pesticide health - current legislation regulates the sustainable use of pesticides
4. Feed - Feed will, without exception, comply with the rules on food safety, hygiene, medication and additives

Conclusions

Over the years, a thorough study of food traceability has highlighted the great importance of risk analysis in every stage, from farm to fork - from pre-production to actual consumption.

Due to globalization and the many factors that have led to it, food has become more and more processed lately, fact that influences the growth of the chain of nets on the food chain.

Each of these links implies certain specific activities that correspond exactly to the quality and food safety standards ranging from the farm gate to the supermarket, activities that increase the risk of product contamination or non-observance of the technical-material parameters, which leads to the alteration or negative results in quality control from organoleptic and biochemical point of view.

An extensive and detailed analysis of the activities at each stage of the chain leads to the reduction of risks up to the minimum degree, which determines the fulfillment of the HACCP quality and food safety standards.

Risks of food contamination are divided into three categories depending on the contaminant and thus there may be biological risks when specific microorganisms, such as viruses, bacteria, fungi, etc. appear to be in check. , physical risks then canx food is contaminated with physical agents of nature (shards, sand, etc.) or chemical risks when chemical contaminants such as solvents, pesticides.

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DETECTING BIASES IN THE NEWS REPORTING ACROSS COUNTRIES AND THEIR IMPLICATIONS FOR BUSINESSES

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Abstract

This study provides a methodology to reveal a biased news reporting in the media of a country. The study reveals topics that have a continuously benevolent or bad media reporting without any objective reason. The analysis is done in an empirical and quantitative way.

The picture of certain topics in the news is measured by the sentiment in the media in the UK and Germany. The study measures the sentiment with the help of a Long Short Term Memory (LSTM) artificial neural network that analyses the sentiment in publicly available news streams in the UK and Germany. The approach targets topics that have a similar (high) media coverage in both countries but different sentiments.

The results show that there are indeed topics that have a continuously biased reporting. Interestingly these findings often refer to topics that are well known to be controversial. Due to the fact that these biases exists in the whole news universe of a country we can well think of an alternative truth per country.

These findings show that the fake news and post-truth debate is also important on a country level, as the news might be tendentious based on stereotypes, prejudices or special economic interests that obfuscate the universal truth for everyone and not just for people in a filter bubble.

Businesses, News providers, social media networks, political actors, and policymakers can consider the provided information to analyse the source of the information gaps and the impact on their operations and policies.

Keywords

Online media; fake news; biased news; news coverage; sentiment analysis; machine learning;

JEL Classification

L82, C45, M10

Introduction

Today many people in the society believe that news are manipulated, biased, tendentious or that the media is not reporting about the most important topics if they should not be disclosed to the public. This phenomenon is global. The American president Donald Trump complains about fake news if the news do not reflect his worldview on climate change. The presidential campaign of Donald Trump is investigated for their use of a very narrow social

media targeting with the help of Cambridge Analytica, a British social media analysis company. Many Germans suspect that the media reporting in Germany regarding the refugee crisis is biased and benevolent to the government and that many crimes committed by asylum seekers are not reported in the news. In the UK many Brexiteers and Remainers accuse each other of lying regarding several topics. One problem of this is that very important political and social discussions are not arising anymore at all, since the parties simply accuse each other of lying and arguments are not heard and accepted anymore. In many countries this culminates in the strengthening of the populist parties and the end of reasoning.

This study focuses on the analysis of online news articles. While there are many more news sources like TV or social media, online news articles are still one of the most important news source for many internet users. Many news articles are also spread through social media and the users do not even need to visit only newspapers.

The online news transport all the sentiments and emotions – either wrong or right – that are discussed in the public. Therefore, those articles are an interesting source to analyze how biased or tendentious the news reports are and what a reader can expect to take home when reading the news.

While there are many fact-checking websites and organizations that focus on the analysis of single news reports or social media posts in a fundamental way of reasoning, this study tries to detect biased and tendentious news in an automated and quantitative way with the help of machine learning. We expect to detect the biasedness of news regarding a certain topic when we compare the sentiments and emotions transported regarding this topic in different news sources. Ideally, the different news sources cover a broad range with many news and include many viewpoints

Many news sources are often slightly biased by definition and intentionally due to the (political) target group and the targeted readership. This is in general not a problem, of course will a newspaper that targets conservatives focuses on different topics and take different viewpoints than a newspaper focusing on democrats. For the mentioned study, this fact still does matter because we want to take a broader focus on the biasedness and the tendentiousness of the whole news available.

To overcome these issues we compared the news across different countries – in our case the UK and Germany – to have broadly based news streams with the news of many viewpoints and target groups included.

With these broadly based news Streams with more than four million news in total we were able to analyze the similarities and the differences between the sentiments in the German and British news regarding several topics. Germany and the UK very often proclaim that they – despite political differences and the Brexit – are a community values. Further the German as well as the British media state that it is objective, no news are deliberately kept secret and that the most important news are delivered in a timely manner.

These working hypotheses – the UK and Germany are a community of values and the media on both countries is in general neutral and objective – lead to the assumption that the online media in both countries should transport similar sentiments for each topic under consideration. If this is not the case, it could be a good indication that the news in one of the countries is biased and tendentious. Further, the media coverage for each of the analyzed topics can be an indication on how prominent the topic was in the media. Big differences in the media coverage can again be a good indication that the news in one of the countries is biased and tendentious.

In this study we analyze the sentiment in the German and British media towards the most important topics in the UK and Germany in the period between Jan. 2010 and March 2019.

Our objective and quantitative approach can help to identify which topics probably have biased and tendentious news. Businesses, news providers, social media networks, political

actors, and policymakers can consider the provided information to analyse the source of the information gaps and the impact on their operations and policies.

Theoretical Foundations

The theoretical foundations of this study are from different disciplines. Computer science provides this study with the foundations of sentiment analysis and information retrieval. Media analysis research gives the foundations for the current state of research of fake news, biased news and tendentious news. The fields of finance and economics contribute several interesting studies regarding the macroeconomic effects of sentiment in the mass media on stock markets or economic indicators.

While the strong current interest about biased and fake news started in 2016 with the election of Donald Trump as the president of the United States, the debate in general started already a long time ago. The following three studies give a good overview on the impact of biased news. The most recent study on the impact of biased news on the presidential election is from Allcott and Gentzkow who present detailed figures on how fake news affected the 2016 election in the United States (Allcott and Gentzkow 2017). An earlier study of Bernhardt et al. demonstrated how the targeting of specific audiences of newspapers lead to polarized and biased news, even if the median ideology is centrist and therefore the median target audience is centrist (Bernhardt et al. 2008). A more similar study to this study shows how the mass media collective coverage of all news significantly influences political outcomes (Luo 2017).

To detect and analyze biased or fake news it is important to define what are actually the characteristics of biased and fake news. This study considers two dimensions as biases: One dimension is the agenda setting of the newspapers, and one dimension the accurateness. This is in line with many other studies regarding validity of media reports. While the media reports might be inaccurate and biased, also the problems that arise from a biased agenda setting – an over or underreporting of events compared to their objective relevance – can have a similar impact than inaccurate, wrong, or fake news. Several studies report the impact and the detection of both dimensions.

The first comprehensive study on the agenda-setting dimension came from McCombs and Shaw who could show that the importance of each event or issue is determined by the presence in the media and probably not by its “objective” relevance (McCombs and Shaw 1972). Snyder and Kelly analyzed the agenda setting problem comprehensively in the context of racial conflicts in the USA. Their model just analyses the probability that events will be reported in newspapers (Snyder and Kelly 1977). While the issue of the agenda setting is known for long, it still is increasingly important today especially in the context of the internet and the filter-bubbles. Maurer released a comprehensive study on the theoretical foundations, methodological approaches, empirical findings and social repercussions of the mass media engaging in agenda setting today (Maurer 2017).

Besides the dimension of the agenda setting which leads to biased news, the second dimension contains the truly wrong, tendentious and fake news. Often those news are hard to grasp as there is a thin line between telling different opinions and the untruth. According to Google Scholar only in 2017 and 2018 more than 13500 studies contain the term fake news. One of the most recognized study is the one Allcott and Gentzkow who present detailed figures on how fake news affected the 2016 election in the United States (Allcott and Gentzkow 2017).

To analyze the news computer-based in an empirical and quantitative way computer science research provides the fundamentals for this study. Since the 2000s computational sentiment analysis is a research area that has grown rapidly; Pang and Lee created one of the first comprehensive studies (Pang and Lee 2008). Sentiment analysis is done today with many machine-learning algorithms, such as Naïve Bayes, artificial neural networks, Support

Vector Machines, Logistic Regression, Conditional Random Fields, etc. Moreover, there are less generic approaches that detect the sentiment with the help of wordlists, n-gram lists, and similar techniques. The most recent comprehensive study on sentiment analysis with machine learning is by Liu (Liu 2015). While there is a vast volume of research in the field of machine learning and sentiment analysis, this study focuses on production-ready and tested algorithms. Several studies show that even simple algorithms perform well enough for this kind of study, with more than 85% correct sentiment predictions (Endres 2003, Domingos and Pazzani 1997, Potts 2011). There have been various efforts in the applied computer science domain to analyze the impact of the sentiment on economic indicators, stocks and financial markets. Zhang et al. report relations between the emotional words Hope, Happy, Fear, Worry, and others and the indices of NASDAQ, S&P500, Dow Jones Industrial and VIX (Zhang et al. 2010). When much hope or fear is uttered on Twitter, the indices tends to plunge the next day. Bollen et al. attempts to forecast the Dow Jones Industrial Index with the help of Twitter (Bollen et al. 2011). Feldman et al. analyze economic news with an algorithm that provides a better and deeper textual understanding (Feldman et al. 2011). Si et al. try to analyze the sentiment on specific topics and aspects, similar to Ren and Hong (Si et al. 2013, Ren and Hong. 2017). This study follows the approach of Starosta et al. and uses a Long Short Term Memory artificial neural network to analyze the sentiment in the media (Starosta et al. 2018a).
Moreover did the finding of Starosta et al. – that some differences in the perceptions could be explained neither by the differences in the coverage nor by a weak coverage in general – provide the impulse to this study (Starosta et al. 2019). If there is in general a broad consensus in the media reporting between the UK and Germany but there are significant outliers there must be some reason for this information gap. The reason for this information gap might be a distorted reporting. This study explicitly targets these information gaps and tries to reveal topic that suffer from distorted media reporting.

Research Question

In contrast to Starosta et al. 2019 this study does not try to explain all differences in the media reporting between the UK and Germany by differences in the coverage of a topic, but by specifically searching for topics with a distorted media reporting.

H1: A similar high presence of a topic in the German and the English media should lead to a similar perception of that topic in the sentiment indices.

H2: If a topic has a similarly high presence in the German and English media, but the sentiment regarding that topic differ greatly, it is due to distorted reporting.

Even though it is difficult to determine whether deviations at the end are actually biased news or only dissenting opinions, this study can give a good indication on where fake news and a distorted reporting lurks. In some cases fundamental reasoning can do the judgement if there are really fake news and in other cases the judgement is up to the reader.

Methodology

For the analysis, a corpus of news between 2010-01-01 and 2019-03-28 with a total number of 469’211 UK news and 1’637’502 German news was retrieved.

The methodology splits up into the four steps:

1. Analyze the most important topics in the observation period
2. Analyze the coverage of these topics in the UK and German media
3. If there is a similar (high) coverage analyze compare the sentiments regarding the identified topics over time

4. If there is high correlation between the sentiment indices hypothesis H1 is validated, if the correlation is weak we are very likely to see a distorted news reporting in one or the other country and hypothesis H2 can be analyzed.

Analysis of Important Topics

The most important terms in the period of observation are determined as proposed in Starosta et al. 2018c. Formula 1 shows how the rank of the terms are generated. The formula assumes that the most important words of the current text are used often in in that text but rarely in all other texts of our corpus.

$$Rank = \tanh\left(\frac{Occurences\ in\ Text}{Number\ of\ words\ in\ Text}\right) - 5 * \tanh\left(\frac{Occurences\ in\ Corpus - Occurences\ in\ Text}{Number\ of\ Words\ in\ Corpus - Number\ of\ Words\ in\ Text} * 200\right) \quad (4)$$

After the identification of the 2000 most important words we analyzed which of these words have the highest number of occurrences in the corpus. The 500 words with the most occurrences where considered for this study.

Analysis of the Coverage

We compare the coverage of the chosen topics between the UK and Germany by simply comparing the share of news mentioning the topic under observation in comparison to the total number of news. We define that a topic has a high coverage in both countries if the topic is mentioned in more than 0.3% of the news.

Creation of Sentiment Indices

The sentiment indices are created based on the methodology of Starosta et al. 2019. The indices are created with a LSTM neural network that analysis the sentiment of each news in the news corpus. These sentiments were then aggregated to sentiment indices that reflect the sentiment over time in the German and British media.

Hypotheses Testing

To verify or falsify the hypothesis, we conducted a correlation analysis between the sentiment indices of the UK and Germany for each topic.

To carry out this analysis, we used the ordinary least squares estimator [OLS], as displayed in Equation (8).

$$y = \beta_0 + Idx_t\beta_1 + \varepsilon \quad (8)$$

where Idx_t is the index data of Equation (7). However, as there are heteroscedasticity and autocorrelations in our time series, and it is not a reasonable approach to create different models for different topics, we used Newey-West standard errors to address the problems that arise with OLS estimators because of the existence of these properties.

To measure the goodness of fit between the British and German sentiment indices for each topic, we used the coefficient of determination adjusted by the degrees of freedom [$Adj\ R^2$].

To verify the H1 hypothesis, the indices should correlate strongly, and we reject the hypotheses H1 if the r < 0.7. If the correlation is weaker (news coverage is high for the topic under observation) we have an indication for a distorted media reporting in one or the other country (H2).

Results

Table 1 shows the results of the analysis. Topics marked with a "^" show which topics have a high media coverage (more than 0.3% of all news report on the topic) in both countries. Topics that are highlighted gray are topics that have a high media coverage in both countries but a lower correlation between the sentiment indices in each country ($r < 0.7$). In these topics hypothesis H1 is rejected and H2 can be analyzed. All other topics that are marked with a "^" and not highlighted in gray verify H1.

Table no. 1 Results

Topic	# of UK News	# of German News	% of UK news	% of German news	r
Apple ^	4658	10345	0.99	0.63	0.99
Bayer	211	7322	0.04	0.45	0.65
Bonds	9354	4481	1.99	0.27	0.99
Brexit ^	12634	6136	2.69	0.37	0.87
Britain ^	10991	6287	2.34	0.38	-0.88
China ^	30512	42643	6.5	2.6	0.97
Debt	22115	6688	4.71	0.41	0.99
Diesel	805	6239	0.17	0.38	0.91
Dollar ^	11291	111856	2.41	6.83	0.88
Draghi	1266	3593	0.27	0.22	0.96
ECB ^	4651	29943	0.99	1.83	0.96
Economy ^	19865	42947	4.23	2.62	0.99
EU ^	23359	72132	4.98	4.41	-0.78
Euro ^	19640	332220	4.19	20.29	0.98
Europe ^	40022	41462	8.53	2.53	0.81
Facebook ^	4057	7126	0.86	0.44	0.94
Fed ^	9404	15439	2	0.94	0.96
France ^	6999	7104	1.49	0.43	0.62
Germany ^	7674	96717	1.64	5.91	-0.89
Glyphosate	30	469	0.01	0.03	0.94
Gold ^	4862	39886	1.04	2.44	0.84
Google ^	4013	19019	0.86	1.16	0.97
Greece ^	5383	19016	1.15	1.16	0.93
IMF ^	2772	5453	0.59	0.33	0.91
Inflation ^	9969	9755	2.12	0.6	0.99
Israel ^	2937	3075	0.63	0.38	-0.98
Italy ^	5291	11214	1.13	0.68	0.63
May (Theresa) ^	71692	67012	15.28	4.09	0.42
Merkel ^	2595	14211	0.55	0.87	0.93
Obama	6842	3025	1.46	0.18	0.13
Oil ^	21121	23199	4.5	1.42	0.44
Refugees ^	1106	455	0.48	0.6	0.81
Russia ^	11391	10778	2.43	0.66	0.19

Snowden	279	358	0.06	0.02	0.3
Spain ^	4285	5933	0.91	0.36	0.39
Trade Balance	56	2002	0.01	0.12	0.94
Trump ^	12183	12343	2.6	0.75	0.63
Ukraine ^	2696	5817	0.57	0.36	0.79
US ^	89503	227187	19.08	13.87	0.93
VW	1020	12862	0.22	0.79	0.88
Washington	4910	4580	1.05	0.28	-0.98

Discussion

The analysis shows that indeed the UK and Germany share the same values on many topics and that in most cases hypothesis H1 is satisfied, if there is a high or moderate media presence in both countries. The topics where H1 is violated but where still a high media presence is and thus H2 is satisfied are indeed controversial. In these cases the media in one country seems to report on an "alternative" truth. It is not possible to evaluate who is right or who is wrong in these cases even if a benchmark indicator might give an indication as discussed in Starosta et al. 2019. The only way to identify the distorted reporting is a substantial analysis of the evaluation topic. Three interesting cases are Israel, Russia and Trump that we found in this study might truly be a biased reporting. The history of WWII could lead Germany to report on Israel in a rather benevolent manner compared to the UK. In addition, the "too" good relationship between Germany and Russia (that is currently criticized by the US) might be reflected in the media. Further, the cases France, Italy, Spain, Germany and EU could probably be explained by the ongoing British aversion to the EU. However, this study cannot and should not provide any further substantial analysis at this point, but it is clear that the news are biased in one or the other of the analyzed countries.

Conclusions

We could show that our approach can consistently find topics with biased and distorted news. These biases have a clear business impact – sometimes on a larger and sometimes on a smaller scale. A billion dollar project like the new natural gas pipeline "North Stream II" between Russia and Germany would probably politically not be possible with a less benevolent media reporting of Russia in the German media. Further, the Brexit might never have been an issue if the media reporting on the EU countries and the EU itself would have been more "German" and friendlier in the UK. Even if this does not explain which media reports are right or wrong, it shows that the economy and all businesses are affected by the media perceptions regardless of whether they are right or wrong. While these are two prominent examples, where a biased media reporting played its part, biased and distorted media reporting also has a big impact on all small and medium size enterprises. In addition to the results of this study, the new approach to find biased media reporting will help to analyze the impact of it on all kinds of businesses and for all topics further.

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ROMANIAN EMPLOYEES' PERCEPTION ON THEIR OWN WORK-LIFE BALANCE – EVIDENCES FROM TOURISM INDUSTRY

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Abstract

The present study aims at identifying how employees in the Romanian tourism industry perceive their own balance between private and professional life. For this purpose, a research was carried out among the employees participating to the Romanian Tourism Fair in November 2017. The data were collected from 126 participants by face-to-face interview. The results of preliminary data analyses reveal that the majority of the respondents were women aged between 18 and 35 years, most of them working in tour operator agencies. Briefly, our research has highlighted that the group of the surveyed professionals declared that they often work either overtime or during their free days (73%) and continue thinking about work problems even when they are at home (about 66%). However, 90% of respondents consider that it is in their power to balance their relationship between professional and private life. This statement is also supported by the idea that managers or colleagues are to a small extent responsible for the imbalance between their private and professional life. Nevertheless, employees declare that they often feel stress due to their job, some of them even presenting health problems (heart disease, hypertension).

Interestingly, the respondents have stated that most organizations have taken measures to balance their employees' work-life report.

Keywords: work-life balance, work satisfaction, work stress, employees, tourism industry

JEL Classification: M54, J28

Introduction

The tourism industry is often presented as requiring a high volume of work, but paid less than the average of other sectors of the economy (Janes & Wisnom, 2010). In general, work-life balance in the tourism industry is perceived as acceptable, according to a study conducted between 2003-2009 by Janes and Wisnom (2010).

Over the past decades, a substantial literature about work-life balance (WLB) has particularly been developed as a result of profound changes within both workplace and family context. The considerable increase in number of couples in which both members work has specially determined both men and women attempt to find solutions in balancing their different and multiple roles.

Within this context, the concept of work-life balance has received an increased attention from researchers (Segovia-Perez, et al., 2019; Wilkens et al., 2018; Vieira et al., 2018; Stier,

Lewin-Epstein & Braun, 2018; Yu et al., 2018; Nassani et al., 2018; Cain, Busser & Kang, 2018; Farmaki, 2018; Wahlberg, Ramalho & Brochado, 2017; Wheatley, 2012; Chiang, Kwan & Birtch, 2010). However, there are still various opinions on the definition and measurement of WLB (Hsieh & Lin, 2010).

The concept of WLB has been globally perceived and often estimated as the interpenetration between work and family (Lin, Wong & Ho, 2015): eg, "How do you feel in balancing work and family life?" (Bednarska, 2013). Other studies refer to the conflict between work time and family time (Yu et al., 2018; Hofmann and Stokburger-Sauer, 2017; Zhao & Ghiselli, 2016; Emerald Group, 2015; Lin, Wong and Ho, 2015; Gamor, Amissah and Boakye, 2014; Wheatley, 2012).

Work-family conflict (WFC) is a type of conflict between roles, in which pressures and demands from the workplace and family are incompatible (Wheatley, 2012). The work-family conflict refers to individuals' difficulties in simultaneously fulfilling different roles in relation to time and limited energy to optimally combine them. The physical and mental health of individuals is assessed and analyzed in relation to work pressure and their feelings of guilt when they do not spend enough time in the family (Hofmann & Stokburger-Sauer, 2017; Emerald Group, 2015; Gamor, Amissah & Boakye, 2014).

1. Literature review

There are many studies in the literature on WLB (work-life balance) referring to it from different perspectives. An ample analyzed perspective is that of the relationships between workplace stressors, employees' adaptive resources to stress and the level of workplace stress they have experienced (Cho & Allen, 2019; Zhao & Ghiselli, 2016; Emerald Group, 2015; Gopinathan & Raman, 2015; Lin, Wong & Ho, 2015; Pookaiyaudom, 2015; O'Neill, 2012; Wheatley, 2012; Chiang, Kwan & Birtch, 2010; Deery & Jago, 2009). The results revealed that increased workplace demands combined with reduced control lead to a higher level of stress (Gopinathan & Raman, 2015).

Possible solutions for stress reduction are: increasing flexible working practices, work from home and access to both paid and unpaid vacation (Deery & Jago, 2009).

WLB aspects in the tourism industry have been extensively researched, according to the following main topics: over-work, stress levels associated with job insecurity, ambiguity of the role, job autonomy and time pressures and psychosomatic symptoms (Segovia-Perez, et al., 2019; Wu, et al., 2019; Nassani, et al., 2018; Farmaki, 2018; Suhartanto, et al., 2018; Wilkens, et al., 2018; Kubickova, Croes & Riviera, 2017; Bredvold & Skalen, 2016; Gopinathan & Raman, 2015; Lin, Wong & Ho, 2015; Gamor, Amissah & Boakye, 2014; Yeh, 2013; O'Neill, 2012).

Other studies aimed at identifying the factors influencing work-family conflict among hotel industry employees (Segovia-Perez et al., 2019; Cho & Allen, 2019; Wilkens, et al., 2018; Vieira, et al., 2018; Cain, Busser & Kang, 2018; Wahlberg, Ramalho & Brochado, 2017; Cahill, et al., 2015; Gamor, Amissah & Boakye, 2014; Lin, Wong & Ho, 2013; Bednarska, 2013).

Other research has emphasized the relationship between work-life balance and emotional intelligence (EI), showing that life experiences contribute to the progress of EI, which then mitigates the imbalance between the professional life and the individual's personal life (Koubova & Buchko, 2013; Hofmann & Stokburger-Sauer, 2017). The level of EI is considered to be essential for improving the work-life balance of an individual, work representing only a component of general satisfaction from this perspective.

The work-life balance is also influenced by gender, as women are able to positively influence it (Segovia-Perez, et al., 2019; Nassani, et al., 2018; Wilkens, et al., 2018; Vieira, et al., 2018; Stier, Lewin-Epstein and Braun, 2018; McMullan, Lapierre & Li, 2018; Yu, et al., 2018; Yeh, 2013; Wheatley, 2012). Men, in general, consider that personal life deserves

to be subordinated to a successful career, choosing to work overtime or even on free days (Cain, Busser & Kang, 2018). Also, top-level managers work very often overtime and feel that sometimes they cannot properly fulfil their role in the family due to work (Kubickova, Croes & Riviera, 2017); on the other hand, non-managerial employees very rarely stay at the workplace overtime.
On the whole, the quality of life in the tourism industry is assessed below the average of other areas of activity (Bednarska, 2013). The content of work, financial compensation, job security, career prospects, leadership, work-life balance and health / safety conditions are perceived as weak points. Compared to the average, the tourism industry has got unfavorable scores in most work environment dimensions, except for peer-to-peer relationships.

2. Research methodology

Our research aims at identifying the main characteristics of the relation between private and professional life of the employees of tourism industry. According to this purpose, the research objectives are: 1 – Identifying the perceptions of employees from Romanian tourism industry regarding the balance between professional and private life; 2 – Finding the organizations' degree of involvement in balancing the professional and private aspects of their employees lives; 3 – Detecting the employees' perception of their stress level.
According to these objectives, a survey was carried out among the employees of tourism companies participating to the Romanian Tourism Fair in November 2017. The data were collected from 126 participants by face-to-face interview. The profile of the respondents is outlined in Tables 1 and 2.

Table no. 1 Respondents' personal profile

Age				
18-25 years	26-35 years	36-45 years	46-55 years	56-65 years
31.7%	46%	16.7%	4.8%	0.8%
Gender				
male		female		
27.8%		72.2%		
Family size				
1 member	2 members	3 members	4 members	5 members or more
23.8%	22.2%	29.4%	23%	1.6%
Education				
secondary school	high-school	post-high-school	undergraduate	postgraduate
0.8%	6.3%	0.8%	71.4%	20.6%

Source: Authors' computation

As highlighted in Table no. 1, most of the respondents are young, 77.7% of them being younger than 36 years old. Only 16.7% of the interviewed are aged between 36 and 45 years old. Moreover, 72.2% of the respondents were women. Most the employees who took part in the survey (29.4%) are part of a 3-member family, while 23% belong to a 4-member family. In terms of the level of education, the majority of the respondents are highly educated, as 71.4% have a bachelor degree and 20.6% have a post-graduate degree.

Table no. 2 Respondents' professional profile

Position occupied					
top-management	middle-management	first level management	specialist	assistant	executive
11.9%	16.7%	11.1%	23%	11.1%	15.9%
independent consultant: 10.3%					
Employer					
state owned-company	private company	mixed ownership corporation			
11.1%	82.5%	6.3%			
Type of employer					
tour operator	retailer travel agency	hotel	other		
49.6%	6.3%	15%	29.1%		
Number of jobs held in the present					
one job	two jobs	three or more jobs			
88.9%	8.7%	2.4%			

Source: Authors' computation

In terms of their professional profile (Table no. 2), 39.7% of the respondents hold managerial positions and 10.3% of the ones interviewed work independently. What's more, 82.5% of the respondents were employed in private-own companies, while 11.1% were working for state-own companies. As regards the type of the company the respondents worked for, the majority (49.6%) were employed in tour operator agencies, while 15% were working in hotels. An interesting fact for the purpose of this research is that almost all of the respondents (88.9%) had but one job at the time of the interview, only 11.1% of those questioned having two or more jobs.

3. Main results and discussion

In this section we are going to present and analyze the main results, according to research objectives.

Regarding the employee's perception of the balance between the private and the professional life, the considered variables were the working program and possibly existing emotional problems as an effect of WLB imbalance.

Fig. no. 1 is emphasizing the tourism employees' perception of the working program. Accordingly, 60% of them appreciate that working program is sometimes affecting the balance between their private and professional life, while 13.5% replied with 'often'. We also have registered 22.2% employees who are never affected by the working program.

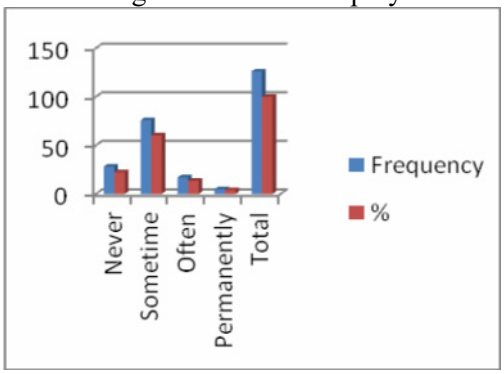

Fig. no. 1 The impact of the work schedule on WLB

Source: Authors' computation

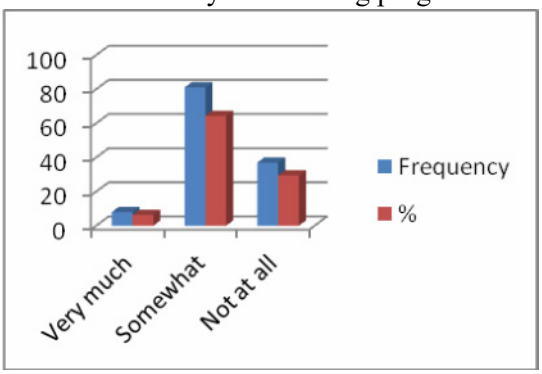

Fig. no. 2 Emotional problems as a result of the imbalance between work and personal life

Source: Authors' computation

Fig. no. 2 is showing the extent to which the employees appreciate that they have emotional problems as a result of the imbalance between their private and professional life. Thus, 64% declare they sometimes meet such problem, but 30% appreciate that they have no problem regarding this aspect.
As for the impact of the inappropriate behavior of the influencing elements (the chef, family and colleagues) on WLB, the results are presented in fig. no. 3.

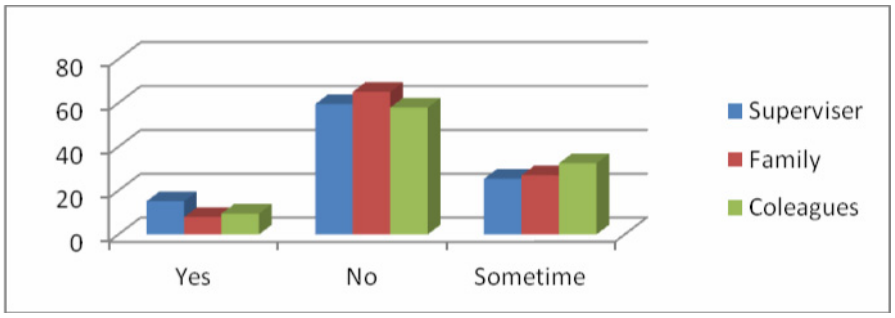

Fig. no. 3 The imbalanced between private and professional life as an effect of the manager's, family and colleague's attitude
Source: Authors' computation

Regarding the implication of the organization into getting the balance between private and professional life of the employees, the most frequently applied measures are: the part-time flexible working programs (34%), the possibility of sharing working responsibilities among colleagues (30.2%) and health-care assistance programs (12.7%).
As for the perceived stress level of the tourism employees, 51.6% of them declare they sometimes feel themselves under stress due to their working place, while 11.9% affirm that they feel permanently under stress. More than that, 13.5% of the respondents state they even have health problems (hypertension, hearth problems).
Table no. 3 shows the main problems of imbalance between private and professional life.
Thus, 35.7% of the respondents often and very often work overtime, while 37.3% only occasionally.
As well, 31.7% often and very often think of the problems connected to their work whenever out of work, while 34.1% just think occasionally. We also have to emphasize that 22.2% of the respondents appreciate that they have often and very often lost the opportunity of spending their time in the family or with their friends due to their working program, while approximately 40% appreciate that they have accidentally missed such opportunities.

Table no. 3 Effect of imbalance over private and professional life (%)

	Very often	Quite often	Occasionally	Rarely	Never
Working overtime	9.5	26.2	37.3	21.4	5.6
Thinking of job outside working hours	7.9	23.8	34.1	29.4	4.8
Losing opportunities to spend time with family / friends	7.1	15.1	38.9	31.7	7.1

Source: Authors' computation

We may appreciate that most of the employees are working overtime, while only 5.6% declared they never do that. Also, only 4.8% of the respondents succeed in completely avoiding the problems concerning their working place as soon as they have finished their

working activity. Within the same tendency, an absolute majority has differently experimented the missing of some opportunities to spend their free time the way they wish, due to their activity at work.

Conclusions

The results of the research have revealed that the employees in tourism are aware of the existing imbalance between the time dedicated to their profession and that connected to their private life, even though most of them are young, aged maximum at 35. We also have to notice that 92% of the respondents are highly educated and approximately 40% are managers, consequently more responsible.

Concerning the first objective of the paper, identifying the employees' perceptions in Romanian tourism industry regarding the balance between professional and private life, the main conclusion is that they may sometimes suffer both the impact of the working program upon WLB and the emotional problems caused by the researched imbalance, the percentage of the respondents who have declared that being approximately of 60% in both situations.

Concerning the organizations' degree of involvement in balancing the professional and private aspects of their employees' lives, the researching results emphasize that most of the organizations are involved in reestablishing the balance by adopting either the flexible working program, or offering part-time jobs.

Jobs are also defined so that they could allow distribution and redistribution of responsibilities among employees when the situation occurs.

Stress is also perceived by most of the respondents, 63% of them showing different levels of stress, either associated, or not with legally stress diseases.

Professional conciliation favored by the employers' intervention hardly exists in employees' replies, just one of them noticing such an attitude.

Consequently, we may admit that the level of imbalance between personal and professional life is not higher among the employees in tourism,; however, countermeasures are not numerous, more complex plans of getting WLB being necessary.

The limits of the present research paper consist in its rather small sample; still, the present paper can be developed to a higher extent, starting from these results relevant enough for this analyzed sector of activity.

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THE CONCEPT OF AUDITOR INDEPENDENCE REVISITED

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Abstract
The paper's objective is to offer a better picture of the complex and controversial condept of auditor independence.It explores the possibility that understanding the concept of auditor independence might be enhanced considerably by drawing out some parallels between the developments in sociological theory and those in auditing. Moreover, we argue that indepedence must be performed by taking into consideration the arena framework. It is neither desirable nor realistic to determine the role of auditing and to analyze financial audit by means of a single audit report from a single auditor. On the contrary, the information that flows from different engagements is important in an arena, depending on what information is made available to other parties. Lastly, there are several metaphors such as independence as separation metaphor, independence as an avoidance of dependence, or independence as an absence of interest. However, the understanding of the concept remains open and debatable.

Keywords
auditing; sociology; interdisciplinary; interactions; metaphors;

JEL Classification
M42, A14

Introduction

The financial audit activity is carried out in a strictly regulated and a highly litigious environment, where it is difficult to find any room for innovation and entrepreneurship. Financial auditors are required by rules and regulations to display professional behavior in all circumstances and to put the interest of the public above all their other potential interests. They must observe a comprehensive regulatory structure, including ethical provisions, so that their activity is rarely seen as a business open to innovation. In fact, few researchers (e.g. Ţurlea and Mocanu, 2010) considered that financial audit is a business like many others. In most research papers, the status of financial audit is strictly differentiated, being considered a profession rather than a business (Cheffers and Pakaluk, 2007).

In its evolution until present days, the audit profession went through difficult times. The accounting scandals from the beginning of our century raised critique upon auditors. There is an extensive body of research that intensively debated on those events (e.g. Carnegie, Napier 2010; Cooper, Neu 2006; McMillan 2004), with significant consequences for the profession in terms of relevant regulatory framework. Moreover, because of the economic and financial "crisis" that started presumably around 2008, auditors were again heavily criticized. Headlines such as "Where were the auditors?" has been one common response of

journalists to recent financial collapses of companies, as if auditors held the responsibility for these failures. This state of facts stirred debates about current auditing practices (e.g. Sikka 2009; Humphrey et al. 2009).
The objective of the present paper is to explore the concept of independence of auditors in a broader context. The paper is structured as follows. First, the arena framework is described and applied in auditing. Second, various metaphors are explained, starting with the most common one – independence as separation. Lastly, we try to put the concept in a different light by discussing it from a sociological perspective.

Independence in an arena context
An arena describes the symbolic location of actions that influence collective decisions or policies. With the help of this metaphor, the process of policy formulation and enforcement in a specific context could be explained (Georgakopoulos and Thomson, 2008). The arena concept does not support the analysis of financial audit at individual (microlevel) or society level (macrolevel), but rather at the meso-level. Moreover, relevant in the analysis are the actions of social groups or individuals that intend to influence collective decisions or policies. An actor succeeds or fails depending on the amount of influence he has been able to exert on the resulting decision or policy (Jaeger et al., 2001). Different actors use money, power, social influence and evidence in order to attain their goals. The final objectives of an actor may be resource accumulation or even the resources themselves (Georgakopoulos and Thomson, 2008). The main elements of an arena in financial audit are described below, bearing in mind their relevance for the independence of the auditor.

(1) Companies. These are audit companies and audited companies. Their power in the arena depends on their size and market share. At present, the audit markets (both the international and the local markets) are dominated by the so-called "Big Four" companies.

(2) Rule enforcers. These are particularly important since financial audit is highly regulated. First of all, as professionals, auditors belong to a professional body, which ensures that all relevant rules and regulations are observed. The influence of rule enforcers is significant, since infringing the regulatory requirements leads to disqualification as professional.

(3) Political institutions. The government, the public finance ministry and other country-specific political institutions are also important actors in an arena. Their objectives may vary widely, starting with the aim for a working economy and ending with the collection of taxes from companies. Their influence is also critical within the arena.

(4) Stakeholders. Rubenstein (1986), cited by Porter (2009) classifies stakeholders from the perspective of the company's managers as follows: (1) Input stakeholders – employees, owners, suppliers and creditors; (2) Output stakeholders – consumers, distributors and users of the company's product or services; (3) Environment stakeholders – the community and local and central government.

(5) Issue amplifiers. As in other areas of activity, the issue amplifiers are the media. Media is the one that sheds light upon accounting scandals. Its influence is greater than initially thought, since as consequence of the immoral acts of professional accountants (auditors), the perception of the public and other stakeholders on the professionalism of auditors in general and in particular may change and may even lead to a change in rules.

(6) General public. The general public is the audience of the issue amplifiers. The public comprises simple citizens, in their position as consumers or employees. They cannot be directly influenced by auditors. However, these could be the "anonymous" voice that highlights issues and drives changes in the arena.

Main metaphors of auditor independence

Independence as separation. The most frequently used metaphor that structures the language about independence of the financial auditor can be formulated, according to Reiter (2004), as follows: "Independence is separation". This metaphor originates in the separative model or ethics of rights perspective and forms the basis for the discussions on auditor independence. The separation metaphor is strongly related to the morality of rights or justice, which is formal, abstract, and emphasizes universal abstract principles (Reiter, 2004). Cole and Coultrap-McQuin, cited by Reiter, state that "the ethics of rights emphasizes detachment, impersonality, objectivity, and individual autonomy at the expense of attachment, particularity, emotion, and intersubjectivity" (Reiter, 2004). Within this ethical framework, human beings are considered autonomous and immune to social influences.

Independence as an avoidance of dependence. The main flaw of this "independence is separation" metaphor is that it does not take into consideration an essential fact: financial auditors do work within relationships (relationships to the client's management, its accounting department, other experts, former auditors, regulators, other competing professionals, as well as within a social and cultural environment). According to Wallmann, cited by Reiter (Reiter, 2004), it is very difficult for the financial auditor to conceiving of how to have independence (i.e., no relationship) within a relationship. In his opinion, it would be much easier to imagine the characteristics of an inappropriately dependent relationship. In fact, there is obviously some degree of dependency in all relationships of the auditor. Mautz and Sharaf, cited by Gray and Manson (2005), stated that "auditing, unfortunately, does not have any 'built-in' characteristics that assure the skeptic of its integrity and independence". On the contrary, "auditing suffers from what may be described as 'built-in anti-independence factors'", since the auditor's fees are paid by the client's management. Therefore, Wallmann proposes a focus on "avoiding dependence".

Independence as an absence of interests. Another perspective on auditor independence is offered by Elliott and Jacobson (1992), who define independence as a matter of interests. They state that "the auditor should have no interest in the financial statements except their reliability" (Elliott and Jacobson, 1992). The definition offered by Elliott and Jacobson is, according to Reiter (2004): "audit independence is an absence of interests that create an unacceptable risk of material bias with respect to the reliability of financial statements". Moreover, in defining independence, Elliott and Jacobson radically separate this concept from those of integrity and objectivity, which they consider to be personal qualities of the financial auditor.

Independence as an ideal. Auditor independence may be considered up to a certain point idealized. This utopist perspective on independence originates in its role in legitimating the profession. The social contract, namely the contract of the auditor with the society in general implies certain requirement. The professional group of financial auditors must continuously legitimate their status and justify public trust in them, whereas independence is a key in fulfilling this aim. R.W. Bartlett (1991) suggested that every time the independence concept is put into question, a series of semi-spiritual incantations are recited with fervor. According to Bartlett (1991) and Baker (2005), the "ceremony" of auditing consists of four kinds of "incantations" regarding auditor independence used as counter-arguments when the logic of independence is doubted:

- *The "smoking gun".* Due to the difficulties in assessing an intangible quality of the auditor such as independence, most lawsuits and prosecutions have been based on assertions of incompetence or lack of due diligence in the application of auditing standards, rather than lack of independence.

- *"We are doing pretty good."* This incantation is based on public opinion surveys, which show that certified public accountants are highly respected and are perceived to be ethical. However, the public may not be well informed about what auditors do and the meaning of "independence" may be unclear to the general public.
- *The "public good."* This incantation suggests that the existence of too many constraints on the public accounting profession's scope of services leads to inability to serve clients properly, thereby incurring costs to the public. On one hand, some considered that management advisory services have a positive impact on auditing, because they offer a better understanding of the client's systems. However, many think that independence in appearance is difficult to attain in this circumstance, since it is difficult for the public to believe in the objectivity of the auditor's opinion on a system designed by the auditor him or herself.
- *"Trust us."* The main assumption is that auditors constantly have in view the costs and benefits associated with ethical behavior and chose to behave ethically since this decision leads to the greatest long-term economic benefit. The "trust us" argument might be undermined by the fact that sometimes, individual economic calculus of a particular auditor may actually encourage the auditor to retain an important client, rather than maintain objectivity and independence.

Independence from a sociological perspective

Financial auditing and the functionalist perspective. Researchers, as well as practitioners in the field of financial auditing, frequently state that the ultimate goal of financial auditing is trust at the market place (e.g. Cheffers, Pakaluk 2007, 39). The basic underlying assumption in this analysis is that the society is a set of interdependent parts, a system that strives for stability. The social situation is financial auditing, to be analyzed within a wider social institution called "market economy". The main function of financial audit is to offer credibility to the financial statements of the audited companies by issuing an opinion on whether they present fairly, in all material respects, the financial position and performance of that company, in accordance with a certain financial reporting framework. The sole fact that an auditor examines financial statements of a company makes them credible to lenders, investors and other stakeholders. Therefore, the main function of financial audit is to meet the need for trust in the market economy.

Financial auditing and the conflict perspective. Researchers, as well as practitioners in the field of financial auditing repeatedly stated, explicitly or implicitly, that the auditor's decision-making process takes place in a conflict-driven environment (e.g. Arnold, Collier, Leech, and Sutton, 2001). First of all, as Goldman and Barlev claim, the client organization (management and shareholders) may strive for power and control over the outcome of the financial auditing process. It is said that the cause of this conflict between a financial auditor and a client organization resides in fact that the truthful audit report collides with the interests of management or shareholders or both groups. The main source of power for management and/or shareholders resides in the fact that a client organization is the one that mandates and remunerates the financial auditor. Another possible conflict that is frequently cited in the literature is the conflict between managers and shareholders (Gray and Manson, 2005). Managers may wish to mislead shareholders, even if only in a short term. Last but not least, a client organization may wish to deceive outside providers of finance (such as lenders) regarding its position, in order to increase the probability to receive further financing, although this may not be in the best interest of a third party.

Financial auditing and the interactionist perspective. Researchers, as well as practitioners, claim that a financial auditor does not exert his/her profession in a social vacuum. The debates on this issue are mainly related to the ethical requirement of auditor independence. The basic underlying assumption in this analysis is that societies and persons in them are guided by the way they define and interpret events, behaviors etc. The social situation to be analyzed from this perspective is financial auditing, defined by the Oxford Dictionary of Business and Management as "an independent examination of, and the subsequent expression of opinion on the financial statements of an organization. This involves the auditors in collecting evidence by means of compliance tests (tests of control) and substantive tests (tests of detail)". Consequently, the idea of independence is inherently related to the very definition of financial auditor.

Conclusions

The present paper discussed the concept of independence, which still remains controversial. The main metaphor related to independence, namely “independence is separation” does not satisfy the need of the professionals to understand how to speak, think, and act in relation to independence. Alternative metaphors such as “independence as lack of dependence”, “independence as matter of interests” and “independence for legitimating the profession” could be possible solutions to the problem of independence.

Additionally, we explored three sociological perspectives on financial audit, which offer a better understanding of the auditing profession. From the functionalist perspective, financial audit represents a functional part of the system called "market economy" and meets a vital need – the need for trust at the market place. From the conflict perspective, the financial audit process takes place in a conflict-driven environment, with the following potential areas of conflict: between an auditor and a client organization (management and shareholders), between management and shareholders, and between an audited company and its lenders. From the interactionist perspective, a financial auditor does not live in a social vacuum, thus the metaphor "independence is separation" is apparently inappropriate.

This is the reason why the analysis of independence needs to be made taking into consideration the arena framework, which facilitates the understanding of financial audit. The role of auditing cannot possibly be determined by analyzing a single audit report from a single auditor. The information that flows from and within various audit engagements is essential in an arena, where it may be that each party receives different pieces of information regarding the financial audit activity. This conclusion conforms to reality, since multiple parties of the audit environment may usually influence decisions, even slightly. In conclusion, the debates on auditor independence remain open.

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ROMANIAN CONSUMERS' CONSUMPTION OF GREEN PRODUCTS

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Abstract
To be or not to be green? Becoming a green consumer is a matter of sustainability, which means be able to live without exhausting the resources available and without destroying the environment, without compromising the possibilities of meeting the needs of the next generations. Ours study proposes a three-month longitudinal analysis of the consumption of 80 families (40 of them with children up to 14 years, and 40 without children) from the eight Romanian counties, in order to identify the extent to which their consumption is green. As an exploratory research, the selection of panel respondents could be done non-randomly, using the snowball method. Responses were collected weekly and were provided in each family case by the main decider for food purchasing. For each of the 10 categories of food analyzed, the research provides information regarding: the main recipients of consumption, the share of green in all the consumed food, the source of the green food, motivations and purchasing criteria for green food.

Keywords
green/organic/bio products, green consumers, longitudinal study, panel

JEL Classification
D13, Q56, Q57, R21

Introduction

A proverb says "we are what we eat". Maybe for this reason many of the Romanian people have begun to be more careful about what they consume. Gradually, as environmental problems grew, the awareness of the need to protect and preserve the environment grew, society turning to a greener world.
The green word has in the mind of the consumer an association with ecology, environment and social responsibility. Bio, organic or ecological terms are used in different countries to designate the same concept. The 'ecological' term used in Germany, Spain and the Nordic countries speaking Danish is the same as the 'bio' term used by French, Italian, Portuguese and Dutch, and the 'organic' used in English-speaking countries. But very common are the cases where words such as 'natural' and 'traditional' are used, with different meanings.
Starting in June 2010, all green products produced in EU countries must be labeled with the leaf with those 12 stars of the European Union on a green background and be accompanied by a quality certificate (Dinu, V. et al., 2012 & Ahmad, J. et al., 2012). On the green label,

the name and address of the manufacturer or processor must be mentioned, the product name, including the green production method used, the name and mark of the inspection and certification body.
Consumers of these products are aware that 'green' means also being in harmony with the environment, not just having a diet more suited to your metabolism. The consumer of green products is different from the ordinary consumer because it takes into account the needs of all people when it comes to the green product.
In promoting green products, it is preferable for the consumer to identify keywords such as natural, environmentally friendly, recyclable, and biodegradable, without adverse environmental effects. Those who consume green products are generally elderly people and people with higher studies and those who consume the smallest green products are unemployed, artisans and farmers (Chiran, A. et al., 2007).
And because there are green consumers, there also has to be a green marketing, which

Literature Review
According to a survey conducted in 2007 by Rackspace Managed Hosting quoted by the Ecomagazin, companies are increasingly worried about the effects their products and services have on the environment and for this reason they are willing to invest a lot more in their greening. Survey findings show that over 50% of the 400 consumers investigated would agree to take out 5% to 10% more from their wallets for green products and services. Only 75% of consumers surveyed would choose a green product instead of one that is not green, as the price would remain unchanged.
The International Institute for Sustainable Development published in 2013 a report describing green consumers, according to which the vast majority would agree to pay more for green products and 7 out of 10 consumers are willing to pay even up to 20% more. Only 1 out of 10 respondents said that under no circumstances would they pay more for them. On the other hand, the survey shows that respondents support companies that promote environmental friendly practices. A profile of current buyers of green products shows that they are female, aged 30-45, with children and having a higher level of available income. This research has shown that the main factor in purchasing green food is the level of consumer's personal income. It seems to be a distinction between those who claim to be interested in the environment and those who regularly buy green products.
Another study (Aertsens et al, 2009) highlights the impact of the emotional component of attitude on the decision to consume green food. Green food consumption decisions can be explained by referring to the attributes of green food with multiple abstract values such as security, hedonism, universality, goodwill, stimulation, self-direction and compliance. Calling on these values can positively influence attitudes towards eating green food.
A comparative study between UK and Denmark (Wier, M et al, 2008) identified the main differences and similarities. Emphasis was focuses in particular on consumers' perceptions and priorities, labeling systems and sales channels as a basis for assessing market stability and prospects for future economic growth. Most green food on both markets is produced and processed by large-scale industrialized units and distributed through mass-market channels, and consumer confidence is currently supported by eco-labeling schemes that seem to work well. However, a parallel market, based on the delivery of goods through various channels of direct sales to heavy users, prevails. The purchasing decisions for green food is primarily motivated by attributes such as: freshness, taste and health benefits, attributes that can be perceived as compatible with modern production and sales structure. However, mature markets for green food appear to be vulnerable to consumer dissatisfaction, especially among heavy users of green products.
The 2008 crisis did not affect the consumption of green food. Manget, J. et al (2009) and Montesi, C. et al (2014) have shown that even in times of economic crisis, consumers

remain interested in green products and services, aware of their benefits to the personal budget and the environment. In order to evaluate green purchasing attitudes and behaviors, the research surveyed 9,000 subjects, ages 18 to 65, from nine countries (Germany, the United States, Canada, the United Kingdom, Spain, France, Italy, Japan and China). Consumers in these countries greatly appreciate the direct benefits that green products offer such as freshness and taste, the promise of security and health, but also the savings made on energy costs, even though the crisis has already occurred.

Romanian consumers of green products and services

According to Paglea & Vlad Uta (2012), they claim that the widespread green trend at the international level is barely beginning to develop in Romania. According to their results, green products are perceived as healthier, more environmentally friendly, and tastier. People with middle and high incomes are more likely to read the entire product label consistently. People with higher education are more likely to buy green products at least for testing. Women are more likely to buy green products because of their views on culture, future and social issues, as well as their interest in work, family and diet.

Following a survey for Green Report and conducted by Daedalus Consulting, Romanians have green spirit only if they have personal benefits from protecting the environment. Although they say they would be willing to take more money out of pockets for green products, practice proves the opposite. Regarding the willingness of Romanians to spend money on green products, 73.1% of respondents said they would be willing to pay more for green food grown without chemical fertilizers and pesticides, 49.1% would agree to pay more for renewable energy, and 36.3% would pay more for products with biodegradable components. To consume green products, an average of 30% of respondents said they would pay that extra money for renewable energy, 28.3% for biodegradable products and 25.8% for organic food. Among the phenomena that have a strong impact on the environment, the Romanians atmospheric pollution (84.3%), forest deforestation (84.1%), genetically modified food (77.3%), industrial pollution, drought and floods or the thinning of the ozone layer (by over 72%).

The first action in the top of the environmental protection activities that the Romanians have taken or will take, is to maintain the green space in front of the house; the second action is the purchase of economic bulbs, the reuse of plastic bags, reducing paper consumption, planting trees and shrubs, using public transport vehicles to the detriment of personal cars, recycling paper and glass and using products with returnable packaging.

Longitudinal study regarding the green consumption in eight Romanian Counties

The aim of the research is to do a comparative study of the behavior of purchasing and consumption of green food among 80 families (ten from each of the eight counties the Eastern part of Romania: Bacau, Botosani, Galati, Iasi, Neamt, Suceava, Vaslui and Vrancea), domiciled in the county residence-towns. Families are from the same generation, the Y generation, and supply food 2-3 times a week, especially at the end of it. Half of them have children up to 14 years of age, with the rest of families not having children. The study is not descriptive, the purpose being exploratory.

The overall objective is to identify the behavior of purchasing and consuming green food among the 80 families.

The specific objectives are:

O1. Determining the perception regarding green products, highlighted distinctly according to the respondent's gender;

O2. Identifying the motivation to buy and consume green goods for each of the two spouses, both husband and wife;

O3. Establishing the green consumer receiver for each family member;

O4. Measuring the real consumption of green food by respondent categories;
O5. Identifying the food groups of the green products consumed;
O6. Identifying sources of green food supply;
O7. Assessing the expected benefits of consumers from green food.

Two research methods were used to achieve these objectives: one quantitative and one qualitative. Firstly, a longitudinal study for a three-month period was conceived, represented by a survey of a panel of respondents reporting weekly data on their own consumption. Subsequently, a semi-structured in-depth interview was conducted with the family member in charge of the food purchase decision to analyze the data from their own consumption, respectively to identify intentions about future consumption.

The panel was designed to gather data on the green food consumption of the 80 families, as well as data on demographic characteristics and motivational factors such as environmental and health concerns that may have an impact on food consumption. Other issues that we've been tracking are related to the provenance and destination of products, the location of sales points where green consumers supply, and the preferences of the 80 families for certain food stores and categories. Responses were recorded weekly, based on their bills and shopping logs, in a database presenting the food consumed for 3 months.

The sampling method used is non-probabilistic, intentional. Taking into account that families that have to meet the characteristics considered in this study are difficult to approach or to find, a selection of subjects was chosen based on the snowball method. The target population consists of female and male from the Y Generation, married couples. This generation includes people born between 1980 and 2000, sometimes called Gen Y, Millennial Generation or simply Millennials. The Y Generation members are more trustful and tolerant than many of their parents, ambitious, competitive, and driven by the desire to make a difference. In addition, this generation is supportive of social causes and socially responsible companies.

The weekly green and conventional food purchases of the following food groups were recorded in the Excel database:

C1. Meat, fish, with the following subcategories: pork; beef; chicken; other types of meat; organs; bones; sausage; meat products; seafood; fish dishes.
C2. Eggs
C3. Milk and dairy products: milk; acid dairy products; cheese; sour cream; dairy desserts; other dairy products.
C4. Cans and semi-prepared dishes: canned meat; canned fish; canned meat and vegetables; canned vegetables; pickles; canned fruits; fruit compotes; other preserves and semi-prepared meals.
C5. Vegetables and fruits: fresh vegetables; fresh fruits; frozen vegetables; frozen fruits; dehydrated vegetables; dehydrated fruits; fresh leaves; mushrooms; other vegetables and fruits.
C6. Cereals, derived from cereals: cereals; bread; bakery products; pasta; pastry; breakfast cereals; other cereal derivatives.
C7. Honey and sugary products: honey; sugar and fruit products; chocolate; confectionery; candy and caramels; gum; halva; ice cream; other sugary products.
C8. Oils and Fats: Oil; butter; margarine; lard; vegetable whipped cream; other fats.
C9. Chips, snacks and oleaginous fruits: chips; snacks; fried corn; oleaginous fruits; others.
C10. Spices, flavorings and sweeteners: spices; dry leaves; sauces; vinegar; flavoring; sweeteners; others.

In addition to the weekly shopping cart data, we also considered the provenance of the products (the place where the products were purchased: stores, market or obtained from their own production, received, sent from parents, grandparents, etc.), the destination (which member of the family consumes that product more than 50%) and the share of green

products in total purchases. All weekly purchases were reported to the operator who entered them into the Excel database (as shown in table no. 1). Each family retained their weekly shopping bills receipts or completed a shopping log, after which the operator collected all of these data at regular intervals - after each weekend, on a day set by mutual agreement with each family.

Table no. 1 Database example

Food Products Group						
Milk and Dairy Products						
Product	**Quantity (Kg/ L/ Piece)**	**Of which green**	**Provenance**	**Of which green**	**Destination**	**Of which green**
...	...		...		...	

Source: Data from this research

In the selective survey, and then, after the three months of research have been completed, the subjects were asked what kind of consumers they consider to be part of, their answers being compared, to analyze whether changes in perceptions on their own green consumption behavior. At the same time, we also aimed to identify the indirect influences of the study on the spouses' behavior and purchase behavior over the three months of collaboration.
We noticed the differences between respondents' answers before and after the actual research. If, initially, male respondents stated that only 30% of them were medium consumers, at the end of the months of the investigation, the responses changed, with 50% of the respondents becoming medium and the rest of the consumer's light. In both cases, men and women, there were no heavy consumers before, but, at the end, women who, although originally classified as average consumers at 60%, and 40% light consumers, said that 18% of them considered themselves heavy consumers after the research. Meanwhile, men remained without any heavy consumer.
We define heavy consumers as consumers with more than 50% of the volume of green products consumed (for all types of food), medium consumers with a volume of green products consumed between 20% and 50%, light or low consumers are those with a share of the volume of green food consumed less than 10% and non-consumers on those who do not eat any green food.

Table no. 2 Green purchases classified by food groups* and types of families (%)

Food Products Group	Families without children			Families with children		
	Light user	Medium user	Heavy user	Light user	Medium user	Heavy user
C1	10,5			6,6		
C2		30,9			46,6	
C3	12,5				48,2	
C4	19,3				31,4	
C5	0,8			8,1		
C6	2,8			8,8		
C7	3,6			3,2		
C8						
C9		21,9			23,6	
C10	8,9					

**The ten food groups included in the survey are numbered from C1 to C10, as mentioned before.*
Source: Data from this research

There are no big differences on the topic of the respondent's residence counties. Most differences appear between the two categories of families: with or without children (Table no. 2). It seems that the presence of children leads to increased consumption of green products. From the point of view of the source of these green food, the results are presented in the following table (Table no. 3):

Table no. 3 Source of green food consumption (%)

Food Products Group	Families without children					Families with children			
	Stores	Market	Self-Product	Gift		Stores	Market	Self-Product	Gift
C1	32,1			67,9		11,9	31,7		56,4
C2				100			17,3	43,4	39,3
C3	11,7	2,18		86,3			57,7		42,3
C4			23,9	76,1				73	27
C5			50	50		22,5	35,2	21,2	21,1
C6	27,5			72,5		32,4	22,5	15,8	29,3
C7			21,6	78,4			44,4		55,6
C8									
C9	27,9			72,1			45,7		54,3
C10				100					100

Source: Data from this research

Most of the green food consumed by the families in the sample were "gifted" by parents and grandparents. It seems they constantly receive traditional food from parents and grandparents, food that cost much more, are not found or are not tasty like "just like mom makes it". On the second place, stores, especially supermarkets and hypermarkets, are among the top stores for green food, because here is a wide range of products, but at more favorable prices than green-goods stores. With respect to the amount of green food consumed by each family member, table no. 4 is presenting each food group:

Table no. 4 Destination of green products consumed (%)

Food Products Group	Families without children				Families with children			
	> 50%				> 50%			
	Husband	Wife	Family		Children	Husband	Wife	Family
C1	19,3	12,8	67,99					100
C2			100		17,9			82,1
C3		40,6	59,6		3,8		9,3	86,9
C4	18,4		81,6		34		17	49
C5	10	40	50		12,6		23,2	64,2
C6		30	70				12,2	87,8
C7			100					100
C8								
C9		32,3	67,7				47,8	52,2
C10			100					

Source: Data from this research

According to our findings, women consume more green food than men, especially when it comes to oil fruits such as nuts, peanuts, almonds, seeds; cereals; vegetables and fruits, but

also milk and dairy products. Men can brag about eating green meat and fish, but also canned and cooked vegetables, fruits and vegetables.
In the process of purchasing green products, women are more prone to freshness, nutritional quality, safety, environmental protection and prevention of premature aging, as opposed to men, which are guided by the lack of pollutants, animal protection, positive self-image and identity.
By discussing the motivation to buy and consume green food, the main reasons people eat green are: physical and mental health, nature protection, spiritual satisfaction, healing diseases/diets. The hindrances to their more active green consumption are: too high a price, lack of information, low promotion, and distrust.
Regarding the attributes of green products, the subjects said they have a relatively high price, protect the environment, give some safety, taste better than normal, are healthier, fresher and give a positive self-image. Among the ways that subjects use to recognize a green product, the most used option is reading the label to see if the green leaf is the symbol of these products. Not all respondents trust the label, being reluctant to buy industrialized green products. Other options are face-to-face discussions with the manufacturer/trader and analysis. The tasting and smelling of the product are not very well agreed by the respondents, saying that these two methods are not effective in recognizing a green product.
Speaking openly, in the in-depth interview about the changes that have occurred in the green behavior of families, we learned that they were more attentive to what they had consumed as a result of participating in this research, the operator's influence being exercised, a great deal for women and to a lesser extent for men.
As with all market studies, current research cannot completely eliminate the risks. The limits of this research are:

- During the three months of research, it was not verified whether distortions in the purchasing behavior of the subjects arose because they knew they were part of a research, this verification being carried out at the end of the research;
- The short research period of only three months;
- Difficulties in collecting data (postponement of weekly meetings, repeated delays);
- The accuracy of the answers cannot be verified. Information provided by respondents may be erroneous or unscientific, resulting in untrue results;
- The intentional non-probabilistic sampling method is a subjective one, not allowing direct generalizations;
- Exploratory research has the effect of forming small, unrepresentative samples.

Conclusions

The popularity of green food is steadily rising. Supermarkets in the post-industrial world compete with each other to provide more food that was manufactured without the addition of synthetic chemicals and fertilizers.
In the context of the economic situation in Romania, being a green consumer is a luxury for a large part of the population. Considering that when buying green products and adopting green behavior, the benefits are seen in the long run, so most consumers still choose traditional products, depending on the price and the immediate benefits.
Research has shown that most of the green food consumed are not industrialized, they do not come from supermarkets, hypermarkets or specialist stores, but from their own households, parents, grandparents or are bought in the markets. Romanians do not trust the big commercial chains, but they turn to peasants, small entrepreneurs or acquaintances for green products.
Although efforts are being made to educate consumers, they still make confusions between terms that define the same concept: bio, ecological, organic. All of the eighty families surveyed called for the exact definition of the green term, which was nevertheless intended

to be achieved. Interestingly, however, is the phenomenon: ignorance or vague knowledge of a concept, perhaps, known.

Differences between respondents' answers from different counties were insignificant, perhaps due to the fact that people from major cities were investigated. The most serious differences were registered between families with children and those without children, which suggests that the appearance of a child raises the awareness of the couple about the importance of a healthy diet, respectively the consequences of their own consumption.

The research can serve as a support for possible developments, with the possibility of being successfully used in the future, as a suggestion to extend the geographical area included in the study at national level or in different environments (rural/urban) to see the extent to which the results are confirmed.

As a general conclusion, it can be seen that in Romania consumers are not familiar with the notion of green consumption, which requires many improvements to the level of information of the general public, to protect the environment and to extend the life of the planet. Here comes in the interdisciplinary education, which is an extremely powerful means in the development of green orientation. The major problem is that this process will take many years to change the habits of individuals.

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WILL THE NEW BRIDGE OVER DANUBE CREATE A TOURISM SUSTAINABLE HUB IN THE URBAN AREA OF BRĂILA-GALAȚI-MĂCIN?

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Abstract
The biggest infrastructure project which Romania has seen in the last 3 decades, a project of an EU-approved budget of EUR 435 million: a new suspension bridge of 2 km long over the Danube is estimated to be build up by an Italian - Japanese joint venture within the next 4 years. The cities situated near the bridge, Brăila and Galați on the left side and Măcin on the right side of the river, will be the biggest beneficiaries of the investment, but development opportunities and the environmental impact on this area can only be estimated. The aim of this paper is to analyse, starting from the historical development of these cities, their actual socio-economic situation and their tourism capacity and potential, the chances for creating a tourism sustainable hub. The overall evaluation indicates that the creation of a tourism sustainable hub in the urban area of Brăila - Galați - Măcin can be a realistic approach if the tourism development is targeted as the main goal by the local authorities and an adequate strategy is elaborated and applied for all these cities and the surrounding area, as long as the bridge is only a part of the infrastructure that need to be created in the region.

Keywords
urban tourism, sustainable hub, port cities, bridge

JEL Classification
Z32; O18

Introduction

The international literature concerning sustainable development has few references related to the tourism hub and to the benefits that building strategic bridges generates over a city or a region. The sustainable development has for the first time in the cases of the cities, the first standalone goal, which is "to make cities and human settlements inclusive, safe, resilient, and sustainable" (Klopp & Petretta, 2017). While many authors focused on the idea that cities are the engine of sustainable development, we developed the paper around the idea that the tourism sustainable development can be in the case of harbour neighbour cities with a tumultuous history, the factor of relaunch of their prosperity in the context of major political changes that created a new socio-economic reality. The notion of tourism hub was defined by Yeoh and Chang and highlighted by Tan et al. as a "primal node" that generates but also benefits from the tourism flow. (Yeoh & Chang, 2001; Tan et. al, 2001). A tourism sustainable hub is in our acceptation one which combines and capitalizes the tourism opportunities offered by a group of neighbour cities that targets the tourism as the

main economic sector and develops its infrastructure in a manner in which makes optimal use of the hub area environmental resources, promotes but also protects its socio-cultural identity and generates economic prosperity.
This paper presupposes that the impact of building a strategic bridge over Danube, near Brăila will emerge a tourism sustainable hub, using several arguments: the existence of a "symbiotic relationship" (Ajagunna et al., 2017), between tourism development and logistic development; as most port cities (Girard, 2013), Brăila, Galați and Măcin have a particular development potential based on their historic urban landscape; the development of the tourism infrastructure in the area will create the conditions to increase the internal and international tourism flow; Galați and Brăila are the last maritime cities on the Danube and the sustainable development of these cities will include them in the maritime and fluvial tourism routes; for tourists, the bridge will be the best road connection between the mountain and hill part of the North and the South East Romanian Regions of Development with the Danube Delta and the Black Sea, and the best option for a short city break accommodation.
This paper aims to be a starting point for the analysis of this investment impact in the region and a support for the local and national authorities in developing an urban tourism policy for this area. It starts with a review (Section 1) of the different theories related with urban sustainable tourism development and the key pillars of it. Section 2 is a description of the methodology used in order to formulate the results from the Sections 3, and to generate the discussions from the Section 4. The results and discussions targets the tourism sustainable development of the urban area of Brăila-Galați-Măcin, starting with the evaluation of the current tourism capacity and ending with the prospects related with future of the urban tourism in the context of the bridge construction. The last section is dedicated to the final conclusions.

2. Materials and Methods

2.1. Study Area

Brăila is a port city located in a high terrace, of over 200,000 inhabitants. Brăila's Centre was built in the late 19th and early 20th century and is declared historic monument, since it contains invaluable architectural buildings situated on streets arranged in the form of concentric semicircles starting and ending at the Danube. The city went through different stages of development. The modern period of the city started with the treaty of Adrianople of 14 September 1829, which put an end to the Russian - Turkish war of 1828-1829 and made possible the return of this fortress from the direct administration of the Ottoman Empire as a Raya, to the Romanian territories after 289 years (Pricop, 2006).The status of free trade port gained in 1836 (Ardeleanu, 2008) made possible the development of the harbour and the multiplying of the number of commercial vessels from hundreds to thousands per year. At the end of the 19th century, one third of the all Romanian exports went through this port. Houses of the Jewish, Greek, Bulgarian, Italian or Armenian merchants flourished in the city of the time. The socialist regime installed in 1944 has meant powerful industrialization of the city with thousands of people working in the chemical and machine building industry. These industries gradually disappeared after 1990, and the city life started to depend on public jobs and the foods and incomes seasonal gained from agriculture.
Galaţi is a port situated in the north of Brăila, at a distance of 22 km, with a population of over 300,000 inhabitants. Similar to Brăila, Galaţi is the capital city of a county with the same name: Galaţi County. The city has a strategic position on the Danube, located close to the Romanian border with Moldova and Ukraine. If in Brăila the number of the workers involved in the production of excavators has decreased from 13,000 (before 1990) to around 500 in 2016, in Galaţi the steel mill still involved around 6,000 workers in 2016 (Romanian

Ministry of Finance), from around 17,000 in 2005 and over 40,000 before 1990, when the Galați Steel Plant was the biggest enterprise in Europa (Anonymous, 2011). Galaţi has a well-developed economic and cultural life and the migration of the population is not as high as it is in Brăila. Galaţi has the advantage of belonging to the private and public university network. Even if cruise ships pass through Galaţi from Vienna to Constanţa, the actual tourism infrastructure is not attractive enough for the Danube tourism operators and the tourists spend only several hours in the port area.
Măcin is the smallest city of this triangle, with less than 11,000 inhabitants, situated in the Tulcea County. The town is the only one of the three that is not a county capital. It emerged on an ancient Celtic settlement, Arrubium (Town Hall of Măcin). The mining of granite rocks from the Măcin Mountains has a long tradition in the neighbourhoods of the city. The industrial activity in the town is related to textile and clothing manufacturing. Even if the town and its suburbs have beautiful visiting places of interest, the tourism is almost inexistent, due to the isolation of the city. The daily connection over the Danube with Brăila and Galaţi is done by ferry and it is often hampered in the winter by the weather conditions.

2.2. Data Collection

In this paper we use data related with the bridge construction provided by the (Romanian) National Company for Administration of Road Infrastructure, data related to the tourism evolution for the cities Brăila and Galați, as well as the town of Măcin provided by the (Romanian) National Institute of Statistics. We choose some key years, in order to show the evolution of the main tourist accommodation sector indicators for these cities. The first available data (1990) after the change of the political system in December 1989, the year of Romania's accession to the EU (2007), and the last year of available data (2016).

2.3. Methodology

The tourism dynamic can be evaluated using quantitative analysis and quantitative methods. For this study we use basic quantitative analysis, since the tourism flux in the Brăila-Galați-Măcin area has been low in the last decades, well below the potential of the area. The analysis of the socio-economic development of these localities, included in the section Study Area, is in fact a history transposition of these cities to their modern period, including the main changes that affected the life in the harbours.
In this paper we calculated some of the main indicators used for making an image of tourism market (Manole et al., 2012):

Index of global demand variation:

$$IGD_{0-i} = \frac{GTD_i}{GTD_0} * 100, \quad (1)$$

where:
IGD_{0-i} = index of the global demand variation from 0 to i;
GTDi = global tourism demand of the year i;
GTD_0 = global tourism demand of the year 0.

The average number of overnight stays:

$$ANOS = \frac{\sum TD}{\sum T}, \quad (2)$$

where:
$ANOS$ = the average number of overnight stays;
$\sum TD$ = total tourism days;
$\sum T$ = total number of tourists.

The paper proposes also a quantitative analysis, in order to evaluate the effect of shorten the distances between the cities by bridge construction, in which we applied a distance matrix

between the main cities that gain from the bridge construction, made for the actual distances and for the future distances.

3. Results

The tourist accommodation sector has developed differently in these cities. The trend was positive in Galaţi and Brăila, while Măcin paid the cost of isolation, and the only tourist accommodation establishment can be found in the rural area, at least 10 km away from the city.

If we look at the distribution by type of accommodation (Table no. 1), the hotels and similar accommodations are the most numerous.

The official statistic is not including the apartments, furnished and used by locals as guest apartments and listed on tourism specialized web sites, but for which no documentation for tourism classification has been submitted by the owners. This type of accommodation was highly developed in the last years, especially in Galaţi.

Table no. 1 The evolution of the tourist accommodation units

Types of tourist accommodation	**Brăila**			**Galaţi**			**Măcin**		
Year	**1990**	**2007**	**2016**	**1990**	**2007**	**2016**	**1997**	**2007**	**2016**
Total	**24**	**30**	**30**	**12**	**19**	**30**	**2**	**-**	**-**
Hotels	11	13	16	7	9	13	1	-	-
Hostels	-	-	1	-	1	4	-	-	-
Guest apartments	-	-	1	-	-	-	-	-	-
Inns	2	-	-	-	-	-	-	-	-
Motels	-	2	1	-	-	1	-	-	-
Villas	9	1	2	2	8	5	-	-	-
Chalets	-	-	-	1	-	-	-	-	-
Campings	2	-	-	2	-	-	1	-	-
Tourist stops	-	1	1	-	-	-	-	-	-
Tourist cottages	-	1	-	-	-	1	-	-	-
Camps for schoolchildren and preschoolers	-	1	1	-	1	-	-	-	-
Tourist boarding houses	-	1	7	-	-	6	-	-	-

Source: INSSE Romania

The index of global tourism demand variation (fig. no. 1) was calculated at county level and shows a positive trend for the period 2014-2016.

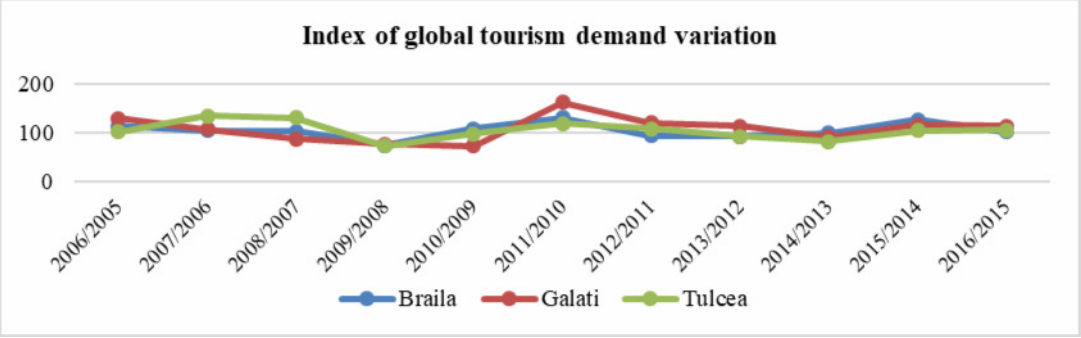

Fig. no. 1 The evolution of the global tourism demand variation in Brăila, Galaţi and Tulcea in the interval 2005-2016

Source: Author's own calculation, based on INNSE's data

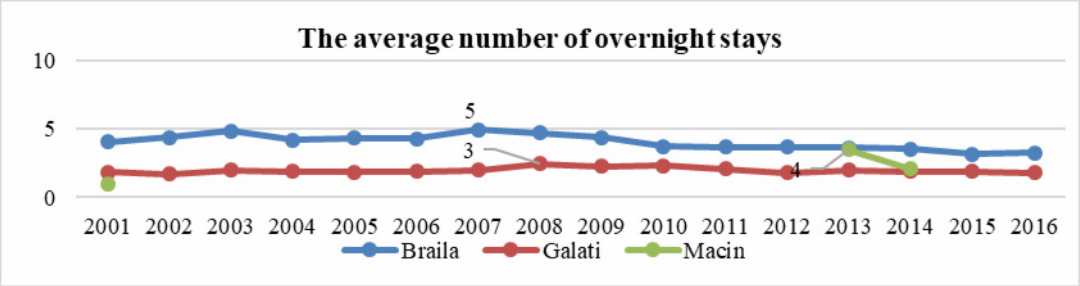

Fig. no. 2 The average number of overnight stays in Brăila, Galați and Măcin for the period 2001-2016

Source: Author's own calculation, based on INNSE's data

For Brăila and Galați the index of global tourism demand change reached the highest values in 2011, as compared with 2010, of 130 %, respectively 162 %.
Brăila is the city which offers the best options for long accommodations and is suitable for holidays, while Galați seems to be a good option as a transit city (fig. no. 2).
By performing a distance matrix, before (table no. 2) and after the construction of the bridge (table no. 3) we could highlight that the bridge will considerably shorten the distances between the cities advantaged by the bridge construction.

Table no. 2 Distance matrix, without building the bridge (avoiding transport by ferry)

	Iași	Botoșani	Suceava	Vaslui	Piatra Neamț	Bacău	Brăila	Galați
Tulcea	447	528	531	382	442	380	197	227
Constanța	452	541	535	387	446	384	202	221
Măcin	439	520	523	374	433	372	189	218

Source: Google Maps, Suggested routes

Table no. 3 Distance matrix with bridge construction

	Iași	Botoșani	Suceava	Vaslui	Piatra Neamț	Bacău	Brăila	Galați
Tulcea	303	412	415	238	326	264	95	109
Constanța	416	536	522	358	434	379	190	202
Măcin	254	367	362	189	272	210	20	32

Source: Google Maps, Suggested routes

4. Discussions

What does the construction of the bridge over the Danube mean?

The bridge will considerably shorten the distances between the cities situated on the left and right side of the Danube, as long as most of the people avoid using the ferry and prefer to follow detour roads to cross the Danube on the Cernavodă Bridge, the only Romanian bridge over the Danube in the Eastern part of the country. As it can be seen in the Table no. 2 and no. 3, Tulcea will considerably gain, by shortening of all its road connection with the cities situated in the North East Region of Development.
The bridge will also increase the tourism traffic from the mountain areas of Romania to the Black Sea during the summer, and the tourism traffic from the cities situated near the Black Sea to the mountain areas in the summer. The Brăila-Galați-Măcin area will be a perfect option for a short term rest as long as these cities are located in the middle distance between these tourism attraction centres.
The harbour area can be the main attraction for this tourism hub. The Danube Esplanade is a generous promenade for the inhabitants of Brăila and Galați, as well as for the passing

tourists who wish to admire the Danube River. Along the Esplanade in both cities there are food and drink terraces and in proximity were built modern hotels. Măcin is situated on an ancient branch of Danube, and its harbour lays on the foot of the hill where the city is spread. The connection of this city with the new bridge will be made by means of a modern road, which is included in the bridge project budget. The construction of the bridge will develop the tourism river cruise and boat tour on the Danube from Brăila and Galați to Măcin. The area Brăila-Galați-Măcin has also a great potential for tourism fishing: the Danube, Siret and Prut rivers and Brates Lake provide the main fishing spots.
The Brăila Danube Bridge will be the third bridge over the Danube in Romania, with a length of 1.97 km, a height of 47m and a maritime clearing of 38 m. This bridge, which will be built by an Italian-Japanese joint venture, is estimated to be the biggest infrastructure project which Romania has seen in the last 3 decades, of a EUR 435 million, EU-approved budget. The bridge is also estimated to have a span of 1.1 km., the 5th longest span in Europe. The length of the project is about 23.413 km and includes a main road Brăila – Jijila (a village situated on the same side of the Danube as Măcin – fig. no. 3) of approximate 19 km and a connection road with the route between Smârdan and Măcin of about 4.3 km.

Fig.no. 3 The area Brăila-Galați-Măcin
Source: Google Maps

How it can be created a sustainable tourism hub in the urban area of Brăila-Galați-Măcin?
This tourism hub can be created only by developing an overall strategy for all whole area. The local authorities of these cities must develop a common strategy that should be implemented simultaneously in these cities and in the surrounding area. Since the tourism of this area is not enough developed at this moment, the bridge construction will not be enough to lead to tourism sector growth in the region.

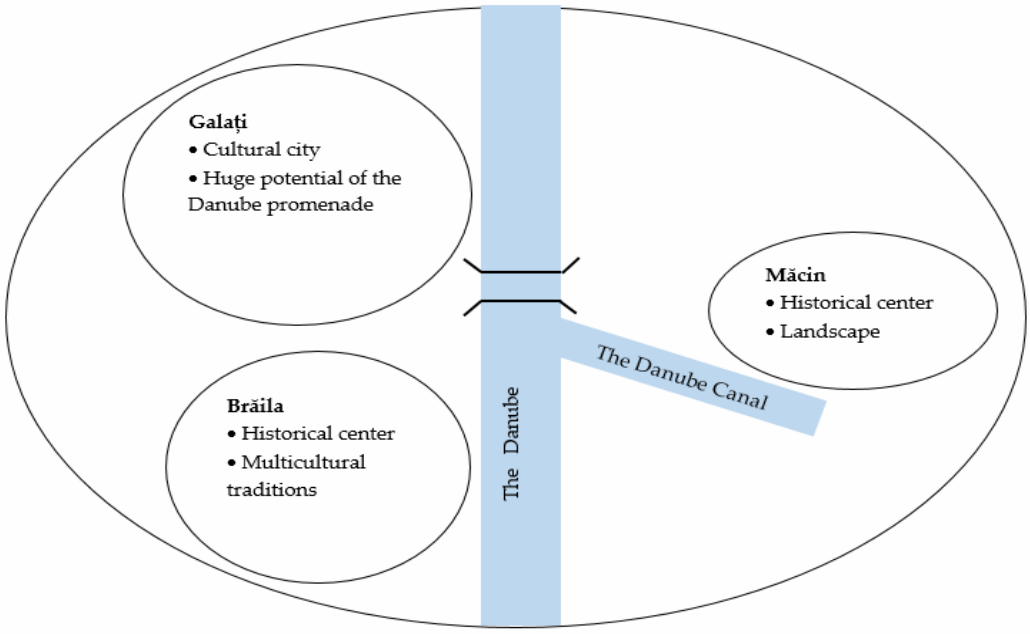

Fig. no. 4 The main strengths for the cities Brăila, Galați, Măcin in creating a sustainable hub

Source: Author's own picture

While Brăila and Galați have the capacity to the increase the tourism capacities by a certain degree, in the case of Măcin the granting of governmental and local facilities for developing SMEs sector related with tourism is a must.

The strategy should include, besides the development objectives for the tourism infrastructure, a plan with the main existing and future tourist attractions, which are to be allocated a local budget and attract extra funding sources. The strategy should target the development of tourism around the main strengths of each city. (fig. no. 4)

Fundamental for this strategy is to develop the major tourist routs for which operators can promote tourist packages for short and long stays. The strategy should also consider the tourism potential of neighbouring area, which is essential for long–time accommodations, in which the tourists' options should be variate: the spa resort Salt Lake, famous for the salt therapeutic potential of water and sludge, located at approximately 5 km from Brăila; the Small Pond Natural Park of Brăila, rich in landscapes and bird species; the Lake Brateș, the largest meadow lake in Romania, the Buciumeni Forest, situated north of Galați, which is one of the most beautiful beech forests in the hilly area, containing secular specimens; the Măcin Mountain, one of the oldest mountains in Romania and a nesting place for many birds species.

Conclusions

The Danube crossing in the area Brăila – Galați – Măcin is possible nowadays only by ferry. This aspect generates major disadvantages for the area's inhabitants who have the jobs on the other side of the river and also economic losses. In this context the Măcin city was isolated and its social and economic development stagnated. The Măcin area which provide a beautiful environment can`t be valorised in this context. A study of the area indicates that the cities situated in the bridge area have a great touristic potential and an adequate strategy, adopted by the local authorities can lead to significant increase of the tourism flux. Each of the analysed cities have particularities that can attract different categories of national and international tourists.

The socio-cultural environment, based on a multi-ethnic tradition, is favourable for the tourism development, while the funds needed for a sustainable approach can be attracted through projects funded within local, national and EU supporting programs.
The number of the accommodation units is low in the present and the local authorities should offer financial facilities for the investors, in order to increase the SMEs number in the tourism services.
The bridge construction will significantly reduce the distances between the main cities from the North - East Region and the cities situated in the South - East Region, near Danube and Black Sea. The bridge is only a part of the infrastructure that needs to be created in the region for creating a tourism significant flux.
Also, the bridge construction will create new jobs in the area but the environmental issues have to be in the centre of concern for the local authorities. Considering the human resources and the level of tourism knowledge which is appreciable in this area, a fact illustrated by the impressions shared by the tourists who used the local tourist accommodation units of Brăila and Galați, a competitive tourism microenvironment of this hub needs to be created and the new tourism product must be promoted within the internal and international macroenvironment, involving all the stakeholders of the public and private sectors which can contribute to this aim.

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THE DECISIVE FACTORS ON ENVIRONMENTAL SECURITY

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Abstract
Environmental security remains, at the impact with the Third Millennium, a basic objective of research as industrial civilization, urbanization, tourism, agriculture, transport, exert a permanent pressure that sometimes leads to distortions in the balance between environmental factors and even to the degradation of the environment. Thus, modern society destroys the ecological balances all over the planet at a speed that does not nearly equal the restoration efforts. Environmental factors as water, air, soil are permanently subject to aggression resulted from the work of economic organizations. A special role in creating this serious situation lies in the energy intensive industries in the metallurgical, chemical and malini fields, which issue in the atmosphere particularly large quantities of gases loaded with toxic substances. Restructuring the entire economy by stopping the activity of unprofitable organizations and maintaining only the cost-effective ones will have a positive role to play in reducing environmental pollution and creating the necessary conditions for environmental protection measures to be included in the processes of upgrading, modernization and development. A particular issue related to environmental security problems is represented by the way human resources manage waste within organizations. The extent of the danger represented by waste for environmental security requires the adequate training of human resources in what concerns the knowledge, tracking and improvement of the production-collection-transport circuit, until its total elimination. At the same time, we our aim is to identify the influence of major factors on environmental security.

Keywords: security, environment, legislation, technology, human resource.

JEL Classification: O13

Introduction

A human society can not exist without consuming natural resources, but having in mind that natural resources mostly non-renewable or heavily renewable are almost exhausted and the planet's population continues to grow, we need to be more aware that climate change in recent decades are signs of nature showing us that some limits of growth, of exaggerated consumption compared to the restoration power of nature have been reached, and that social and economic systems of the 20th century (socialist, capitalist, etc.) have been true consumer and waste societies that pose a real threat to environmental security.
The development of activity fields of the organizations, within a social-economic system, started the struggle against the Mother Nature, against our own support of life, especially

through massive deforestation for agriculture, which had supplied and must supply a supernumerary population for this planet limited as resources, and continuing with the general and exaggerated pollution of these natural resources. Activities towards environmental security require additional production costs which, added to existing costs under difficult conditions for many organizations, can negatively impact economic and financial results. Under the conditions of financial austerity, the short-term strategy of industrial enterprises may also include measures tailored to each case. At the same time, alternatives for obtaining an economic benefit from environmental security must also be sought to, fact that would make it attractive for investments.
The objective of this article is to identify the factors that influence environmental security.

1.Literature review
The „environment" notion refers to everything that surrounds man, namely to the artificial environment and the natural environment. The notion of environment comes from the noun environment, which means a set of natural or artificial elements that condition the life of man (Sadgrove, 1998). For the European Union, the notion of the environment is defined as a "set of elements" which, in the complexity of relationships, represents the framework, mean and living conditions of man (Mac, 2003). The environment is the natural and social framework in which existence, life in general is taking place. Throughout the development of human society, it has undergone a number of imbalances, followed by degradations that have been grown in recent times (Heîn, 1996).
Environmental security can be defined as a conscious human activity, which aims at protecting and improving the quantitative and qualitative conditions of human life (Heîn, 1996). Environmental security is achieved through the rational use of natural resources, according to the principle of sustainable development by preventing and controlling all kinds of pollution and harmful effects of natural phenomena (Larry, 1996). Nowadays, due to the fact that negative consequences of human activities are felt in all fields, the protection of different elements of the environment is not automatically achieved by spontaneous functioning of the different natural factors, thus the intervention of man, the consciousness of society is absolutely necessary. Environment security involves special, complex, rationally based projects and, in many situations, major financial efforts.
Environmental security is based on discovering the causes that affect the environment and avoiding those causes, reducing the consequences and eliminating them in a significant proportion to the prosperity of man and humanity. Ultimately, the main purpose of environmental security is to protect man, human life. Wallace (2004) considers that the problem of environment security has conscientiously consisted of another stage and a specific goal of teaching the training of specialists in human resources to a number of organizations that respond to the aspirations of such an area. Surely the surrounding environment has become an important part of the development process of human resources competences, being sustained and institutionalized in the European Union; The European Commission finances, for example, training for human resources, as well as other technical courses, all being finalized through a practical activity, usually cleaning a polluted surface (Darie, 2001).

2.Research methodology
Ensuring environmental security at the organization level must be based on the processes of planning, monitoring, and control. A high level of environmental safety requires a proper management of any unforeseen events to limit their adverse effects.
In the next we will specifically refer to waste management. Our first aim is to identify the specific environmental security measures. The security factors were classified in 4 categories:

1. Legislative factors (*level of knowledge and compliance*);
2. Organizational factors (*organization's perspective on environmental security*);
3. Technological factors (*level of implementation of specific technology*);
4. Human factors (*behavior of human resources regarding waste management*).

For each category, 10 environmental safety factors were identified. The table below describes these factors (table no. 1).

Table no 1. Environmental security factors in waste management

LEGISLATIVE FACTORS	ORGANIZATIONAL FACTORS
F1. The knowledge of national and European legislation from waste domain;	F1.Integration of environmental policy into other organization policies;
F2. Conforming with applicable legal requirements in the field of waste management;	F2.Implementation of environmental management and audit systems;
F3. Understanding the importance of legislative requirements and issues arising from their non-application;	F3. Ensure the necessary space for the selective collection of waste, equipping it with containers specific to each type of waste and their functionality;
F4. Understanding how to categorize waste according to legal requirements;	F4. Identify and implement ways to correctly manage waste by category (packaging waste, household waste, metals, plastics, wood, waste oils, tires, batteries, hazardous waste);
F5. Responding to waste management policy in Romania;	F5. Security planning of waste management activities;
F6. Identifying how to implement legal requirements according to the specific activities of the organization;	F6. Determination of correct selection plans and waste disposal flows, including internal capitalization;
F7. Elaboration of a waste management strategy and programs;	F7. Evaluation of the negative impact on the environment produced by the organization in the sense of reducing and even eliminating it, by observing the legal norms;
F8. Secure the process of selective collection, transport, neutralization, recovery and final disposal of waste, including hazardous household waste, in accordance with the legal provisions;	F8. Training human resources with regard to environmental security, as well as stimulating their involvement in the process of development and implementation of environmental decisions;
F9. Classification of wastes produced no matter their quantity according to the legal categories in the waste classification;	F9. Prevention and full control of pollution by using best available techniques for activities with significant impact on the environment;
F10. Establishment of recovery procedures, separate collection of paper, metal, plastic and glass waste.	F10. Identification of pollutants that directly and seriously endanger the health of employees.
TECHNOLOGICAL FACTORS	**HUMAN FACTORS**
F1. Use as alternative energy sources - solar energy (photovoltaic panels);	F1. Knowledge and compliance with legal requirements in the field of waste management;
F2. Use as alternative energy sources -	F2. Knowledge of tasks and responsibilities

water energy (hydraulic energy, tidal energy, potential osmotic energy);	for efficient waste management within the organization;
F3. Use as alternative energy sources - wind energy;	F3. Implementation of waste management procedures;
F4. Use of decentralized biomass and energy installations;	F4. Applying the training program on optimal waste management;
F5. Reduce the amount of pollutants by using special equipment (filters);	F5. Compliance with waste management policy at the organization level;
F6. Implementation of solid industrial waste treatment methods;	F6. Maintaining a monthly record of waste generated by the company;
F7. Purchase / use of electric or hybrid cars instead of classic cars;	F7. Prompt dissemination of waste management reports, within deadlines set by current legislation;
F8. Digitalization of documents within the organization;	F8. Preventive measures on environmental threats;
F9. Unsure artificial lighting by using economic bulbs - with LED, halogen or fluorescent lamps;	F9. Storage of wastes of any kind only in authorized sites;
F10. Modernization of production processes with efficient work equipment so that the pollution is minimal.	F10. Managing the mode of operation of the installations in the case of exceeding the normed values.

Source: the author's own concept

The second purpose of this study is to estimate the level of the implementation of these environmental security measures in the waste management. To this end, a statistical study involving 150 companies from different regions of Romania was performed. These companies generate or produce waste (irrespective of their type) and are responsible for the collection/ sorting/ transportation/ processing/ treatment/ recycling/ disposal of waste. The sample of surveyed companies was randomly selected. The survey took place between November 2018 and February 2019. More specifically, company managers have indicated a level (between 1 and 5) of "implementation" for each listed above environmental safety factor. The level of implementation indicates how to manage/apply a specific environmental security factor at the company. See Table no. 2 for the significance of the levels 1-5.

Table no. 2 The significance of the factor-implementation levels

Level	Type	Description
5	High impact	Achieving environmental security objectives
4	Significant impact	Significant impact on environmental safety objectives
3	Moderate impact	Environmental security objectives partially fulfilled
2	Reduced impact	Minor achieving of environmental security objectives
1	Very low impact	Insignificant achieving of environmental objectives

Source: own processing of the authors after Order No.1993 of 30.05.2014 - on the organization and conducting corruption prevention activities within the National Administration of Penitentiaries and subordinate units

Tables no. 3÷6 below reflect the expected levels of implementation of factors grouped into the 4 categories. The tables are accompanied by figures illustrating the average level of implementation of the factors as well as the weighting of the 1-5 levels of implementation of the environmental measures within each category.

Table no. 3 Statistical data regarding the implementation of legislative factors

LEGISLATIVE FACTORS	Number of companies / levels				
	1	2	3	4	5
F1. The knowledge of national and European legislation from waste domain;	7	12	36	46	49
F2. Conforming with applicable legal requirements in the field of waste management;	7	13	34	46	50
F3. Understanding the importance of legislative requirements and issues arising from their non-application;	7	13	34	46	50
F4. Understanding how to categorize waste according to legal requirements;	7	13	34	46	50
F5. Responding to waste management policy in Romania;	6	10	36	49	49
F6. Identifying how to implement legal requirements according to the specific activities of the organization;	7	13	34	46	50
F7. Elaboration of a waste management strategy and programs;	8	15	48	41	38
F8. Secure the process of selective collection, transport, neutralization, recovery and final disposal of waste, including hazardous household waste, in accordance with the legal provisions;	0	0	8	53	89
F9. Classification of wastes produced irrespective of their quantity according to the legal categories in the waste classification;	0	0	8	53	89
F10. Establishment of recovery procedures, separate collection of paper, metal, plastic and glass waste.	0	0	8	53	89
TOTAL	49	89	280	479	603
Expected level of implementation of legislative factors	$M_1 = 4.00$				

Source: the author's own concept

From the analysis of Table no. 3, the value M1=4.00 represents a significant level of legislative factors implementation on environmental safety.

Table no. 4 Statistical data regarding the implementation of organizational factors

ORGANIZATIONAL FACTORS	Number of companies / levels				
	1	2	3	4	5
F1.Integration of environmental policy into other organization policies;	14	12	47	46	31
F2.Implementation of environmental management and audit systems;	11	17	50	43	29
F3. Ensure the necessary space for the selective	0	0	8	53	89

collection of waste, equipping it with containers specific to each type of waste and their functionality;					
F4. Identify and implement ways to correctly manage waste by category (packaging waste, household waste, metals, plastics, wood, waste oils, tires, batteries, hazardous waste);	0	0	3	49	98
F5. Security planning of waste management activities;	11	17	50	43	29
F6. Determination of correct selection plans and waste disposal flows, including internal capitalization;	11	17	50	43	29
F7. Evaluation of the negative impact on the environment produced by the organization in the sense of reducing and even eliminating it, by observing the legal norms	8	11	48	41	42
F8.Training human resources with regard to environmental security, as well as stimulating their involvement in the process of development and implementation of environmental decisions;	0	0	21	38	91
F9. Prevention and full control of pollution by using best available techniques for activities with significant impact on the environment;	38	39	42	18	13
F10. Identification of pollutants that directly and seriously endanger the health of employees.	6	13	33	47	51
TOTAL	99	126	352	421	502
Expected level of implementation of organizational factors	$M_2 = 3.73$				

Source: the author's own concept

The implementation level of organizational factors, M_2=3.73, highlighted in Table no. 4, represents a moderate to significant degree regarding the involvement of the organizations in environmental safety.

Table no. 5 Statistical data regarding the implementation of technological factors.

TECHNOLOGICAL FACTORS	Number of companies / levels				
	1	2	3	4	5
F1. Use as alternative energy sources - solar energy (photovoltaic panels);	131	11	3	2	3
F2. Use as alternative energy sources - water energy (hydraulic energy, tidal energy, potential osmotic energy);	132	18	0	0	0
F3. Use as alternative energy sources - wind energy;	148	2	0	0	0
F4.Use of decentralized biomass and energy installations;	149	1	0	0	0
F5. Reduce the amount of pollutants by using special equipment (filters);	5	14	35	57	39
F6.Implementation of solid industrial waste treatment methods;	7	12	36	46	49

F7. Purchase / use of electric or hybrid cars instead of classic cars;	17	12	59	46	16
F8.Digitalization of documents within the organization;	17	32	36	44	21
F9.Unsure artificial lighting by using economic bulbs - with LED, halogen or fluorescent lamps;	7	12	36	46	49
F10.Modernization of production processes with efficient work equipment so that the pollution is minimal;	18	46	33	32	21
TOTAL	631	160	238	273	198
Expected level of implementation of technological factors	$M_3 = 2.50$				

Source: the author's own concept

In Table no. 5, the value M_3=2.50, resulting from the calculation of the implementation level for the technological factors, highlights a minor to moderate degree regarding the application/involvement of technology in environmental safety.

Table no. 6 Statistical data regarding the implementation of human factors

HUMAN FACTORS	Number of companies / levels				
	1	2	3	4	5
F1. Knowledge and compliance with legal requirements in the field of waste management;	7	12	36	46	49
F2. Knowledge of tasks and responsibilities for efficient waste management within the organization;	7	12	35	51	45
F3. Implementation of waste management procedures;	5	16	35	54	40
F4. Applying the training program on optimal waste management;	5	16	35	54	40
F5. Compliance with waste management policy at the organization level;	5	14	35	57	39
F6. Maintaining a monthly record of waste generated by the company;	7	12	36	46	49
F7. Prompt dissemination of waste management reports, within deadlines set by current legislation ;	7	12	36	46	49
F8. Preventive measures on environmental threats;	17	44	36	32	21
F9. Storage of wastes of any kind only in authorized sites;	7	12	36	46	49
F10. Managing the mode of operation of the installations in the case of exceeding the normed values.	18	46	33	32	21
TOTAL	85	196	353	464	402
Expected level of implementation of human factors	$M_4 = 3.60$				

Source: the author's own concept

The implementation level value M_4=3.60 for the human factors, highlights that human resources have a moderate to significant involvement on environmental safety.

Conclusions

The primary objective of environmental security is or tends to express from numerous points of view the provision of maintaining or protecting the environment as close as possible to the natural reality or increasing the growing concern of the surrounding environment. Environmental security components influence the integration of economic and geo-ecological aspects under the sign of protecting or restoring the environment through an environmental policy, starting from the primary or initial geo-ecological realities.

The management of the organization has the task, through management strategies and policies, to contribute to the development of environmental protection actions, to highlight the possible environmental damages that may result from labor process, respectively to implement preventive measures. Human resources have an important role within the organization as they have skills in environmental safety field and are fully devoted to environmental protection issues. An important part of large organizations benefit from specialized training centers, but these are not well-exploited in certain situations, and the interest in preparing and improving human resources in terms of environmental security is relatively low. This low interest is largely due to the low level of funding allocated for training. Under these circumstances, one can use less expensive forms of preparation, such as: individual study or self-training; practical demonstrations in professional units or demonstration centers; teamwork under the guidance of an expert. Both organizations and human resources play a decisive role in the relation with the environment and sustainable development based on traditional experience and relationships. Organizations must recognize their economic interests, support them appropriately and facilitate collaboration to achieve lasting environmental security. That is why environmental measures are a basic objective of mankind, since civilization exerts a permanent pressure of degradation. Of these, an important role is played by the reengineering of industrial processes coupled with strict measures to improve depollution solutions.

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*** Order No.1993 of 30.05.2014 - *on the organization and conducting corruption prevention activities within the National Administration of Penitentiaries and subordinate units*

MANAGING ORGANIZATIONS FOR SUSTAINABLE BUSINESS DEVELOPMENT: INTERACTION BETWEEN VRIO FRAMEWORK AND McKINSEY 7S FRAMEWORK

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Abstract

In the current global economic context, the concepts of sustainable company development have become the main topics of discussion. To discuss a sustainable development process, companies need to demonstrate their development capabilities through effective actions.

The economic environment in which modern organizations carry out their activities is characterized by an interpenetration of economic areas. This strongly influences how companies set their goals and manage their business. Thus, organizations are determined to define, in addition to classical economic objectives aimed at achieving profit, objectives related to solving some of the sustainability problems.

Achieving the economic goals of companies without jeopardizing the general interest of stakeholders and opportunities of future generations has become imperative in the current context. The strategy of a company implies the set of major long-term objectives, the main organizational modalities and the resources needed for future development .

The company's objectives can be: strategic objectives, tactical objectives and operative objectives. The ways to achieve the objectives involves the use of modern methods and techniques to optimize production, processes, maximize profit and reduce production costs.

These methods will be chosen according to the economic development of the company, the management system, the influence of the production factors and their costs. The necessary resources refer to their nature, which can be: financial, material and human.

Keywords

Sustainability, Business Development, Strategy, Development Framework, Management Tools Interactions, Business Analysis

JEL Classification

F20, F44, H12, M16, M21, O00, O20, O32, Q01

Introduction

This paper is a first step towards understanding and appreciation of strategic activities within companies, and how they can positively influence their development.

Thus, with a regional and thematic approach, this paper will examine how the strategy becomes a link between business and sustainable development.

The first part of the paper contains two chapters, the first entitled "Business - Sustainable Development" and the second "Business Strategy and Competitive Advantage". The first chapter starts with the definition of the immediate constituents of the title of the thesis, followed by the borderline in detail. I will talk about the role and the reasons for the business approach and the universal principles of sustainability in the business strategy (Pamfilie & Croitoru, 2018). In the second chapter I proposed to highlight how strategic activities can be a competitive advantage.
The objectives of the analysis are to demonstrate the relationship of interdependence of the strategic concepts set in the theoretical part as well as the confirmation of the importance of the strategic activity in the companies.
For the first analysis, when take into consideration to improve the companies, we need to analize what is its current situation and types of difficulties the companies have in their day to day activities. In this days the rapidly changing environment is the caused for implementing strategic management and to become the primary strategic topics of any organization. This paper explains how to implement a few strategic management tools, its benefits and the concepts of strategic management, etc.
When analyzing strategic management topics the main information taken by a company management are the involvement of internal and external function, and the alocation of resources. This requires to identify the goals, mission of the organization, applications and developing policies for constantly improvement. Recent studies have supported that any company general strategy needs to be in line with stakeholders expectations (Kopia, J., Kompalla, Buchmüller & Heinemann, 2017).
Strategic management needs to be used when designing, implementing and assess cross-functional decisions that will enable an organization to reach its goals. It includes the systematic identification of the company's goals, making available the neccessary resources, making policies and strategies to reach these goals.
Strategic management integrates the activities of the various functional parts of a business, such as aquisitions, selling, production, marketing, etc, to achieve organizational objectives.

Research Methodology
The authors used a descriptive research methodology to achieve the research results and conclusions. The information in this paper was studied from specialized literature covering topics like sustainable development, strategic management, strategy, and competitive advantage, mainly specialist books or publications in this fields. Furthermore, an inductive approach is chosen to draw a conclusion on the effects of using the tools upon business processes inducing towards a sustainable business and gaining competitive advatnage.

Business - Sustainable Development
The strategic management process, see Fig. 1, is defining the organization's strategy. It is the process used by managers to make a choice of a set of strategies for the organization that will enable sustainable development and to achieve better performance.
Strategic management is a continuous process that appraises the business and industries in which the company is involved and fixes goals to meet all the present and future competitor's and then reassesses each strategy.
According to Sourkouhi(2016) the process of the strategic management includes some steps:
1. The determining of mission and goals of the organization

2. The determining of current strategy
3. Analysis of stakeholders conditions
4. Analysis of the organizations resources
5. It is identified the gap between the objectives and the strategies
6. According to the evaluation criteria we must identify the appropriate strategies
7. After determining the best strategy, it should be implemented, the first step it is performed as testing and after that step by step implement every pillar, and every proccess discovered after testing needs to be followed by a PDCA proccess for continous improvement.

To understand the source of competitive advantage, companies need to analyze their internal and external environment and to use tools like VRIO analysis and McKinsey 7S framework. Through the VRIO analysis it identifies four pillars, that companies resources must have, in order to become a sustainable competitive advantage and to conduct to a sustainable development.

The source of competitive advantage must be valuable, rare, imperfectly imitable and organized to capture value. A capability and the resources of the company that meets all pillars can bring sustainable competitive advantage and to conduct to a sustainable development.

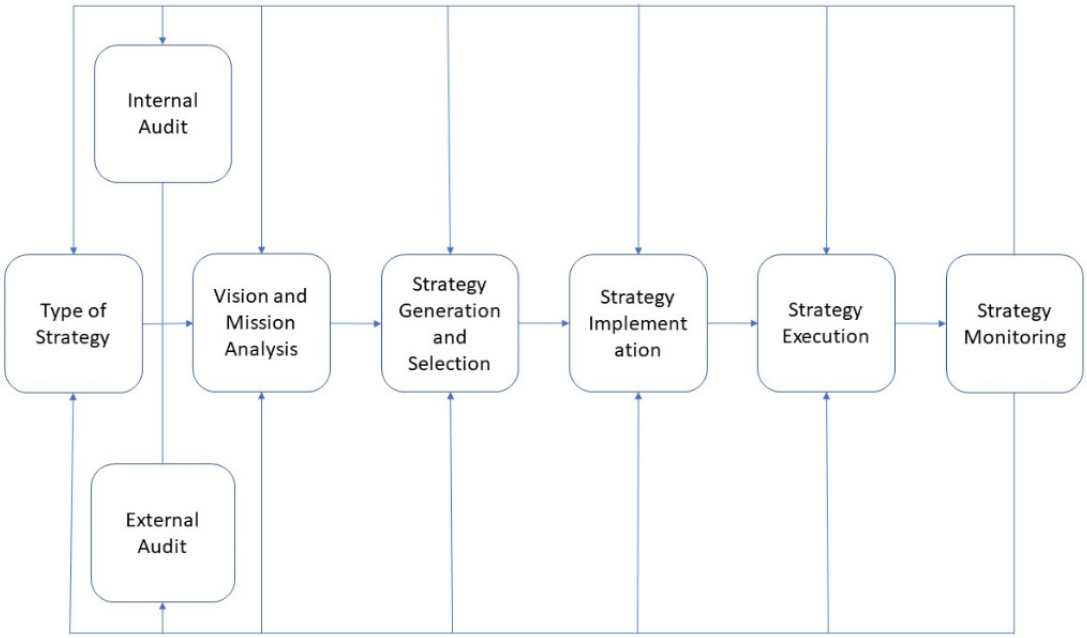

Fig. no. 1 Process of Strategic Management

Source: Fred, D. and Forest, D., 2017. Strategic Management: A competitive Advantage Approach, Concepts and Cases

For sustained business development companies must concentrate on intangible assets, assets that can't be acquired so easily, such as: trademarks, unique training systems, brand reputation, innovative ways to perform tasks and intellectual property.

VRIO analysis is an analytical technique for the evaluation of any company resources and to establish the competitive advantage.

The VRIO tool, see Fig. 2, used in combination with other analytical techniques will help organizational management evaluate business resources in a more detailed view and to establish the ways for gaining sustainable development. For financial and operational resources, there are many indicators that evaluate the condition or performance of the

business from different angles of the business. In the same way for human resources, property or information are other indicators of their quality, performance or efficiency. The advantage of a VRIO analysis is its clarity and simplicity.
Difficulties can appear when looking for the resources and a good solution can be by asking some specific questions.
Finding valuable resources:

- Which process brings the same value to customer but with lower costs?
- Which activities increase customer value by product or service differentiation?
- Can we bring in front something that we are recognized, some awards?
- Do we have access to rare materials?
- Do we have good network in the field of business? Do we have integrated systems with our partners?
- Do we have skilled employees and with special capabilities?
- Do we have good brand reputation?
- Do we have some strengths compared to other companies in the field of business?

Finding rare resources:

- Can your resource be imitated easily by other companies or can perform in the same way?
- Can your resource easily be bought in the market?
- Can your resource be obtained in the future, cheaper?

Finding imperfectly imitable resources:

- Can other companies replicate a resource?
- Can other companies develop a substitute?
- Do we have patents for our resources?
- Is it hard to identify the core of the resource, process, tasks, etc.?

After identifying the resources, it is very important to see if the company is organized to exploit them. In the same way, like finding the resources, it can be useful answering to some questions:

- Does the company have a strategic management process?
- Are in the company motivational and reward systems?
- Has the company introduced a reward for innovation?
- Is there introduced a system for using the resource?
- Has the company introduced control systems?

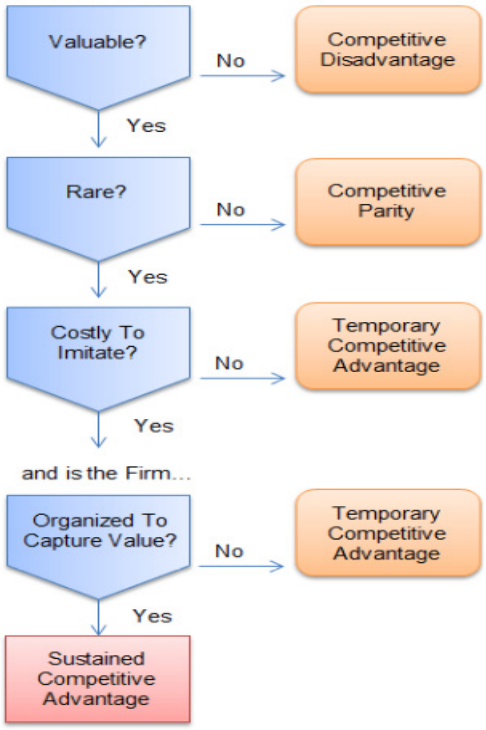

Fig. no. 2 VRIO framework graphic
Source: Rothaermel, F., 2015, Strategic Management

Any business to become sustainable in the long run must include in the business strategy the employees. It is very important to have devoted employees with the same moral and business values, prepared according to their career plan. Each employee must understand the business model, leadership style, short, medium, and long-term strategy, and the company must provide them with everything they need to develop a sustainable business, be they software, financial or operational.

Each employee must be involved in the development of the company, each of which is part of a system, a continuous machine. Whether you develop sustained and sustainable development processes or systems, PDCA or Kaizen, every piece in this machine needs to be confident that it knows and what it does is right, and if it is not right, it must have the flexibility to adapt and evolve.

Every company needs with every activity made to try to empower and develop all employees, depending on their evolution and desire for career. The business is made by employee and they need to understand and develop guidelines for a sustainable business, everyone needs to understand what they need, what to do and how to do their activity so that everyone achieves the requests from the company, regardless of which department they belong to.

A guideline for a business sustainability and development is the McKinsey 7S Framework. Through these guidelines every company can have a plan to develop all the soft and hard skills that the employees and the company needs to develop in a sustainable way.

To be successful it is necessary for every company to have a good understanding of the internal organization and to monitor how work is done and what can be done more effectively and efficiently.

In the 7S Framework the hard and soft elements are incorporated, where the hard elements from a company can be influenced directly. The soft elements are not so visible and

influenced directly by the company, they are present in a more abstract way and can be found in the company's culture. The hard elements in the 7S Framework are Structure, Systems and Strategy; the soft elements are Skills, Staff, Style and Shared Values.
The 7S Framework, see Fig. 3, is a tool used to trace performance problems, lack of efficiency in a company to subsequently change and/or improve these. With a clear understanding of these performance problems, several elements need to be implemented in a targeted manner. It is important to compare the present situation with the future goals. The 7S Framework is a good framework, in which possible lack of resources, gaps and inconsistencies can be traced, adjusted and monitored.
Combined the two tools will bring to every company the neccesary proccesses for sustainable development at every level of the company and it will build strong connections in every department.
Strong connections between departments will help any company resist impacts from inside or outside the company, the company's environment can influence business and impact on business, these developed connections will have the flexibility to adapt and counteract these impacts. Any connection within the company that promotes continuous development/ improvement and has the power to adapt to market needs will lead to sustainable development and create the premises for innovation.

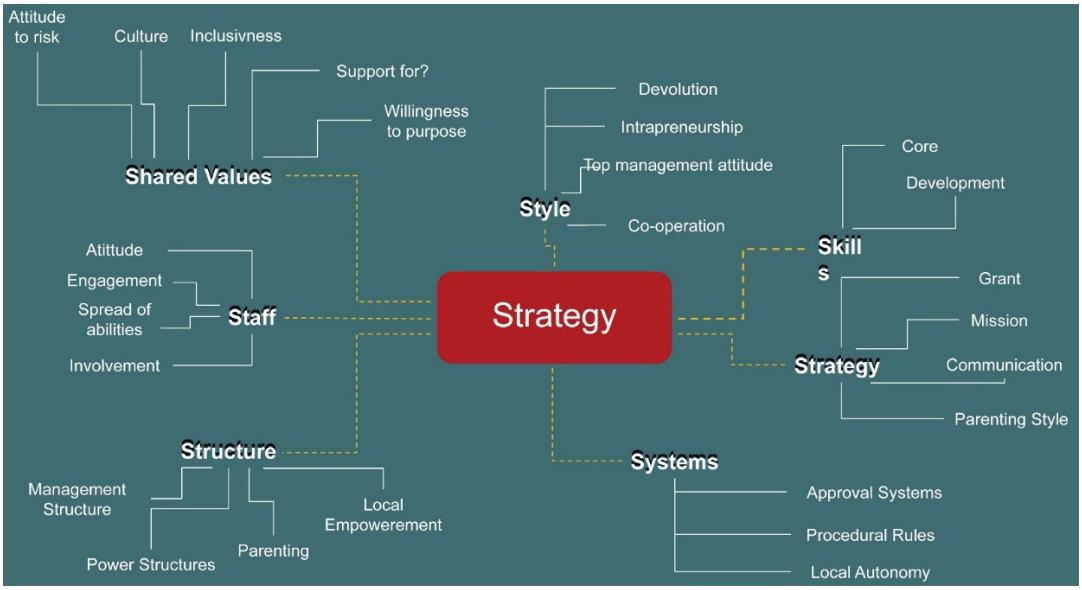

Fig. no. 3 McKinsey 7S Framework

Business Strategy and Competitive Advantage

The concept of competitiveness associated with a company suggests efficiency, quality, high productivity, safety, adaptability, modern management, success, high quality products and reduced costs. In order to recognize a company as competitive, it is necessary to carry out a thorough analysis of both the company and its sector of activity. The competitiveness of a company is given, to a large extent, the ability to understand and adapt to the current world context.
Michael Porter argued that "the only comprehensive indicator defining the concept of competitiveness at national level is national productivity"; This definition can also be extrapolated to organizations where productivity increases with the establishment of a sustainable development plan.

According to Michael Porter (2002), the fundamental factor of a company's profitability is due to the attractiveness of the industrial branch for economic agents. In any industry, there are five forces that determine its profitability and its structure: the entry of new competitors, the existence of substitutes, the negotiating power of buyers, the power of bargaining of producers and the rivalry between economic agents. The significance of the five forces varies from one industrial branch to another depending on technical and economic characteristics and changes over time.
Michael Porter talks about the existence of three types of strategies that can be addressed by companies to build competitive advantages: cost management, differentiation, and focus. An adequate strategy will allow the camp to capitalize on its strengths and to avoid the adverse effects of the five forces that we have mentioned above.
The same author points out the existence of four stages of competitive and sustainable development:
- the stage of development determined by the factors of production;
- the stage of development driven by investment;
- the stage of innovation-driven development;
- the state of development of wealth.
Evolution from one stage to another implies a transformation of business infrastructure, financial system, technology and quality standards, and strategic management. In this context cultural values must not be forgotten. For successful replication of systems adopted by different companies, it is necessary to thoroughly understand the cultural ethics and social values in the environment. (Porter, M., et. al., 2002, Competitiveness and stages of economic development)
There are many influences on the business purpose and business strategy for sustainable development, see Fig. 4. Each influence must be treated with attention and driven by safety or risk assessment for each impact.
A business purpose refers to an entire range of tasks, activities, often chained or structured conducted by people, software or equipment to produce a specific level of service or product for a user or consumer. Business purposes are implemented to accomplish a predetermined organizational goal and to see all the influences in the business activity. Business purposes occur at all internal levels; some are visible to customers, while others are not.
The term business purpose may also refer to the entire effects of all steps made for progressing toward a business goal.

Fig. no. 4 Influences on strategic purpose

Source: Johnson, G., Whittington, R., Scholes, K., Angwin, D. and Regner, P, 2014. Exploring Strategy: Text and Cases

Results and Conclusions

The aim of this paper was to present a possible strategic framework which combines the functions of strategic management with two technical tools used in the process for gaining high performance, for managing organizations more efficiently for a sustainable development. This framework needs to be further defined and need to make plans to become operational excellence. Following this further definition, specific tools can be researched and added to this initial plan, especially from the financial part. The impact of specific tools on the management process and performance at each level in the company can be understood and need to be monitored after implementation. From this understanding, specific information and recommendations for an action plan can be made to managers throughout the company.

In this paper we have defined and briefly reviewed the key concepts of performance measurement and several tools that can be used to improve performance and manage the business sustainably.

The concept of performance refers to a judgment on a result and the manner in which this result is achieved, taking into account the company's mission, goals and conditions, the need for resources. Measurement of performance goes beyond the mere finding, with the objective of making decisions to improve performance conditions, improving performance and improving performance. Management control, performance management systems have to implement performance measurement and performance indicators.

Knowledge of resources is essential for making managerial decisions with implications for achieving strategic goals and achieving performance. This requires the use of specific tools for strategic management. In general, analytical systems assess production methods based on labor and raw materials, and therefore direct costs. Indirect costs related to supply, research, marketing, distribution, as well as those related to the operation of the enterprise are imputed to each product according to variable, but not very relevant, distribution keys, like turnover or working hours, all of which are necessary to include them in the Stage Plan for the analysis and improvement of their most efficient use.

Performance measurement is a system of control techniques designed to ensure that the achievements of the various accountability centers in the enterprise comply with the rules set for each of them and apply positive or negative sanctions if the achievements deviate significantly from the chosen norms. Thus, after they have completed their planning to achieve the goals, managers have to control whether the means have been implemented according to their plans. Then you have to compare the actual results with the ones you have in mind to take the corrective measures that are required. By analyzing deviations, managers can separate effective and inefficient functions within companies so that managers can focus their efforts on areas of activity that need to be improved.

However, we believe that this concept of value creation should not be viewed only from the point of view of the shareholder, but of all the parties involved in ensuring the performance of an enterprise. A primary role in ensuring, maintaining and developing performance is the client.

Taking into account all previous statements, we can say that managers must have at their disposal a set of elements to enable them to carry out their work and make decisions. Therefore, there is a need for a model to help managers identify, understand and manage the performance trend. Of the many models we chose to briefly present two of them, which we considered to be customer-oriented: VRIO framework and McKinsey 7s framework.

From a theoretical point of view, the present paper provides insight into the importance of strategic management activities in companies and aimed at conceptual understanding,

identifying the advantages generated by the use of specific tools for the benefit of the company, but also for the society as a whole, determining the correlation of the efforts made and the effects obtained by the enterprise.

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EVALUATION OF THE RELATIONSHIP BETWEEN SUSTAINABLE DEVELOPMENT INDICATORS AND STANDARDIZED ASPECTS THROUGH IAS 41

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Abstract

The objective of this paper is focused on the analysis of the performance of agricultural enterprises, namely of the exploitation of the forestry fund. The increasing importance of the role played by the forestry fund for society as well as for the economy in general implies a serious concern of the authorities regarding the regulatory process on the assessment and recognition of this invaluable resource with self-regenerative capacity.

The aim of the research is to identify a model for diagnosing the economic capacity of entities in the forestry segment in Romania, with 4 study objectives and 3 hypotheses being defined and the values of which were the basis of building the vulnerabilities chart. The methods used are prospective (observational analysis) and descriptive based on modeling statistical processes, the purpose of which is to construct the adjusted branch vulnerability chart. The study is an innovative one, based on structured research, and succeeds in an international framework that is proved to be insufficient to bring additional elements (plus value) and addresses in particular the public entities and authorities charged with supervising the land fund in Romania.

Keywords: IAS 41; Forest fund; financial performance

JEL Classification: Q23, M41, Q56

Introduction

The increasing importance of the agricultural sector in the national economy, as well as the presence of problems in the financial reporting of biological assets and agricultural production, have led the IASC in 2001 to develop a specific standard in this field, namely IAS 41 - Agriculture. The most important role of this accounting rule was to introduce the criterion of valuing resources of the nature of biological assets and agricultural products at fair value with certain well-grounded exceptions in which historical cost evaluation is allowed.

For example, in Romania, the forest - the green source of goods and services that both man and the whole society has, has the obligation, or rather the duty to take care of it as a whole. Its most important feature, we consider it to be self-reproducibility. Accepting the situation in our country, we can state that the 27% current share of the forest fund is under the one of

European Union, which has a 32% share. This, at present, does not prevent the multitude of forest-based societies from stopping their business, but in the field of accounting, things are not very transparent (Cosmulese and Mihai, 2019). This is due to the main reason that the forest fund itself is not evaluated, even if it actually meant the forests owned by the state and different categories of land, which in turn were also not registered in the accounting. We believe that accounting legislation still has serious gaps in the evaluation and recognition of this resource and it is likely to suffer changes from this point of view, otherwise evaluation, recognition criteria and accounting will remain questionable on a long term.

In this respect, IAS 41 - Agriculture was developed to support the economic entities that carry out agricultural activities. Basically, this standard represented a significant change in the optical range by the IASC (International Accounting Standards Committee), as compared to existing standards up to that point. This is justified by the fact that IAS 41 represents a radical change in the reporting of these types of assets, but at historical cost. At the same time, IAS 41 confirms for the first time the inclusion in the income and loss statement of the positive or negative component of the income, the profit or loss attributable to the variation in the fair value of a biological asset, basically the result of the exercise, which also includes the economic, positive but unrealized values.

The objective of our work is to analyze the financial performance of the agricultural enterprises that manage the forestry fund of our country. In order to achieve this objective, it is absolutely necessary to describe and analyze the distinctive features of agricultural enterprises, in particular those of the type of forestry bypass and forestry exploitation, which manage the forestry fund, in parallel with a detailed examination of IAS 41 standard (weak points and strong points) and a substantiated justification of the critical considerations regarding the application and modifications made by the IASB to this rule in June 2014.

Literature review

The objective of IAS 41 was to prescribe the fair value measurement of biological assets and agricultural products, with the exception of rare exceptions, properly explained, where a historical cost estimation is allowed (Grosu, 2016; Acuña, 2015). This accounting standard represents a significant change of direction by IASC in relation to the accounting principles previously issued: in fact, IAS 41 represents the most radical departure from accounting to historical costs (Mates and Grosu, 2008; Ciubotariu, 2013; Cosmulese and Socoliuc, 2018). Moreover, by confirming its innovative field for the first time, the profits and losses associated with changes in the fair value of a biological asset are included in the income and loss statement, including both the positive and the negative components of the income, thus creating a financial result which also contains the flows of economic elements with positive but unrealized values (Mates et al, 2015; Ciubotariu, 2016; Cosmulese and Ciubotariu, 2017). A fundamental characteristic of an agricultural enterprise is closely related to the fact that it carries out in a complete process most of the production steps (Radu et al, 2015). This is done in a rapid manner in the sense that biological assets are typically exposed to atmospheric phenomena which, viewed from the risk point of view, allow the identification of atmospheric risk as the only specific expression in the overall share of the global risk to which it is exposed an agricultural enterprise (Corbella, 2000). Regarding the distinctive features of an agricultural enterprise, such as the sequencing and mandatory schedule of production operations, the duration of biological cycles and the reduced attitude towards standardization, they allow us to state that agricultural activity is characterized by a rigidity of the activated processes. Moreover, the physical transformation processes due to the biological constraints to which they are subjected do not allow a significant change in the quantity or quality level of the obtained products (Corbella, 2001).

Methodology

In order to demonstrate the impact of regulations through International Accounting Standards IAS 41 in the forestry sector, the authors proposed to carry out a radiography of the main economic activities in the forestry sector on the principles of sustainable development and in this respect they dynamically analyzed in 2008-2017 the performances reported by a 48 forestry bypass activating in Romania in the Northeast region in the sectors of forestry related activity respectively: Forestry and other forestry activities (CAEN code 210); Forest exploitation (CAEN code 220); Collection of plants and fruits from spontaneous flora (CAEN code 230); Activities related to forestry services (NACE Code 240). The sustainability indicators analyzed are composite indicators defined as follows:

a) Sectorial development (noted Ds) of the main actors in the forestry field in Romania by activity classes (thousands of euros) - represents the achievements reflected by the turnover reported by the actors in the branch in dynamics during 2008-2017; b) Capitalization through Fixed Assets (noted Kaf) (thousands of euros) - represents the accumulations of fixed assets (forest fund) reported by the forestry bypass analyzed in the annual financial statements during 2008-2017; c) Economic performance (profitability rates) (%) (noted Pr) - reflected by the net profit/turnover ratio based on the financial data reported by the 48 entities in dynamics in 2008-2017; d) Systemic risk of the actors (insolvency risk) (%) (noted Ri) - calculated on the basis of the vulnerabilities analyzed as a ratio of the accumulation of debts/turnover of the 48 entities in dynamics in 2008-2017; e) Sustainable growth rates in the sector (%) (noted Rs) - represented by the ratio of the turnover and the capital of the 48 forestry bypass dynamics in the 2008-2017.

The present study has set the following objectives:

1) Segregated analysis by domains of activity of sustainable development indicators, highlighting critical years and favorable years based on data taken from direct observation (Ministry of Finance website, financial information section); 2) Evaluation of the global index of sustainable economic development by sectors of activity and indicators of sustainable development as a result of the analysis from the direct observation, with drawing up the development chart by classes of activity; 3) Assessing the impact of accounting policies currently applied through IAS 41 on the basis of a rapid diagnostic model and building the current branch vulnerability table; 4) Identification of segments related to voluntary disclosure (IPSAS 27 standard) with allocation of image and structure benefits to the main vulnerabilities identified in objective 3, calculation of relative image increases by assimilation of the principles of voluntary reporting identified.

According to the objectives presented, the following working hypotheses are formulated:

Hypothesis 1: Sustainability indicators reflect in a directly proportional relationship the ability of the organization to implement the IAS 41 principles and to increase the quality of the presented accounting information.

Hypothesis 2: Economic vulnerability is reflected in accounting by the increase in the level of accounting errors, voluntary reporting activities being able to significantly reduce the inherent risk.

Hypothesis 3: Fair recognition of forest resources is an accounting principle that can help both entities and authorities to develop national forest fund protection policies and this recognition depends on assimilating the principles of voluntary reporting by the industry branch entities.

We built the rapid diagnostic model using the Excel and Gretl software (dedicated statistical software) based on the information gathered by direct observation.

The global branch development index (Ig) is a rapid diagnostic tool at the branch level and field of activity and is calculated according to the formula:

$$Ig_{NACE} = \frac{Ds_{NACE} + Kaf_{NACE} + Pr_{NACE} + Pi_{NACE} + Rs_{NACE}}{n}, \text{ n=5} \quad (1)$$

Where:

$$Ds_{NACE} = \frac{\sum_{j=1}^{t} Ds_{NACE_j}}{t} = \frac{\sum_{j=1}^{t} \frac{\sum_{i=1}^{m} T_{ij}}{m_{NACE}}}{t} \quad (2)$$

Where: **T** represents the achievements reflected by the turnover reported by the actors in the branch in dynamics in the 2008-2017 period; **m** represents the number of actors in the branch; **t** is the number of years for which the analysis was performed

$$Kaf_{NACE} = \frac{\sum_{j=1}^{t} Kaf_{NACE_j}}{t} = \frac{\sum_{j=1}^{t} \frac{\sum_{i=1}^{m} FA_{ij}}{m_{NACE}}}{t} \quad (3)$$

Where: **FA** represents the accumulations of fixed assets (forest fund) reported by the forestry bypasses analyzed in the annual financial statements for the 2008-2017 period; **m** represents the number of actors in the branch; **t** is the number of years for which the analysis was performed

$$Pr_{NACE} = \frac{\sum_{j=1}^{t} Pr_{NACE_j}}{t} = \frac{\sum_{j=1}^{t} \frac{\sum_{i=1}^{m} \frac{PN_{ij}}{T_{ij}}}{m_{NACE}}}{t} \quad (4)$$

Where: **Pr** represents the net profit/turnover ratio (T) based on the financial data reported by the 48 entities in dynamics in the 2008-2017 period; **m** represents the number of actors in the branch; **t** is the number of years for which the analysis was performed

$$Ri_{NACE} = \frac{\sum_{j=1}^{t} Ri_{NACE_j}}{t} = \frac{\sum_{j=1}^{t} \frac{\sum_{i=1}^{m} \frac{DB_{ij}}{T_{ij}}}{m_{NACE}}}{t} \quad (5)$$

Where: **Ri** represents the ratio of the accumulated debts (DB)/turnover (T) of the entities analyzed in dynamics in the 2008-2017 period; **m** represents the number of actors in the branch; **t** is the number of years for which the analysis was performed

$$Rs_{NACE} = \frac{\sum_{j=1}^{t} Rs_{NACE_j}}{t} = \frac{\sum_{j=1}^{t} \frac{\sum_{i=1}^{m} \frac{T_{ij}}{EQ_{ij}}}{m_{NACE}}}{t} \quad (6)$$

Where: **Rs** is the ratio of the turnover (T) and the equity (EQ) of the entities analyzed in dynamics in the 2008-2017 period; **m** represents the number of actors in the branch; **t** is the number of years for which the analysis was performed

Results

From the observational analysis were synthesized the data for the achievement of objective 1 of the research respectively the segregated analysis by domains of activity of sustainable development indicators with highlighting the critical years and the favorable years based on the data taken from the direct observation (Ministry of Finance website, section financial information).

Table no. 1. Segregated analysis

Sustainable development indicators	CAEN CODE	Historical minimum thousand euros	Average in 2008-2017	Historical maximum thousand euros	Minimum year of development	Maximum year of development	Global Economic Development Index
Sectorial development of the main actors in the forestry field in Romania by classes of activity (thousand euros)	210	17	2,794	33,247	2008	2014	9.95%
	220	3.40	1,349	17,478	2008	2014	30.01%
	230	4.50	3,233	8,211	2008	2015	-81.90%
	240	1.65	203	1,956	2008	2017	60.10%
Capitalization through fixed assets	210	0.60	448	4,762	2012	2017	-10.28%
	220	0.50	426	7,351	2008	2017	7.33%
	230	20	230	853	2009	2017	-11.68%
	240	0.75	29	249	2008	2017	-0.04%

Source: elaborated by the author

The assessment of the global index of sustainable economic development by sectors of activity and indicators of sustainable development as a result of the analysis from the direct observation, with the creation of a development scoreboard on activity classes, revealed that at the level of the sustainable development the most favorable activity is the one related to the exploitation forestry (CAEN 220) which has absolute positive scores on most of the indicators of sustainable development, with the exception of the economic performance reflected in profitability rates whose vulnerability score is negative. The average value of the calculated aggregate index is 40.26% and it is based in particular on performance on sustainable growth rates in the branch by field of activity.

At the opposite end, there is the activity related to the collection of plants and fruits from the spontaneous flora (CAEN 230), which records negative sustainable development indicators in most cases except for the systemic risk of the actors (insolvency risk). The negative value of the global index of -125.41% is achieved amid the accumulation of negative sectorial growth and negative sustainable growth rates. The other 2 sectors have global sustainable development indicators of 16.54% for CAEN 240 (forestry related activities) and -1.42% for forestry and other forestry activities (CAEN 210). The segregated analysis (objective 1 of the research) and the assessment of the global index of sustainable economic development by sectors of activity (objective 2 of the research) translates into accounting indicators according to the IAS 41 standard by correlating the quantified sustainable development indicators for each branch of activity with the main provisions of the standard as it follows:

Table no. 2. Current branch vulnerability table

Accounting aspects	CAEN 210	CAEN 220	CAEN 230	CAEN 240
Sustainable policies on transformation of biological assets	0.02	1.17	-2.38	0.05
Assignment of subsidies for the increase in value of biological assets	-0.54	0.63	-0.22	-0.01
Recognition of the separation of production of biological assets	0.59	1.94	-1.04	2.89
Recognition of the economic result in the overall result	0.01	-0.01	-0.01	-0.66

Source: elaborated by the author

It is noted that from the accounting point of view, the best score based on the global indexes of development in branch calculated by the rapid diagnosis model is achieved by the forest exploitation branch (CAEN 220) and the lowest score is achieved by the branch regarding the collection of plants and fruits of the spontaneous flora (CAEN 230). The values in Table 3 reflect vulnerabilities especially on the grant financing segment whose dynamics in Romania has been affected by the frequent macroeconomic monetary and financial policy changes. Vulnerabilities were also identified by the model at the economic outcomes level (negatively quantified for 3 out of 4 branches) and at the level of sustainable policies that according to the chart are influenced by the specificity of the branch in which the economic agent operates (fact that demonstrates hypothesis 1).

We believe that the situation actually affected by the inconsistency of policies and strategies at branch level can be influenced by the voluntary reporting process. In order to implement standardization, it is recommended to identify optimal reporting structures, to adapt specific accounting methods and specific key performance indicators (KPI) to allow for a more effective communication of non-financial aspects. In this context, it has been found that the influence of the volum reporting process can be significant, more precisely by up to 47% through the process of assignment of significance thresholds for the aspects foreseen in IPSAS 27. Therefore, the following scoreboard on the influence of voluntary reporting on aspects derived from IAS 41 is drawn, highlighting the impact of the global sustainable development index.

Table no. 3. Estimating the impact of voluntary reporting on the results obtained by applying IAS 41

Additional aspects introduced in the standards (IPSAS 27)	Impact	Additional aspects introduced in the standards (IPSAS 27)	Impact
Nominal fee for biological assets	0.50%	Voluntary disclosure of internal consumption of biological assets	2%
The delimitation of biological assets held for the provision of services	1.20%	Accounting for commitments on biological assets	8%
Limit currency risk in the field of biological asset transactions	5%	Recognition of future economic benefits	9%
Regulating the exchange of biological assets with recognition of their initial value	2%	Recognition of service potential	4%
Inventory at the time of reporting the biological assets	3%	Recognition of the surplus or deficit of biological assets through voluntary disclosure	8%

Source: elaborated by the author

Impact coefficients have been applied to the results of the vulnerability table resulting in the vulnerability table adjusted with the indicators taken over by voluntary reporting.

Table no. 4. Adjusted vulnerabilities table

Accounting aspects	CAEN 210	CAEN 220	CAEN 230	CAEN 240
Sustainable policies on the transformation of biological assets	0.00954	0.55809	1.13526	0.02385
Assignments from subsidies for the increase in value of biological assets	0.25758	0.30051	0.10494	0.00477
Recognition of the separation of production of biological assets	0.28143	0.92538	0.49608	1.37853
Recognition of the economic result in the global result situation	0.00477	0.00477	0.00477	0.31482

Source: elaborated by the author

The values adjusted in absolute amounts were the basis for building the vulnerability model presented in the methodology and calculated as it follows:

$$\hat{}CAEN220 = + 1{,}04*CAEN210 + 0{,}483*CAEN230 + 0{,}270*CAEN240 \quad (7)$$

(0,353) (0,0818) (0,0968)

n = 4, R-squared = 0,993, (standard errors in parentheses)

A regression model based on the smallest square method was used, the result of which is statistically high (99.3%) and we obtained confirmation of study hypotheses (hypotheses 1 and 2) by statistical tests of residual normality and heteroskedasticity which confirmed the absence of the phenomenon in the case of the null hypothesis thus demonstrating that the model is significant, well-defined and relevant to the objective under study.

Model 1: OLS, using the observations 1-4

Dependent variable: CAEN220

	Coefficient	*Std. Error*	*t-ratio*	*p-value*
CAEN210	1,04319	0,353387	2,952	0,2079
CAEN230	0,482955	0,0818248	5,902	0,1068
CAEN240	0,269889	0,0967560	2,789	0,2191

Mean dependent var	0,447188	S.D. dependent var	0,390818
Sum of squares of residues	0,008508	Standard error of regression	0,092241

Breusch-Pagan test for heteroskedasticity -

Null hypothesis: heteroskedasticity is not present

Statistic test: LM = 4,50746

with p-value = P(Hi square (3) > 4,50746) = 0,211626 (8)

Discussions

By studying the financial and accounting literature and the legislation in the field, it can be noticed that at international level there was a low interest from the world legislature for the financial reporting of agricultural enterprises. There is little intervention at national

economies level, where responsible authorities have shown interest in the financial reporting framework of entities operating in the agricultural sector. In the 1980s, the only statements on the matter were formulated by the American body (AICPA) and by the French government that compiled Comptable Generale Agricole (PCGA) where recommendations were made for the evaluation of agricultural assets using historical cost.
The accounting policies provided in IAS 41 require the recognition in the income and loss statement, among the positive and negative amounts of income, also the profit or loss attributable to the initial recognition of fair value of a biological asset and the variation for each financial exercise over the fair value attributable to the various items recorded in the balance sheet.
At international level, the set of International Public Sector Accounting Standards (IPSAS) has been established and acknowledged, but despite this, no Member State has fully implemented them at present (Socoliuc, 2018). Specific to this research is IPSAS 27 - Agriculture based on IAS 41 - Agriculture. Based on this statement, we will continue to present a comparison between the categories of standards in order to better identify the existing differences, because even if IPSAS is inspired by IAS, it should also contain specific notes that fit it among international standards (Socoliuc, 2018).

Table no. 5. Comparison between IAS 41 and IPSAS 27

IAS 41	IPSAS 27
Objective: To prescribe accounting treatment and information on agricultural activity	
Agricultural activity is the management by an entity of the biological transformation and harvesting of biological assets for sale or for processing into agricultural products or additional biological assets.	Agricultural activity includes operations for the distribution of biological assets free of charge or for a nominal fee.
It does not include such a clarification.	The domain section clarifies that the biological assets held for the provision or provision of services are not addressed in this standard.
Includes requirements for government grants related to biological assets valued at fair value minus the costs for selling.	Does not include government subsidy requirements and guidelines because IPSAS 23 - *Revenue obtained from non-currency transactions* (taxes and transfers) provides the requirements and guidance on government grants outside currency transactions.

Source: elaborated by the author

In conclusion, even if before the adoption of this order, the record of agricultural activity was impeded in the practice of professional accountants, at present these legislative changes were only partially made visible through the adoption of new accounting accounts. Regarding the recognition and assessment of the forest fund in accounting, practitioners and professionals from the domain have faced difficulties both at the public and private levels. Thus, the forest fund as such and its component elements are not registered in the accounting because there is no synthetic account so called; likewise, it is not recognized or evaluated.

Conclusions

The study carries out a clear diagnosis based on the information collected through the observational study of the forestry branch (on the four types of CAEN codes identified in the branch). The proposed model tests the hypotheses of study in the sense of their confirmation demonstrating that there is a relationship of interdependence between the development of the entity, financial reporting, voluntary reporting and economic performance. The study is an original approach to dynamic analysis on four CAEN codes, succeeding in positioning novelties on accounting regulations and identifying the added value of voluntary reporting at the accounting information quality and the materialization of the public authorities' action directions for the implementation of viable forestry fund protection and development policies. The limits of the study consist in particular in the fact

that the sample only included one branch, the authors proposing to expand their research to other branches geared towards biological assets.

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BUILDING QUALITY DECISION MAKING IN HEALTHCARE

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Abstract
Decision making in healthcare it`s a very complex and dynamic process, but it is essential due to high stakes: on one hand doctors should choose quickly the right action when their patients' life is at risk and on one the other hand hospitals must ensure quality care with limited resources generating sustainable income. The purpose of this paper is to identify the what defines a quality decision making process in healthcare, using the documentary study as a research method. The findings reveal that quality decision making in healthcare depends on the decision making model chosen, ethics, as well as the type of manager of the healthcare facility. By creating a corporate culture for quality and leading by example, healthcare managers can encourage clinical and non-clinical staff to participate in quality improvement efforts.

Keywords
quality, decision making, healthcare

JEL Classification
I10, I19

Introduction

The healthcare system is a complex system that includes organizations, individuals, institutions, and actors that seek to promote, maintain, and restore physical health. The decision-making process in the health sector can generally be classified into two categories. On the one hand, decisions on treatment options and therapies are made at the clinical level. On the other hand, at the level of healthcare management, the resources and the provision of services are planned. In the latter category, healthcare has long attracted classical approaches to decision-making and management sciences to support planning and decision-making (Craig Kuziemsky, 2016). Many of the methods of planning the decision-making process and of managing efficiently the risks generated by these, adopted by the healthcare organizations, both public and private, have been taken over from the business sector. In many ways, healthcare has become a complex business that uses many of the same processes and much of the same language as the most sophisticated business corporations.
Healthcare professionals, managers and administrators of hospital units have a great deal of pressure to make the best use of the resources available to achieve excellent results. In addition, they need to ensure the high quality of care at a lower and more competitive cost. Healthcare managers shape the unit they lead by the important decisions they make. These decisions concern staff recruitment, technology acquisition, allocation and spending of financial resources. In healthcare organizations, managers need to make frequent decisions

based on the information gathered, they must decide how to lead and organize others, how to control processes in the system and help others make their own decisions. Managerial decisions do not just focus on delivering the best patient services, but also on meeting established performance goals. Finally, decisions taken by one person affect the performance of the hospital unit as a whole.

The healthcare system decision-makers engage in three types of decisions: public policy decisions that determine what services will be offered, clinical policy decisions that identify who will receive clinical services, and policy decisions administrative services that determine where services will be located and how they will be supported and managed (Peter A Bath &Andrew Booth, 2008). Characteristics of the decision, such as the complexity and magnitude of the decision precedent, influence both the speed of decision-making and the level of support information commonly accessed in the decision-making process. Also, a high level of uncertainty has been shown to reduce adherence to a "rational" decision-making model and pave the way for more flexibility and judgment in decision-making (Iestyn Williams & Hilary Brown, 2014).

The decision making process within healthcare organizations is influenced by a number of factors, one of the most important being the pressure on economic resources. The financial constraints contribute to decisions to reduce investment in medical establishments (Bazzoli et al., 2007). Among the factors influencing the decision-making process the economic climate, the political and legal atmosphere, the organizational objectives and culture, the personal values and philosophy of the decision-makers, as well as the emotional nature of the decisions (Peer and Rakich, 1999).

Taking into account the unicity of the healthcare environment, the aim of this paper is to highlight the importance of the decision making process in healthcare and to determine what makes a quality decision making process in healthcare.

Healthcare decision makers

Depending on the position of authority held, decision-makers of medical units perform distinct roles. Therefore, first-line managers (supervisors, administrators, coordinators) are responsible for those directly involved in providing healthcare and providing them with the materials and information needed to perform their duties. Although the size of the hospital affects their role, the first-line manager is generally involved in managing staff within a particular healthcare department. They ensure that patients receive the correct services in an optimal manner. In addition, a first-line manager must understand ensure that the patient's medical records are properly maintained.) First-line managers in medical units have tasks related to operational management: recruiting and training nurses, performing performance appraisals, promoting and releasing employees, designing and organizing workloads (Lin et al., 2007).

Middle managers oversee the activity of first-line managers and have titles such as general manager, regional manager and division manager. They facilitate communication and collaboration between doctors, top managers and professional staff. Middle managers influence the implementation of health innovation. They disseminate and synthesize information on innovation, mediate between strategy and day-to-day activities and sell the implementation of innovation (Awowale, 2017).

Top managers are responsible for organizational decisions. These individuals usually have titles such as president, executive vice president, general manager, executive director, They are also involved in budgeting, resource allocation, technology acquisition and strategic planning. Top managers are the stimulus of strategic change and are responsible for the strategic direction and financial management of the medical organization. Also, top managers have an important role in improving clinical quality. By creating a corporate

culture for quality and leading by example, senior managers could encourage clinical and non-clinical staff to participate in quality improvement efforts (Weiner et al.,1997).
There are six main sources of evidence used by health managers. A first source represented by scientific evidence published in academic journals. This source is mainly used to substantiate organizational decisions. The hospital information system, the management dashboard and internal evidence have been identified as facts and information of the hospital, being the second source of evidence used in health management. Hospital managers also use political-social development plans as a source of quality in decision-making. A fourth source of evidence is the professional experience and judgment of hospital administrators. The professional experience of managers differs in terms of intuition and personal opinion, reflecting the acquired expertise. The fifth source of evidence consists of religious ethics and beliefs. This evidence is based on the beliefs of staff and managers that influence attitudes and, consequently, skills and competencies. Ethics can help manage organizational behavior and interaction between staff members. A sixth source of evidence is represented by the values and expectations of all stakeholders, such as employees, administrators, board members (Ali Janati et al., 2017).
In a similar study, Abdolvahab Baghbanian et al. (2012) found that most of the resource allocation decisions, considered the context, and were not based solely on the use of technical or research data. The main contextual factors that have habitually contributed to resource allocation decisions are policy directives or requirements to pursue national policies, ethics, common knowledge, organizational and institutional complexity and economy. The results of the study have also shown that the decision-making process is highly dependent on the operational context in time, place and purpose, and the decision makers often used common knowledge, experience, intuition and judgment. In particular, the study highlighted the importance of collective intelligence and practice communities in making decisions to discuss possibilities and outcomes (Baghbanian et al., 2012).

Decision making models in healthcare

In order to determine the decision model used in the public medical units in Poland, Karolina Szymaniec-Mlicka (2017) conducted a qualitative research based on the interview method. 8 hospital managers have been interviewed and the analysis of interview responses was based on the method suggested by Paul Nutt, which supports the allocation of responses to the appropriate phase of the decision-making process (problem definition, conceptualization, solution specification, evaluation and implementation). The research has shown that the interviewed organizations are dominated by the historical decision-making model, so directors mainly use proven solutions in other organizations. According to Paul Nutt, this model includes the formulation, specification and implementation of solutions. The solution's conceptualization phase has not been included in the model, as solutions derived from the practices of other similar organizations apply. This model allows decision-makers to start from a feasible real situation that is a tangible and solid basis for decision-making. The high popularity of this solution derives from its relatively low cost of application. The participants of this study indicated that they base their decision making process on the following sources of information: the knowledge and experience of directors and employees, the data available in the organization, the Internet, informal discussions with people in the medical field, literature, consulting companies, market observation (Szymaniec-Mlicka, 2017). Managers have also the highlighted different aspects of the decision-making process, such as:

- Dependence on the political environment;
- Employees' resistance to change,
- Doing business in a very sensitive sector where decisions need to be thoroughly analyzed in terms of "patient welfare";

• Lack of an integrated system of medical and managerial information in the medical system,

• Dependence on too many external entities and interest groups;

• Financial constraints - too little financial means to ensure freedom of action;

• Trade unions, which often cause too much confusion and are not open to change and dialogue.

Another decision making model that can be used in healthcare is the one developed by Kristina L. Guo (2008). The author describes a step-by-step process for decision-making and created a model to help health managers make quality decisions, which ultimately determines the success of hospital units. The model is called DECIDES, each letter of the English acronym representing one of the six specific activities to be performed before proceeding to the next step (fig. no.1).

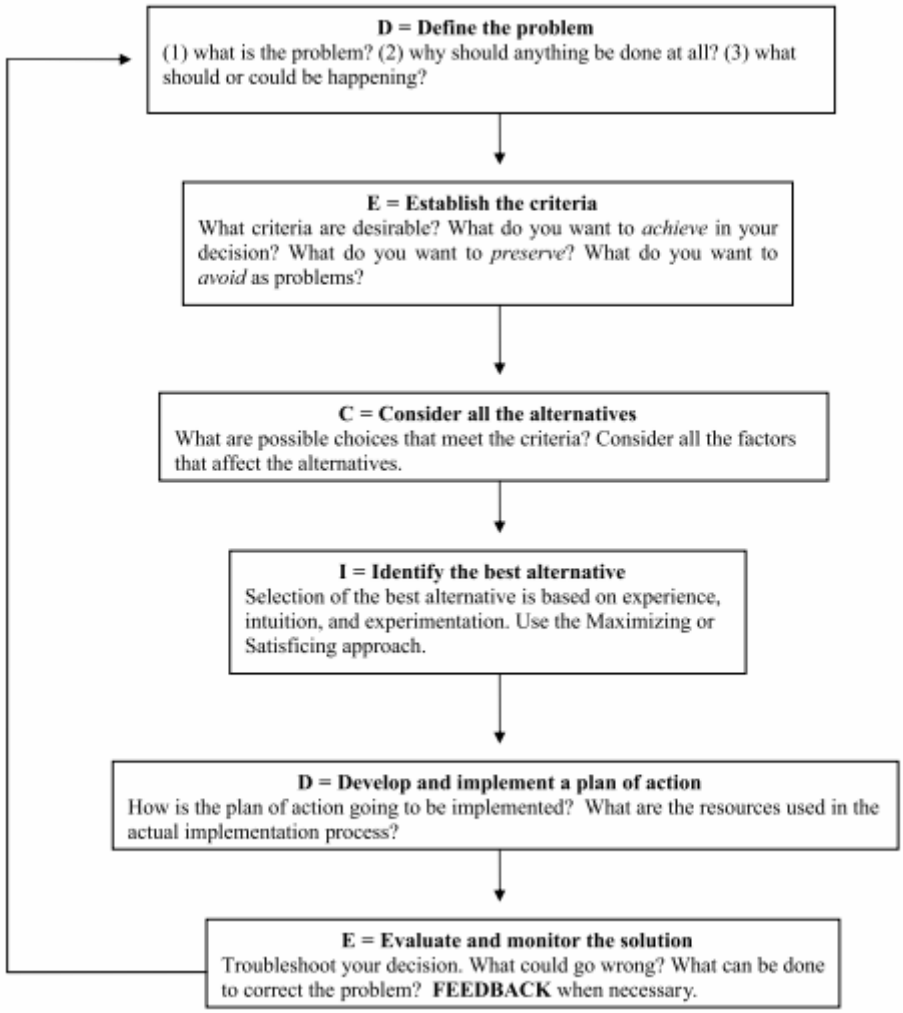

Fig. no. 1 DECIDE: a decision making model in healthcare

Source: Guo, K.L., 2008. A Decision-Making Model for More Effective Decision Making by Health Care Managers, The Health Care Manager, 27(2), pp. 118–127

Among the existing decision making models, José Márcio da Cunha Pacheco Júnior & Romeu Gomes (2016) consider that the incremental model formulated by Charles Lindblom in 1959 fits best on the sanitary system. This model involves the existence of several actors

involved in decision making. The incremental model argues that public sector decision-makers do not want to lose political support for a decision that is being taken, nor lose the support of important community groups (Pacheco Júnior & Gomes, 2016). As a result, the decisions to be adopted will consist of relatively small changes in existing procedures, but which will nevertheless help to improve the problematic situation and minimize the number of institutions/persons "disturbed" by these new measures. At the same time, in the incremental model incorporating behavioral hypotheses, decision-makers can only be understood as social actors, people with cognitive limitations that have constant interactions with other actors and are involved in social constructions. The idea is to add structure to the decision-making process so that there is less centralization and greater plurality of society.
Another approach in decision-making within hospital units is evidence-based management. The idea of this concept is that high-quality decisions require both critical thinking and the use of the best evidence available. These "evidence" can come from both scientific research and internal hospital information and managers' professional experience. Taking into account that hospital management decisions have a significant impact on the effectiveness of delivering quality patient care and on the success of hospitals, the application of evidence-based management would improve the competence of decision-makers and their motivation to use more scientific methods in decision-making in hospital management. Therefore, evidence-based management is the guarantee of an efficient management (Janati et al., 2017).

Ethical decision making in healthcare

Healthcare is best understood as a social or public good that should be managed to meet the community's health needs. The way in which healthcare is distributed and delivered is, to a large extent, a matter of appropriately allocating a public good. In other words, the purpose of providing healthcare is to maintain and improve health, alleviate disability and give everyone access to appropriate health services regardless of their ability to pay.
For most people, the term "healthcare ethics" still suggests clinical problems, not management issues. In this context, it is necessary to present the four ethical times in the medical units (Daniela Agheorghiesei, 2013):

- Personal ethics – includes the principles, values and norms of ethics assumed and respected by the individual in the society in which he lives, in everyday life;
- Professional Ethics - refers to standards and expectations regarding moral behavior, acceptance of specific moral obligations in the exercise of the profession, materialized in codes of professional ethics;
- Ethics of the society - the system of values, norms and moral principles that define its identity, which its members adopt collectively, to which they subscribe and promote for good harmony between them, and the good development of the community;
- Organizational ethics - combines professional ethics with clinical practice within the hospital unit, giving rise to institutional principles and rules.

Healthcare ethics is a commitment to provide high-quality services and a commitment to respect patients' rights. This emphasis on patient care is, however, somewhat different for managers and doctors. Managers must recognize individual patients as part of a serving community of patients, having the responsibility of managing the limited resources available for healthcare services. They must be able to develop and implement fair procedures for assessing the requests made by different actors and for prioritizing decisions on resources (Leonard J. Weber, 2001).
The ethical management perspective focuses on the mission of the organization and the actors that are affected by its activities. As clinical ethics is an essential skill of medical practice, organizational ethics is a basic skill of medical management. Healthcare managers

are critical to the success of the medical system's performance, being creators of structure and support. Therefore, healthcare managers have an ethical obligation to provide a safe environment for patients and employees, as well as liaising with the community and third parties. This task requires proper knowledge on system functions, human relations, finance, and management, as well as a deeper understanding of the principles of ethics and ethical behavior from an individual, organizational and societal perspective. Ethics must be a way for hospital unit managers to manage healthcare activities every day (Morrison, 2011)

Generally, ethics in decision-making involves the process of evaluating and choosing alternatives in a manner consistent with ethical principles. The key factor in the decision-making process is to realize that hospital units are human-made systems, all of which are affected by the decisions managers take. In addition, unlike other organizations, in the medical field managers need to make ethical decisions about resource allocation, medical consent, experimentation, or death (Peer & Rakich, 1999).

At the same time, when a decision must be taken that cannot respect all legitimate interests that are consistent with a particular situation, the best decision is one that relies on the recognition of what is of greater ethical importance. In other words, if all legitimate interests cannot be respected, a wise choice is one that respects the most important. Often, the nature, purpose and role of the healthcare organization is management, so most decisions are based on them (Weber, 2001).

On the other hand, tools such as ethics committees, conflict of interest declarations, written policies and procedures, and / or staff ethics to assist health care managers in decision-making are of main importance. With these and other appropriate organizational mechanisms, conflicting interests of patients, families, doctors and other carers, employees, organizations and communities can be properly balanced (Perry, 2002).

Conclusions

To sum up, decision making in healthcare is a particularly difficult process. The decisions taken by the managers of the hospital units affect the health of people and communities around. In other words, managerial decisions, no matter how large or small, affect health institutions in a major way and it is essential for managers to properly assess the context before making a decision.

A quality decision making process in healthcare depends on there essential elements: an appropriate management, a suitable decision making model and ethics. Firstly, healthcare managers are critical to the success of the medical system's performance, being creators of structure and support. Secondly, depending on the type of healthcare facility and its mission, the manager has to choose the best decision making model, the one that best meets the needs of the hospital and patients. Last, but no least, healthcare managers have an ethical obligation to provide a safe environment for patients and employees, as well as liaising with the community and third parties.

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WINE CLUSTERS IN THE PERCEPTIONS OF BULGARIAN RESIDENTS

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Abstract

Wine is a cultural phenomenon and a central point of a global industry. The wine sector has long history within Europe. During the last few decades international competition among emerging new actors on the wine market is increasing. Clusters are playing an important role in wine sector as being the major possibility for the industry to promote to foreign markets and to develop a strategy for a successful internationalization and distribution abroad. The aim of this paper is to explore among Bulgarian residents the feasibility for the sector to develop wine clusters based on different criteria. The research is an empirical study based on online survey with 5 groups of questions among residents of different age, education and life status. The main conclusion is that wine clusters in Bulgaria are a viable construct. Creation of wine clusters has the potential to make sense for customers in Bulgaria. Wine clusters to be created should be both regionally based and built around traditional grape variety processing.

Keywords

Wine clusters, Bulgarian wine, grape variety, consumer perceptions in Bulgaria.

JEL Classification

D12, M31, O13, Q17.

Introduction

Wine industry in Bulgaria is experiencing new challenges due to changes in demand - taste of customers and of everyday life habits.

In last three decades, vineyards of traditional grapes in Bulgaria are diminishing in favor to more recognizable grape varieties, the worldwide renowns, mostly of French and German origin (i.e. “Cabernet Sauvignon”, “Merlot”, “Traminer” etc.).

One possible way to boost the popularity of local wines is to create wine clusters, an area which is still underdeveloped in Bulgaria. There is a growing interest in wine clusters in Bulgaria (Markov, 2013; Kirechev, 2012), the notion of a cluster is well-known also in other areas (Dimitrova, Lagioia and Gallucci, 2013). But although there are some attempts to establish wine clusters - several wine clusters do exist since the mid 2010s (i.e. “The antique path of the Thracian wine”, “Danube wines”, “The path of Dionissos”, “The path of Orpheus” etc., some of them are part of a touristic cluster), these clusters didn’t gain enough popularity until now.

The aim of our study is to explore the perceptions of potential customers to wine clusters in Bulgaria, we use an own developed survey among Bulgarian residents. The rest of the paper is organized as follows: section two is a literary review, section three presents the instrument, in section four there are the results of the study and the discussion, section five concludes.

Literature review

According to common practices, a cluster is a "geographically proximate group of interconnected companies, suppliers, service providers and associated institutions in a particular field, linked by externalities of various types" (Porter 2003, p. 562). Clusters have been recognized as important triggers of innovation and corporate performance due to simultaneous cooperative and competitive relations between the different companies within. On the one hand, through cooperation geographically concentrated participants in the clusters can benefit from shared access to information, financial and human resources, markets, suppliers and distribution channels. On the other hand, competition makes companies strive for quality improvement, price reduction and search for new market opportunities. Porter (1998) emphasizes the importance of location for building competitive advantage in a global economy. Economists agree on the key role of the clusters in increasing efficiency, productivity and return to investment (Enright and Roberts, 2001; Porter, 2003; Morosini, 2004; Delgado, Porter, Stern, 2014).

Porter (1998) has chosen as a good illustration of his cluster concept California wine cluster as "a geographic concentrations of interconnected companies and institutions". Dana et. al. (2013) point out recent shift of the wine sector from "an emerging oligopoly composed by multinational large size firms" to "strongly fragmented sector with numerous small and medium-sized enterprises (SMEs) in competition within both the domestic market, and increasingly in international markets". Overcoming economic challenges, value creation, reaching economies of scale and economies of scope for SMEs in the wine sector is much more feasible at cluster-level than at a company-level. According to Fensterseifer and Rastoin (2013) wine clusters provide companies with resources, crucial for their existence and development, which can be classified in five types – natural, technical, institutional, social and reputational capital. Cluster approach is applied in wine industry studies in Argentina and Brazil (Alderete, 2014), Brazil and Chile (Mattia et. al., 2015), USA (Hira and Swartz , 2014), New Zealand (Dana et. al., 2013), etc.

Anderson proposes two ways of wine industry SMEs development – through volume of production and product differentiation. The concept of "Terroir" defined by Seguin (1988) as "an interactive ecosystem, in a given place, including climate, soil and the vine" can be used for collective differentiation. Gilby (2018) adds wine-making expertise and the human factor to the characteristics of the place as basic elements of the "terroir". Riviezzo et. al. (2016) accentuate its role as a powerful branding tool which can be applied in managing wine consumers' authenticity and quality perceptions. Authors like Ditter (2005), Bélis-Bergouignan (2011), Riviezzo et. al. (2016) are combining the two concepts considering "terroir" a proper basis for setting boundaries between separate wine clusters.

In Bulgaria the concept of "terroir" is still not very popular, mainly due to the fact that the shift in the wine sector, from few large size firms to numerous SMEs still hasn't occurred.

The survey

In order to assess the perspectives for wine clusters creation in Bulgaria, we explore the perceptions of Bulgarian residents about some of the main characteristics of wines.

Our instrument is an online survey with 5 groups of questions. First, we try to monitor how our respondents identify the traditional Bulgarian sorts of vines, next we ask about

traditional wine producing regions in Bulgaria, another important question is the potential to use local grape varieties. Further we explore whether respondents distinguish between small and big wineries and the wines they produce. The last group of questions is about the impact of wine clusters on demand of wine.

We use a survey consisting of a mix of Likert-type scale items (see Likert, 1931), combined with questions of closed type answers. The former we use to study the potential to introduce wine clusters in Bulgaria, and the latter - to assess the prospects for practical implementations of local wine clusters.

For the main scales our respondents were asked to fill out a 5-point Likert scale survey. In the construction of our survey, we follow the common prescriptions for creating a Likert scale from scratch (see Croasmun and Ostrom, 2011). First, we define the focus, next we generate the potential scale items and further we narrow down the items keeping items that are good discriminators.

We opted for a Likert scale (1-5) with a neutral type of response - SD (Strongly disagree, 1), D (Disagree, 2), U (Undecided, 3), A (Agree, 4), SA (Strongly agree, 5) with a mid-point (3). We motivate this choice by the aim to not force our responders to be obliged to give definitive answers, i.e. to favor one response over others. In our case, a Likert scale with mid-point may reduce possible response bias, because if a neutral response option exists, responders are not required to decide one way or the other on an issue (for discussion see Fernandez and Randall, 1991). Although this concerns mainly socially sensitive matters, given that in our survey we study also some historically motivated facts, avoiding biased answers seems suitable.

We define three scales, consisting of 10, 12 and 10 items each, organized in multi-item statements.

Results and discussion

With Likert-type scales, it is essential that the researcher calculates and reports Cronbach's alpha coefficient for internal consistency reliability. Our interpretations of internal consistency follow the traditional views (see Webb et. al., 2006), where coefficients close to or above 0.80 are considered sufficiently reliable to make decisions about the appropriateness of the test uses. Aside from alpha, following Gliem and Gliem (2003) we conduct also a factor analysis to determine the dimensionality of the scales.

First, we ask about grapes - a block of 10 questions, forming our first scale. Do the respondents distinguish between local grape sorts and the ones of foreign origin? Cronbach's alpha for this group of 10 questions (the standardised alpha based upon the correlations) is 0.77, which is a reasonably high value (acceptable - for details see Gliem and Gliem, 2003).

Our first scale "Grapes", is defined by 10 items - names of grape varieties, with "Mavrud", "Gamza", "Dimyat", "Pamid" and "Misket" being local, and "Sangiovese", "Cabernet", "Merlot", "Muscat" and "Rkatsiteli" being global or of foreign origin. The term "Sangiovese" does not appear in the names of wines, marketed in Bulgaria, unlike the rest of the foreign origin grapes. The question we ask is: "Which of the following grape varieties you think are Bulgarian?"

The respondents distinguish well between local and global grapes.

Differences by sex of the respondents exist only for two of the grapes - "Muscat" and "Misket", differences by age exist for the grapes "Mavrud" and "Pamid". Education, work status and taste preferences do not influence the scorings - ANOVA tests (one-way) do not reject the null for all of the grapes.

The internal structure of this block of question proved to be bifactorial, with the first factor closely mapping the "local - foreign" dimension. The second factor seems to reflect the

overall knowledge of our respondents to the grape varieties, and can be interpreted as a "known - unknown" dimension - see Fig. no. 1.

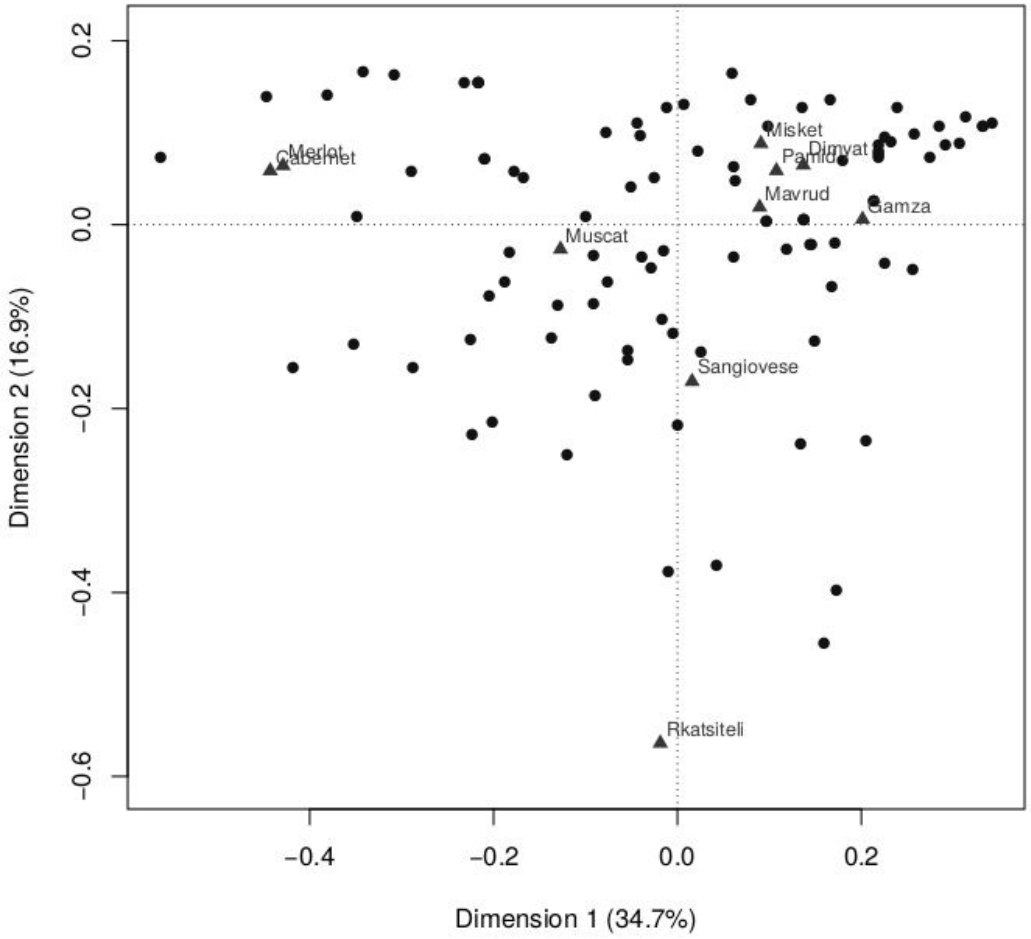

Fig. no. 1 Factors (dimensions) in "Grapes-scale"
Source: Authors' calculations

Scale "Regions" consists of 12 items about locations - "Which of the following regions do you consider as the 'most winery'?", with scores for 12 Bulgarian regions. Cronbach's alpha is also high - 0.86 (total). The factor analysis does not suggest that of more than one factor exists - the scale can be regarded as unidimensional.
Scale "Perspective grape varieties" consists of 10 items, a mix of existing ("Asenovgrad mavrud", "Vraza misket", "Varna misket", "Suhindol gamza", "Vidin gamza", "Varna dimyat") and non-existing ("Silistra dimyat", "Dobrich mavrud", "Nessebar pamid", "Pomorie mavrud") grape names. The question: "Do you link the following wines to a certain producer?" The factor analysis suggests the existence of one factor, the scale is unidimensional. Respondents do distinguish well between existing and non-existing grape varieties - "Asenovgrad mavrud" (3.05), "Vraza misket" (2.47), "Varna misket" (2.76),

"Silistra dimyat" (1.85), "Suhindol gamza" (2.60), "Vidin gamza", (2.04), "Varna dimyat" (2.80), "Dobrich mavrud" (1.79), "Nessebar pamid" (1.67), "Pomorie mavrud" (2.45).
Our next two questions are: “Which of the following wineries do you think are big?” and “Which of the following wineries do you think are small?” with "Varna", "Leventa" and "Magura" being small, and "Katarzhina", "LVK Suhindol" and "LVK Targovishte" - big ones. Factor analysis suggests that both scales are unidimensional. We “mirrored” the answers of the first question (whether the winery is big), subtracting the answers from 6, i.e. if the answer was 1 (strongly disagree), it became 5 (strongly agree), in order to compare answers to both questions. By juxtaposing the answers we are able to discover statistically significant differences (t-tests for all 6 wineries have p-value below 0.01). The respondents are not confident in their knowledge about existing wineries in Bulgaria. This fact reflects on the one hand the existing multitude of wineries, and on the other hand the small volume of information, Bulgarian customers are searching about wine producers.
To the question: “Which wineries make better wine?” two thirds of the respondents (66.3%) choose “the small wineries”, and one third (33.7) - “the big ones”. The public in Bulgaria is aware of the advantages of artisanal wine making, there is a sound ground for wine clusters.
Our next question is: “Which is the most quality wine?” (in bottles, in boxes or draft), with “in bottles” overwhelming as answer (98%). The question makes sense, because there is a long tradition in Bulgaria of making homegrown wines, from privately owned, small vineyards. In the last decades the tradition goes down gradually, but it still does exist. Despite the poor quality in most cases, “home wines” are regarded as “more natural” than the professional ones, with “box” or “draft” seen a possible replacement (see Boshnakov and Marinov, 2013).
Our next question is whether the region matters in wine production (for the same grape variety), or the modern technologies erase the differences. The respondents (91.6%) consider the region being very important.
To the question “Potential Bulgarian wine clusters will make more sense for the customers mainly...” with possible answers “abroad (in Europe)”, “abroad (outside Europe)” and “in Bulgaria”, 47.4% of the respondents opt for “abroad (Europe)” and 21.1% for “abroad (outside Europe)” with only 31.5% emphasizing the importance of wine clusters for local customers. We consider that this is due to the lack of experience and the underdevelopment of the local market.
Next, we ask three questions about some global wine clusters: “What is Beaujolais?” - 75.8% identify it as “a wine”, and 10.5% as “a cluster” (for this question, multiple answers were allowed); “A wine from USA you connect to…” with “Napa valley” as the prevailing answer (88.4%) and “A wine from Italy you connect to …” with “Tuscany” as the prevailing answer (89.5%).
Our respondents do link the wines with the most popular regions from the respective country.
The last question is about an often used idea for wine clusters - “Do you think that ‘A wine route’ or similar, a route of several dozens of kilometers would make sense for Bulgaria?”. Most answers are affirmative, with 56.8% “of course” and another 14.7% “in Bulgaria there are such things already”, scepticism is 9.5%, and the rest 18.9% is “I don’t know”.

Conclusions

Results of our research show that wine clusters in Bulgaria are a viable construct. Bulgarian residents do distinguish between artisanal and big factory wines and among different grape varieties. Our research supports the view that creation of wine clusters has the potential to make sense for customers in Bulgaria.

At the same time the underdevelopment of the local wine market, especially in the premium segments, does not allow to the respondents to distinguish between different types of market players.
Results from our research show that wine clusters which are to be created on both regional basis and traditional grapes seem to have a better potential.

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E-GOVERNANCE CAN PROMOTE TRANSPARENCY IN PUBLIC ADMINISTRATION?

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Abstract
Only a few years ago we began to talk about the Information Society and eGovernment, also called e-Government (or electronic government). The rapidity of technological developments in recent years has made digitalization penetrate into our everyday lives, making it an indispensable normality. Undoubtedly, these changes have also been felt in public administration so that digitization of public services is a subject that can no longer be postponed. Some theorists claim that today we are faced with great pressure to move from "governing" ("top" leadership, usually representative) to "governance" (self-determination in terms of competition) to the leadership of differentiated entities.
The disruption between e-government and e-government is still disputed both by theoreticians and practitioners. At this point we could say that a compromise has been reached and the idea is that: e-government uses one-way communication protocol (from government to citizens or the business environment) whereas e-governance uses two-way communication protocol.
This article aims to highlight the characteristics of the challenges of the new governance challenges through information and communication technologies and the role they play in the transparency of public administrations as the principle of good governance.
The research methodology was based on a review of the literature as well as on an opinion poll conducted with the citizen consultative council through a questionnaire.
The results of our research allow public authorities to introduce new mechanisms and functionalities in the electronic governance system.

Keywords
e-Governance, transparency, public administration

JEL Classification
H11, I28, H82

Introduction

Jimmy Carter said about the government that "it is a mechanism of human wisdom to meet human needs. People have the right to expect these needs to be satisfied with this wisdom. "This very wisdom Jimmy Carter spoke about the concept of e-Governance in the context in

which traditional governance was no longer enough to meet human needs. step with the new trends generated by the digital revolution.
While definitions of e-Governance from various sources may differ widely, a common theme is obvious that: e-Governance involves the use of communication and information technology, and in particular Internet, to improve the provision of government services to citizens, other government agencies and businesses. e-Governance allows citizens to interact and receive services from the state or local institutions 24 hours a day, 7 days a week.
On the other hand, the notion of e-Government is the first to emerge in the theoretical and practical approaches. The simplest definition is that of the UN where eGovernment consists of using the world-wide web and internet the to provide government services and information to citizens. For the World Bank, eGovernment refers to the use information technologies (such as broadband networks, the Mobile Computing and Internet) by government agencies that have the capacity to transform relations with businesses, citizens and other government branches European Commission used the term e-Government when it referred to the use of information and communication technologies (IT&C) in public administrations combined with organizational change and novel skills, its major objective being to improve public services, democratic processes and public policies.

Problem Statement

Researchers around the world have been discussing paradigms about the differences between these terms for more than a decade, and some have published articles that wanted to be a synthesis of well-known opinions in the literature.
They conclude that E-governance or "electronic governance" uses information and communication technologies (IT&C) at various levels of the public sector, the government and beyond, in order to strengthen governance. E-governance implies innovation in leadership styles, debate and decision-making, how to access education, and listening to citizens as well as ways of organizing and delivering services and information, being seen as a concept wider than e-government (Palvia and Sharma, 2014).
If we agree with the idea that transparency is open communication between citizens and governments (Abu-Shanab, 2013) then we can test the hypothesis whether e-governance can influence this type of communication and in what sense.
Some empirical studies have studied the relationship between transparency and e-government in relation to the two separate steps used and tested for transparency: Corruption perception index (CPI) and open budget index (OBI) (Abu-Shanab, 2013). These studies have used secondary data available from international reports to investigate the relationship between transparency and e-government development.

Challenge of Research

Our challenge is to identify in the literature the implications of e-governance on transparency in communicating with governments, accepting the idea that there is a sensitive difference between the terms e-government and e-governance, as we have shown in the introduction.
Embracing the idea of researchers who believe that e-government has provided a holistic approach to governance for sustainable development(Bran *et al.*, 2014) (Ciobanu, Bran and Alpopi, 2018), thus ensuring efficiency, transparency, responsiveness and participation in citizens' delivery services, and that the relationship between e-governance and government transparency involves many facets and most studies have highlighted the relationship between transparency and open government. (Iyer and Subba Rao, 2017).

Research Methods

The research methodology was based on a review of the literature as well as on an opinion poll conducted with the citizen consultative council through a questionnaire. The questionnaire was administered to the members of the advisory council of a Romanian rural community and the data were introduced on the electronic platform www.chestionare.ase.ro. The questionnaire contained 29 questions out of which 4 about respondent data. The questionnaire was answered by 63 people, of which 25 members of the Citizens Advisory Council (CCC), ie 100% of CCC members, respectively. 2% of the local population, ie over 5% of the number of voting residents) or five times more than the number of local councilors (13 for a population of 3197 inhabitants). Education (Costache *et al.*, 2015), health (Carra *et al.*, 2016) and ensuring the conditions for creating jobs (Ciobanu, Bran and Alpopi, 2018) is in the opinion of respondents the most important areas that the government should consider them and over which should govern transparency.

Findings

Scientific literature widely discusses both e-governance and transparency in governance. In the Web of Science there are about 1,000 articles dealing with eGovernment and a relatively equal number in ScienceDirect. Over the last five years, around 100 new articles / year have been discussing this theme with different approaches and perspectives. Government transparency is a hot topic anytime in the literature with over 100,000 articles in the past 10 years registered in the data bases of the main pubic streams with over 1,000 new articles annually. A graphic representation of the subject by category is shown in Figure 1.

Fig. no. 1 e-Governance in Web of Science Categories

Source: Processing results from http://wcs.webofknowledge.com/RA/analyze.do

These visual representations, made directly by the web site of science, indicate suggestively which perspective of the subject is addressed. Thus, for e-governance, technology is predominant, and for transparency the main field of research is public administration and political sciences (fig. no. 2).

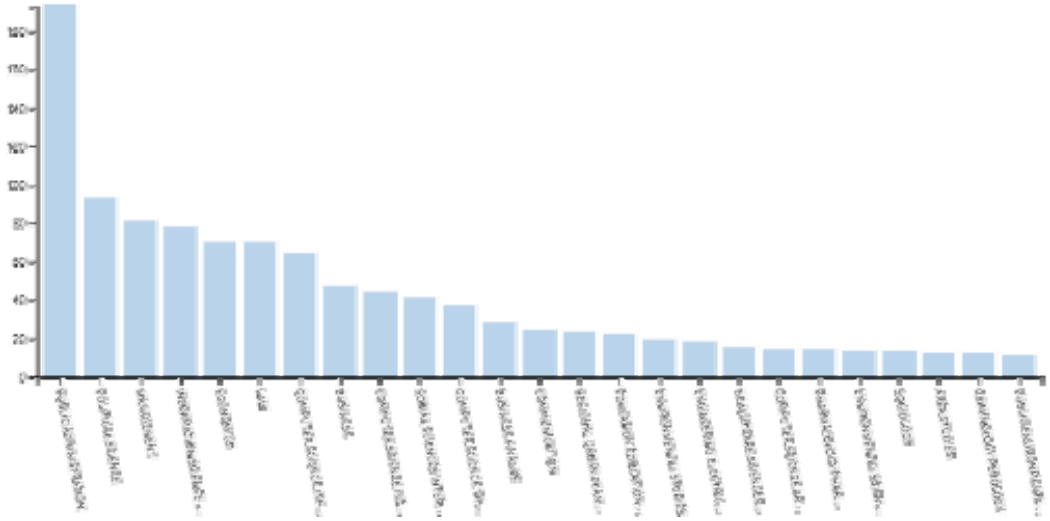

Fig. no. 2 Transparency in the Web of Science Categories
Source: Processing results from http://wcs.webofknowledge.com/RA/analyze.do

These analyzes have helped us to understand what has been emphasized in research so far and to pursue our research by trying to identify how transparency is being influenced by e-Governance.
A real help in our research was the opinion poll conducted in a locality in Romania. The size of the locality, population density and positioning were the selection criteria (Rădulescu, Bodislav and Burlacu, 2018). In the questionnaire the following findings were made: To the question: How do you appreciate your communication skills using your computer and the Internet? over 66% of respondents felt they had solid or medium knowledge (fig. no. 3).
In Romania, the internet connection of households is constantly expanding nowadays to over 80% of households, slightly below the EU average, as can be seen in fig. no. 4 based on Eurostat data.

Fig. no. 3 Skills ICT
Source: own processing

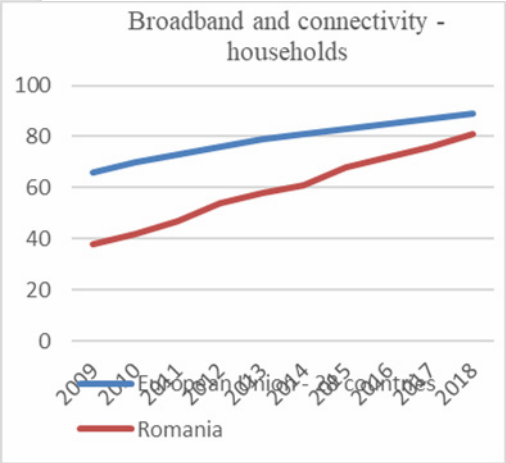

Fig. no. 4 Internet connectivity
Source: Eurostat

To the question: In which of the following issues do you want to have a say when deciding at a local level?, (fig. no. 5) the respondents indicated over 50% education, followed by health (42%), jobs (36.5%) and dwellings (21%).

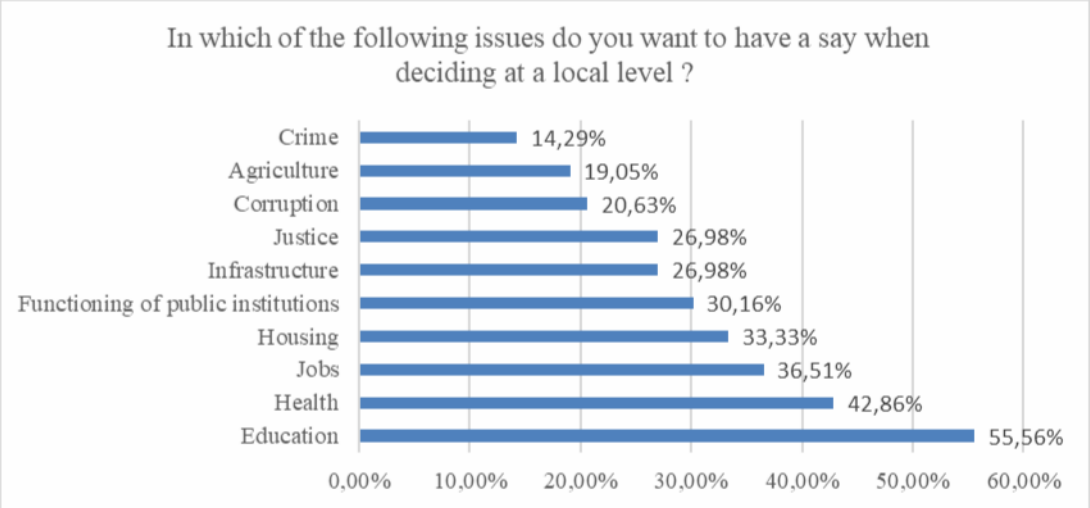

Fig. no. 5 Prioritize decision areas at the local level
Source: own processing

Thus, we find that at least in small localities, the functioning of public administration is more important than agriculture, infrastructure, justice or corruption being ranked 5th, immediately after dwellings.
A perception, perhaps not surprising but certainly important, we found it in the answers to the question: Which of these forms of involvement do you think best produces?
The first place in the respondents' preferences is contacting the media (30,16%) closely followed by a petition (28,57%) and a protest (26,98%). One in five respondents indicated that a solution could also come after contacting a public official or receiving a response to a local consultant. Only one in 10 respondents indicated contacting a local politician as a possible solution.

Discussions
The results of this research, corroborated with our previous research (Constantin *et al.*, 2018), have allowed us to identify both the current state of e-government in Romania as compared to the research trends (Burlacu, Gutu and Matei, 2018), the difference between e-government and e-governance, the skills of computer use on the internet and the phenomenon manifestation of digital divide as well as future research paths to take advantage of the current technological and ideological revolutions.
Using government websites to increase e-government capacity even in a democratic manner can be a great challenge today. Some researchers have even built a conceptual model for evaluation in this sense, which they called the DEWEM Democratic E-Governance Website Evaluation Model (Lee-Geiller and Lee, 2019). DEWEM as a tool for democratic electronic governance is based on the author's understanding, on three pillars of development: Transparency, Quality of Service and Citizen Involvement. Fill out this model with a new pillars: accountability authorities. Adapted and developed this model can be represented as in figure no. 6.
The pursuit of the evolution of research trends can be done today by using network analysis tools. For example, some researchers have analyzed with this technique the literature that highlights the shift from conventional governance to e-democracy (Bindu, Sankar and Kumar, 2019).

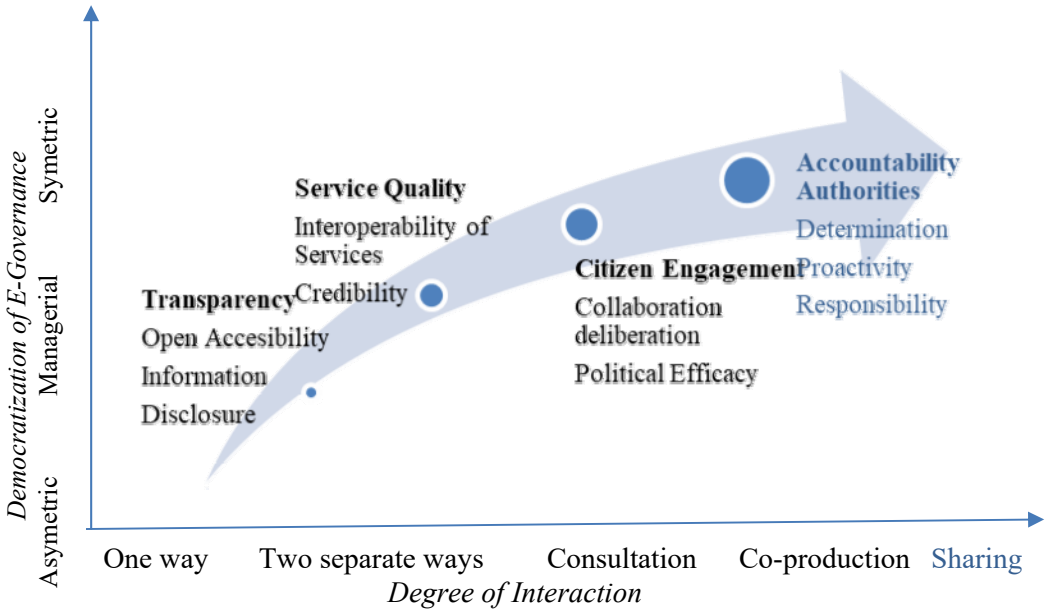

Fig. no. 6 DEWEM as an Instrument for Democratic E-Governance
Source: Adapted from Lee-Geiller and Lee, 2019

From Fig. no. 7 we can see that the first articles published in journals available in international databases (Web of Science Core Collection) have approached organizational transparency through eGovernment, relatively recently, since 2003, and sustained until today.

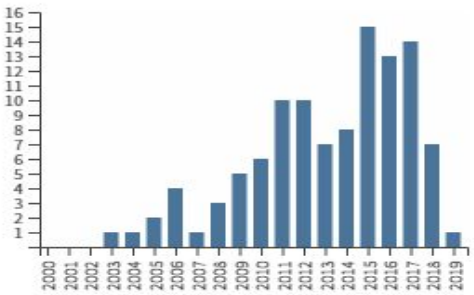

Fig. no. 7 Total Publications by Year
Source: Web of Science

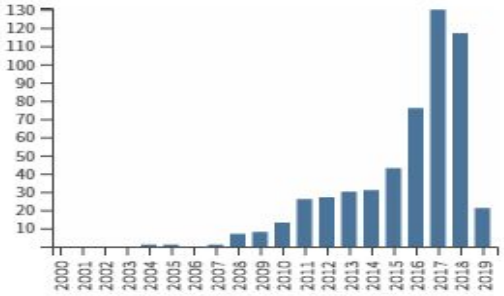

Fig. no. 8 Sum of Times Cited by Year
Source: Source: Web of Science

Recognizing the importance of these approaches is highlighted in Fig. no. 9 by the large number of citations (Web of Science Core Collection) that recontextualize the relationship between transparency and e-governance.
The first place with 89 citations obtained in 12 years since its appearance in 2006 is the article "E-government developments in European Union cities: Reshaping government's relationship with citizens" (Torres, Pina and Acerete, 2006). It re-contextualizes already 37 papers addressing the transparency issue in relation to the concept that was increasingly gaining the account at that time: e-government. The oldest article in the Web of Science Core Collection is titled "Electronic Governance - a Vehicle for the New World Order" and was published in 1999 Deb, G. K. (1999). Researchers predict realistic trends in e-governance and transparence is a key factor.

A visual analysis of the bibliographic references found in the Web of Science for the period 1975-2019 dealing with e-governance in relation to other terms is shown in Fig. no. 9.

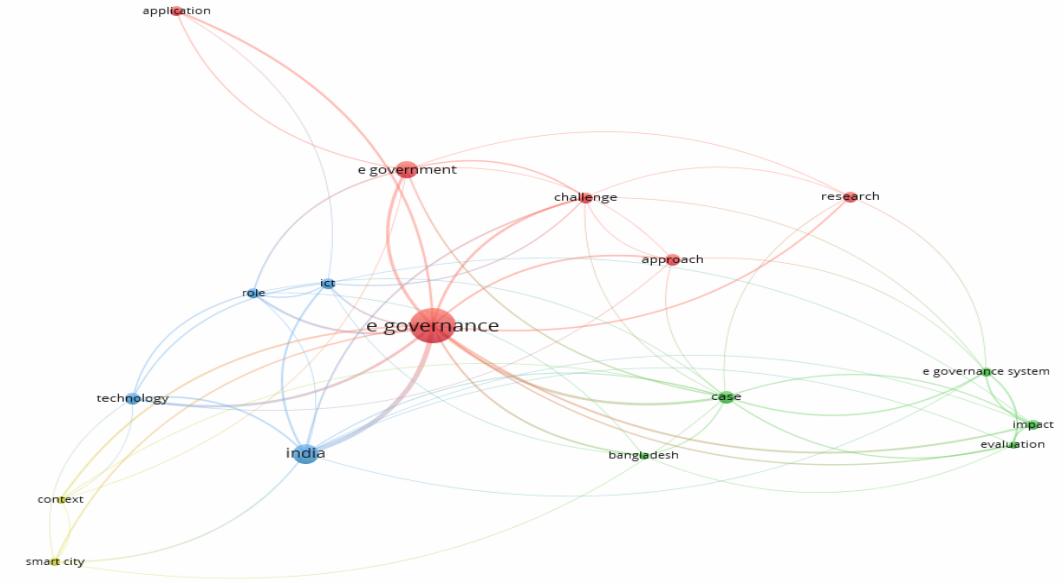

Fig. no. 9 Map of bibliographic references

Source: Made by authors with the VOSviewer application with Web of Science data for 1975-2019

In fact, there are many articles that discuss the issues of organizational transparency and many of them focus on the relationship with the public administration. The concept of transparency that we have followed in our reviews was, moreover, the one defined in our earlier submissions, namely "a routine information from external stakeholders that serves the purpose of improving our understanding of what the government is doing their" (Szabo *et al.*, 2016).

Conclusions

In conclusion, if eGovernment takes into account four major indicators such as (Commission, 2018): user centricity, transparency in governance, cross-border mobility and key activators with the five key prerequisites (Electronic Identification (eID), Electronic documents eDocuments, Authentic Sources, eSafe, and Single Sign On (SSO), e-Governance as self-determination in the conditions of competition through information and communication technology can greatly contribute to increasing government transparency if it is assimilated to global dissemination of information (similar to the media) and direct reactivity (petitioners) if it is assumed by a large proportion of the population that today has access to the Internet and has good computer skills over the internet.

So, from this perspective, the answer to the question: "e-Governance can promote transparency in public administration?" Is positive.

But a new question opens, which we will analyze in our forthcoming research, namely, whether transparency in public administration through e-Governance can be a decisive factor for good governance.

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STUDY ON EUROPEAN FUNDING PROGRAMMES FOR SUSTAINABLE DEVELOPMENT

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Abstract

The paper reviewed the main historical development steps that led to the Agenda 2030, the strategy Europe 2020 and the Horizon 2020 (H2020) funding programme. It analyses the interim reports and the actual status of the H2020 programme especially in relation impact and achievement of its objectives. By exploring the results some questions arose if the programme setup is in line with objectives and the strategy. The analysis leads to the assertion that overall the programme is very beneficial and should be exploited much better but it is questionable whether the high amount of coordination effort is really meaningful and justifiable and if the Eastern European countries should be more involved. Similarly, when planning the follow-up Horizon Europe programme, the European Commission should think about simplifying some of the rules and reporting so as not to fund an entire advisory industry with the European funding.

Keywords

Sustainability, European funding programmes, research and development, Horizon 2020, Horizon Europe

JEL Classification

Q01, O3, O44, E62, G28

Introduction

Global sustainability and resilience is a vision of a world without hunger and poverty, with economic stability and growth without endanger the ability of future generations by overconsumption of the natural resources, and a healthy and protected planet. But to achieve this, there needs to be a change in people's awareness and action, new and innovative solutions, and supportive and inclusive policies. Based on the result of a poll published by the Pew Research Center at the beginning of 2019, which questioned more than 27,000 people in 26 countries in spring 2018, the majority of people worldwide see climate change with 67% as the greatest threat to security and global prosperity (Poushter and Huang, 2019). Certainly many efforts have been made in recent years to thwart climate change, new strategies and initiatives have been launched, international declarations and agreements have been signed, and science and research have been supported, and intensively has been looking for new solutions. However, there is a shortage of implementation and realization. Therefore, it is not surprising that the youth take to the streets to fight for their right to a healthy and healthy planet and protests against the inadequate action in the climate crisis. Of

course, the "Fridays for Future" campaign is not uncontroversial, but this move clearly shows that time is running out and it does not get better to just talk about it. As J. W. Goethe has rightly stated: "It is not enough to know that one must also apply; it is not enough to want, you have to do it" (Goethe, 2019 p. 355).
The 2030 Agenda and the Europe 2020 Strategy both aim to promote sustainable development, combat hunger and poverty, safeguard work and resilience, and, above all, counteract climate change and protect the planet. At the same time, both see an important point in achieving their goals in the research and development of new solutions (Oţoiu, Bere & Silvestru, 2017). The key financing programme for the Europe 2020 strategy is Horizon 2020. This programme was launched in 2014: "To contribute to building a society and economy based on knowledge and innovation across the Union" (EU, 2017, p.3). The programme expires at the end of 2020 and plans for the follow-up programme Horizon Europe are well under way. Therefore, the goal of this study was on the one hand to summarize the main historical development steps that led to the Agenda 2030, the strategy Europe 2020 and the Horizon 2020 funding programme and on the other hand to analyse the interim reports and the actual status of the H2020 programme especially in relation to impact and achievement of its objectives.

The main historical development steps that led to the Agenda 2030
Since years the word "sustainability" seems to be ubiquitous in all fields of economics, politics, science and media and it is used in varied connection with environment and climate protection, energy and food security, innovation and mobility, as well as with different management fields, education, development, design and marketing. Due to the exhaustless amount of correlations and the different stakeholders it is hard to gain a common understanding, therefore what sustainability really means. On these grounds the authors decided to give a short historical derivation of sustainability, sustainable development and to summarize the main cogent findings which at the end have led to the Agenda 2030.

Fig. no. 1 Selected historical steps on the way to the Agenda 2030
Source: Authors design

The term "sustainability" was demonstrably used for the first time in the publication from the German mine captain Hans Carl von Carlowitz in 1713 in the meaning of conservation and securing. In his book "Sylvicultura oeconomica" he wrote about the concept of sustainability in forestry which aims to reach a balance between forest-use and reforestation to ensure a continuous, consistent and sustainable usage of wood for the mining. In this sense, sustainability means the use of a natural system that can be regraded in such a way that its essential properties are preserved and its existence can be natural renewed (Pufé, 2017).
As the next important milestone on the way to sustainability awareness, the publication of the "Club of Rome" in 1972 must be mentioned. Their study "The Limits to Growth" was based on a computer simulation and alarmed the world about the finiteness of our natural resources and that the humanity is working on their own destruction. They predicted, that

within the next hundred years the end of the growth potential of the world will be reached if the increase in the world´s population, the progressing industrialisation, the environmental pollution, the exploitation of the natural resources continues (Meadows et al., 1972). This study denounced the depletion of the world and called for a rethink and was followed by the next major step, 15 years later.

In 1987 the World Commission on Environment and Development (WCED) (a.k.a. Brundtland-Commission) published their report: "Our Common Future". This report contains the to-date mainly used definition for sustainable development: "Humanity has the ability to make development sustainable - to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p.16). This definition forms the fundament of the sustainability movement, which in the subsequent years through the Rio-summit (1992), the United Nations Climate Change Conferences (1995-today), numerous international and national agreements and the founding of state and non-governmental organizations further developed. It is very important to differentiate that "sustainability" is related to the state of things and permanence, and that "sustainable development" is the path to sustainability, that means, movement and processing (Pufé, 2017).

Lastly, another 28 years later after the "Brundtland-report", in 2015 the "2030 Agenda for Sustainable Development" with the 17 Sustainable Development Goals (SDGs) was adopted by the member states of the United Nations. This Agenda came in to force on the 1st January 2016 and is valid for all countries of the world and each country has to establish national sustainable development programmes, actions plans and policies for achieving those goals. The following five action-guiding principles and core messages (5P´s) were prefixed to the 17 goals to point the connection between them:

- People – For a world without poverty and hunger;
- Planet – Protection of the planet and limitation of the climate change;
- Prosperity – Ensure prosperity for all humans and fair globalization;
- Peace – Promotion of peace and observance of human rights;
- Partnership – Build up and maintenance of global partnerships (BMZ, 2017).

These development goals have a timeframe to be achieved within the next 15 years until 2030 and will be monitored with national and global reports. Therefore a set of 232 global indicators was established to measure the progress of the 17 goals on regional and national levels (EU, 2017). Unfortunately the global "Sustainable Development Goals Report" from 2017 and 2018 showed in a disillusioning way that the progress is not good enough by half to reach the targets by 2030 and that urgently meaningful and resilient actions must be taken by each country to bring the agenda to life (UN, 2017 and 2018). Therefore, numerousness of international organisations and countries started evaluating and implementing new innovative strategies and solutions. The European Union and the majority of their countries had already policies and initiatives for sustainable development which were updated and extended in the last years to reflect the Sustainable Development Goals and the newest scientific findings and research results. Amongst them, the Europe 2020 strategy with their aim for smart, sustainable and inclusive growth can be seen as the leading strategy. It was adapted in June 2010 and with the fife key elements: Employment, research and development, climate change and energy, education, poverty and social exclusion. A mid-term review was conducted in 2014 – 2015 including a public consultation. This review has shown, that the strategy is still a suitable framework and will be pursued (EC, 2018). In the meantime additional policies have been established to be more concreate to single SDGs e.g. EU 2030 Climate and Energy Policy Framework (Jan 2014), EU Food 2030 (Oct 2015) and EU Circular Economy Package (Dec 2015). All those European policies and initiatives need to be unambiguous and entirely implemented and enlarged with further actions to change and improve their focus areas. They also need to be regularly reviewed and the

results believable monitored to ensure their effectiveness and to considering new facts and evidence which might come up or been proven since their establishment (EC, 2019c). The election of the new European Parliament in May this year and the approaching end of the horizon of the Europe 2020 strategy will bring up additional challenges as well as the United Kingdom leaving the European Union and the growing populism within several European countries. But also the challenges from outside Europe will have significant influences on the success of these policies and initiatives and their practicability. An important cornerstone for the success of these policies, initiatives and the sustainable development is research and development and, in particular, their financing, which will mainly be subsidised through the European Structural and Investment Funds, the European Fund for Strategic Investments (EFSI), the LIFE programme and Horizon 2020. For this reason the following part of the research focuses on the two major funding programmes, their status, first results and their future plans.

European funding programmes for research and development

Overall the European Union has around 50 search funding programmes implemented through the Multiannual Financial Framework to support European policies and initiatives (EC, 2019b). In the following table the details of the funding programmes which support sustainable development are consolidated including their targets, measures and budget size.

Table no 1 European funding programmes with reference to sustainability

Title / *Budget*	**Topic / *Timeframe***	**Targets**	**Measures**
ESIF *€351 bn.*	http://ec.europa.eu/regional_policy/en/funding		
	European Structural and Investment Funds *(2014-2020)*	• Regional development • Research & innovation • SME competitiveness • Low carbon economy • Environment & resource efficiency	• Regional Development Fund • Social Fund • Cohesion Fund • Agricultural Fund for Rural Development • Maritime and Fisheries Fund
INVEST-MENT PLAN *€315 bn.*	http://ec.europa.eu/priorities/jobs-growth-and-investment/investment-plan		
	Support of investment in EU *(2015-2017)*	Pipeline of EU projects with a focus on: • Large infrastructure • Research & innovation • Employment • Environmental sustainability	• New financial tool: EFSI (European Fund for Strategic Investments), in partnership with the European Investment Bank
Horizon 2020 *nearly €80 bn.*	https://ec.europa.eu/programmes/horizon2020		
	EU Framework Programme for Research and Innovation *(2014-2020)*	• Resource efficiency • Water • Waste • Key enabling technologies • SMEs	• Innovation action • SME instrument • Public procurement of innovation • Pre-commercial procurement
Life *€3.4 bn.*	http://ec.europa.eu/environment/life / www.ec.europa.eu/life		
	EU Funding Instrument for Environment and Climate Action *(2014-2020)*	• Environmental technologies • Resource efficiency • Industry & production • Waste • Water	• Demonstration & pilot • Capacity building • Best practice • Information, awareness & dissemination

Source: Authors compilation based on the references in the table

In the next part of this article the Horizon 2020 programme will be reviewed in more depth because this builds the main funding basis for the European 2020 strategy and aims to support strategy goals for smart, sustainable and inclusive growth and jobs (EU, 2016).
The idea of promoting research and innovation at European level has always been of central importance within the European Union and therefore a research-related policy instrument was needed. On the 25 July 1983 the council of the European communities has announced the first framework programme for community research and development (FP1) from 1984 to 1987 with an overall budget of €3.75 billion. The second framework programme (FP2 - 1987 to 1991) had a budget of €5.4 billion and the third framework programme (FP3 - 1990 to 1994 had a budget of €6.6 billion (EC, n.d.). This increasing of the budget reached an unprecedented dimension with the eight framework programme the so called Horizon 2020 programme, which started in 2014 with the largest ever budget of about €80 billion for the timeframe of 7 years from 2014 to 2020. H2020 serves as the financial instrument and the framework of the Europe 2020 strategy for promoting economic growth, job creation and safeguarding Europe's global competitiveness (EC, 2017). The figure below show the funding periods of the framework programme starting with the fourth, their main targets, the number of realised projects and the budget.

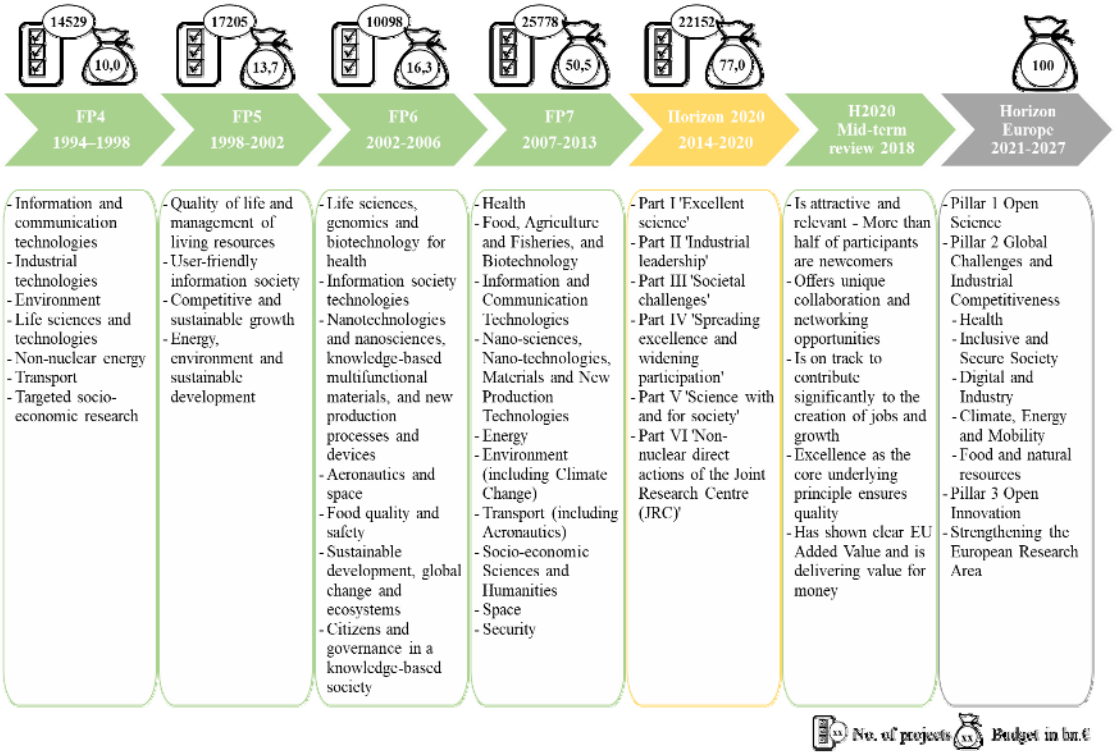

Fig. no. 2 Funding periods from the 4th Framework programme up to Horizon Europe
Source: Authors compilation based on research

The Horizon 2020 programme was reviewed for the first time in 2015 and the last review was published in 2018. In the table below the key findings from both reports and the actual Horizon Dashboard are listed, whereat the actual results can be compared with the results of the FP7 programme.

Table no. 2 Main figures from the Horizon 2020 review and actual status compared to FP7 final figures

Figure	Report 2015 (EU, 2015)	Report 2018 (EU, 2018)	Current status (EC, 2019a)	FP7 (EC, 2015a, b)
Timeframe	Jan 2014-Dec 2014	Jan 2014-Dec 2016	Jan 2014-Apr 2019	Jan 2007-Dec 2013
Applications	123,334	400,000	658,338	598,080
Eligible Proposals	36,732	115,235	190,867	139,292
Signed Grants	3,236 (until end Apr 2015)	13,903	21,876	25,053
Success Rate	n/a	12,06%*	11.46%*	17,98%*
EU Contribution	5.5 bn.€	24.8 bn.€	40.0 bn.€	50.5 bn.€
Newcomers	38%	54.4%	n/a	74%
Countries	73	139	156	152
Participations	6,774	58,964	106,215	134,00
SME Participations	1.030	4.990	21,832	24,000

**by the authors calculated values – Success Rate = Signed Grants / Eligible Proposals*
Source: Authors compilation based on the references in the table

Results and discussion

The evaluation of the figures from the H2020 programme shows, that there is a high interest and demand for founding. About 20.5% of the participants are from SMEs and 73% are countries outside Europe. The actual figures are very close to the final figures from FP7 and there are just about 21 months to go until end of 2020. In terms of job creation and growth, the Horizon 2020 evaluation report shows that the programme fulfils its mission and that there would have been more potential because around € 62 billion would be needed to finance all projects that meet the specified excellence criteria and 83% of the projects would not have been realised without this investment (Fornero and Haupt, 2018). These statements suggest that H2020 is meaningful and purposeful, but there are also other voices and thoughts. For example H2020 promised "more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market" (EC, 2017). But why then only about 20.5% participation are from SMEs and the contribution to the private sector is 29.1%, who will bring the idea to the market? Another statement is, that the H2020 has simplification as one major features. But why is there a whole industry of consulting firms that offer their services, and thereby valuable funding is used for these services? It is also surprising that approximately 42.6% of the total funding for the coordinator role is awarded. It is clear that a project with several partners from different countries requires a degree of coordination and regular and meaningful reporting but the percentage is not reflecting simplification. Another aspect is the distribution of subsidies, the upper ranks are mostly occupied by Western European states (Germany, United Kingdom, France, Spain, and Italy). Of course, these are probably the countries that contribute the most to the financing pot for H2020, but should not it be the aim of the projects to promote the less developed and backlog demand countries of Europe? In the actual list only about 12% of the participants are coming from Eastern Europe countries and 82% from Western Europe countries and the Net contribution is about 7% for Eastern Europe countries and about 90% for Western Europe countries. Some of those aspects from above where also recognise in the „Commitment and Coherence – Ex-Post Evaluation of the 7th EU Framework Programme" (EC, 2015a) and the "Key findings from the Horizon 2020 interim evaluation" (EU, 2017).

Conclusions

The Horizon 2020 programme has almost reached his horizon and the planning for the follow-up programme Horizon Europe is in full swing. It should have a budget of € 100 billion and again a timeframe of again seven years from 2021 to 2027. It will be divided into three pillars: Open Science, Global Challenges and Industrial Competitiveness and Open Innovation (FFG, 2019). One of the big challenges will be to compose the loss of the UK as one of the key net contributors. As well to improve and simplify the processes and reporting and to attract with that more participants from the private sector and especially from SMEs. The aim of this study was to recap the main steps of the sustainable development that lead to the Agenda 2030 and the related Europe 2020 strategy with its funding programme Horizon 2020 and to raise awareness about the programme and it potentials as well to identify some critical aspects that needs to be considered for the planning of the follow-up programme Horizon Europe.

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AN INNOVATIVE APPROACH TO ENTREPRENEURSHIP EDUCATION IN ROMANIAN ACADEMIA: THE FRESHCONSULT PROJECT

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Abstract
In today's fluid and highly sophisticated context, with its unprecedented challenges and opportunities, Entrepreneurship Education (EE) plays a crucial role in building the appropriate competencies, abilities and attitudes, valuable as employee as well as entrepreneur.
As major EE providers, higher education institutions (HEIs) are struggling to adapt their teaching methods to prepare their graduates for diverse, complex and shifting market requirements. This continuous quest is leading them to innovative paths. Such a new approach was designed by the authors of this paper in order to increase the effectiveness of the EE in the Romanian academia. The FRESHconsult Project was developed as a modern educational tool, under the Model of Augmented Interaction Academia - Business Environment's (MAI-A-BE) (Dragusin, Sirbu and Grosu, 2018) "umbrella". Its aim was/ is not only to enhance students' overall entrepreneurship competence, but to also contribute to bridging the gap between the Academia and the Romanian business environment, trough free generic consultancy services. The followed 5 stages of this innovative endeavour are carefully detailed, along with the results of the FRESHconsult pioneering project's first iteration. 38 entrepreneurs of micro and small businesses, of all age categories, mainly active in the service sector, benefited from this collaboration, under our professional supervision. A number of 38 validated teams (181 students) were involved, providing a total of 1572 hours of free generic consultancy. This translated into 174 fresh/creative ideas/ proposals/ recommendations, many in the process of implementation. Both students' and entrepreneurs' strong positive feed-backs were tracked and emphasised is this paper. Further research to assess the project's impact is suitable.

Keywords
Entrepreneurship Education, innovative teaching methods, learning by doing, The Model of Augmented Interaction Academia - Business Environment, FRESHconsult project, Romania

JEL Classification
A20, M10

Introductory remarks. Focus on theoretical and practical frameworks

Nowadays, the demand for graduates displaying entrepreneurial behaviours and attitudes faces an upward trend. “Today’s graduate currency or ‘value’ is in the ability to manage and

apply knowledge in action and in an entrepreneurial context, and not only in the ability to acquire and assimilate knowledge" (Collins, Hannon and Smith, 2004). Taking into account the rapid changes imposed by the digital age, the ability to be adaptable and to find viable business solutions are essential for the young graduates. These skills can get them closer to the capacity of taking rapid actions, act with initiative, adopt a reflexive behaviour and efficiently work in multicultural environments. This may constitute competitive advantages for the graduates from higher education institutions (HEIs) struggling to adapt their teaching methods to the nowadays challenges. The role of education in society is changing and the fast technological advancement is imposing an open attitude and a bulk of innovative teaching methods and actions, without which the old fashion academic players may lose their credibility and position on the market (Romero, Petrescu and Balalia, 2011).

Approaching the particular case of Entrepreneurship Education (EE), a study conducted in the United States of America, revealed that Class Discussion, Creation of Business Plans Guest Speakers, Case Studies Lectures by Business Owners, Research Projects, Feasibility Studies, Internships, In Class Exercises, On-Site Visits, Small Business Institute and Computer Simulations are among the most popular teaching methods used in universities (Solomon, 2006). A review of these pedagogies indicates that most of them are passive in learning and do not address several prevalent issues and characteristics. There is no examination of opportunity recognition such as requiring an environmental scan. Limited integration of technology and the Internet fails to take into account the technological savvy of the younger generation (18-25) who has been raised on the integration of technology into their everyday life, including but not limited to: cell phones, iPods, instant messaging and computers. Moreover, the "little consensus on just what exactly entrepreneurship students should be taught" (Solomon, Alabduljader and Ramani, 2018) is making even harder the "job" of an entrepreneurship teacher that has to stimulate the young students to dare and put their ideas in practice.

In a general perspective, the teachers need to come up with innovative teaching methods that stimulate and engage students along the educational process for a much proper anticipation of the market directions (Smeureanu & Isăilă, 2017). Apart of the teachers' involvement and efforts, the interest and dedication of the students are of the same importance if all of them want to achieve the common main objective: to be competitive as workforce or entrepreneurs for the shift towards the digital era.

At the European Union's (EU) level, it is widely accepted that economic development and a higher life quality strongly depend on the creation of vigorous local businesses. This can be achieved by enhancing local entrepreneurial potential to set-up, develop and manage new ventures. The European Commission is committed to promoting entrepreneurship through education at all levels (Suciu & Florea, 2017). Entrepreneurship is considered one of the key competences to be provided through lifelong learning. In that sense, an increasing number of EE programs are available across Europe, but as highlighted by the European Commission, their development and promotion has to become more systematic. The existing programmes have many similarities in terms of objectives, content and teaching strategies. They have an interdisciplinary approach, share similar topics and are aiming to develop valuable personal attributes.

As regards the case of Romania, there is formal support for entrepreneurial education, which is considered a priority within governmental strategies. Based on a series of weaknesses of the EE system pointed out by Drăguşin and Balalia (2010), we are highlighting the current most visible challenges that the higher education institutions have to overcome:

- The reluctance of people to start a business as they are afraid of the bureaucracy that they have to face and the lack of financial support for their business. Partially it could be true, but what it can be told that holds us back as a nation is that fear of trying and even failing. If we manage to change the perspective of failing and see it as part of the

final success, it would be a huge step for the evolution of entrepreneurship in Romania. Currently, the young people are more and more opened to embrace the entrepreneurial path, as various governmental actions have been developed. Apart of the private initiatives, there are governmental programmes that are offering entrepreneurs the possibility to benefit of financial support. Moreover, in most of the country's regions multiple entrepreneurial training sessions are provided as part of different projects financed through the European Union's funds.

- In most of the courses, including the entrepreneurship course, the teachers are still using traditional pedagogical styles that do not always meet students' learning needs and have limited effect. Their experience in promoting and diffusing entrepreneurial spirit among students is low and the application of innovative teaching techniques are still at their beginnings, but the rhythm has to increase in order to cover the needs and expectations of the current and next generations of young digital students.
- The lack of consistent materials and guidelines dedicated to the Romanian entrepreneurship for entrepreneurs that wish to develop and conduct their business within the Romanian market;
- There is a visible gap between existing EE and real Romanian business world requirements, as the actions of collaboration are still in a premature stage.

The purpose of overcoming the above-mentioned limits is to gain a more competitive position among the suppliers of EE within the EU and even at the international level, by adopting innovative solutions (Bob and Balalia, 2009).

Addressing the last identified weakness, we are presenting the FRESHconsult project as an innovative teaching method worth being extended in other HEIs for various teaching subjects for a closer connection between the existing EE and the real Romanian business environment. In such a context, we had developed the present paper based on the following structure, besides this introductory section. The first part of the paper outlines important definitory information specific to the description/characterisation of the FRESHconsult project, while the second emphasises the main outcomes of the first period of implementation. The paper ends up with a series of final considerations.

1. The FRESHconsult Project - a real example of implementing the Model of Augmented Interaction Academia - Business Environment in Romanian Higher Education Institutions

In the previously outlined context, in order to adhere to EU recommendations in terms of EE and to align to viable educational tools, the promotion of the Model of Augmented Interaction Academia - Business Environment (MAI-A-BE) (Dragusin, Sirbu and Grosu, 2018) in the Romanian academia is essential. Aiming to enhance students' entrepreneurial spirit and to strengthen the cooperation between higher education institutions and the business environment, such models bring a new approach to EE in the Romanian HEIs. Programs under the umbrella of such models generate positive outcomes for parties involved, HEIs and businesses. To put in a nutshell, on one hand, these projects bring important contribution to the development of students' entrepreneurial mindset/ attitude along with other "soft" skills like creativity and innovation, highly acknowledged in the real business environment. Involvement in such programs may consistently contribute to the improvement of students' personal and professional lives. "Professors can add consistently to the variety of their teaching/ learning activities and can make a better correlation of the theory with the practice, through the application of the learning by doing/experiential learning principle. On the other hand, entrepreneurs can benefit from the rare opportunity to get genuine support for free and the total liberty to implement or not students' proposals/creative ideas; they may also enjoy the new information/knowledge

researched/provided by students, saving valuable time". (Dragusin, Sirbu and Grosu, 2018, p. 320).

Developed on the principles of the MAI-A-BE, the FRESHconsult project brings an innovative approach on EE in the Romanian academia. A unique project in the Romanian HEIs, FRESHconsult implies providing free generic consulting services by teams of students under professors' coordination/supervision to entrepreneurs owning micro and small enterprises. The need for enhancing students' entrepreneurial competences, to implement 'learning by doing' principles in teaching entrepreneurship, to connect students more to the reality of the business environment, the lack of economic knowledge of the entrepreneurs starting and developing small and micro enterprises, their need for consultancy services correlated with their lack of financial resources to benefit from such services (Nicolescu et al., 2017; Dragusin, Sirbu and Grosu, 2018) represented our main hypothesis for launching the first pilot version of the project during the first semester of the academic year 2017-2018 at the Faculty of Business and Tourism (FB&T), part of The Bucharest University of Economic Studies (BUES), under the Entrepreneurship discipline's associated activities. We are detailing below the content of our innovative project's main five stages (Dragusin and Grosu, 2018):

a) Initiation stage

In this stage we've set up the *scope* of our project - strengthening the ties between the FB&T and the Romanian business environment – and its main *objectives*:

- engaging at least 40% of the students (in their second year of study) taking the Entrepreneurship course, into our pilot project;
- providing free generic consultancy for at least 30 Romanian entrepreneurs.

In order to achieve the objectives, we took several additional decisions:

- to strongly promote the FRESHconsult project among our second-year undergraduate students;
- to run the project during the entire first semester of the academic year (14 seminars/14 weeks);
- to target only entrepreneurs owing SMEs with less than 49 employees (micro and small categories of enterprises), with less complex activity and, in general, with very modest financial resources.

b) Planning stage

The pilot FRESHconsult project had no funding, so we've carefully planned all the activities in order to properly use the other available resources, while raising and maintaining an adequate level of motivation among the parties involved – students and entrepreneurs. The project didn't incur additional costs for the main stakeholders – students, professors, entrepreneurs – except for the insignificantly ones assumed individually, usually associated with writing any other project/paper, as a minimum requirement for a university discipline (paper, printing costs, a CD with the electronic version).

The estimated human resources consisted of at least 176 students (the equivalent of 40%, out of the total number of 441 second-year students, enrolled for the Entrepreneurship course). We've decided to form teams of 4-5 students to work each with an entrepreneur identified by them, from their social network. Designing a plan with each part's responsibilities – team of students and professors – was strictly related to the project's objectives. The coordinates of our *communication plan* with the students included the following: a general presentation of the project's scope, objectives and phases (each with associated deliverables); the criteria each team should use to identify an eligible entrepreneur; schedule of the team's activities and the deadlines for the preliminary deliverables; the content of the team's final report and the deadlines needed to be met.

In this stage we have identified the following *risks*:

- The lack of a stable/constant source of entrepreneurs willing to benefit from our project; except for our initial pull of 14 entrepreneurs we couldn't recommend others. Our efforts to develop a partnership with the Romanian Trade Register failed until now. However, taking into consideration the pioneering character of our project and the reality that it was unknown/ untested, we've assumed that there is a considerable probability that students could find entrepreneurs willing to join our project in their social network.
- Students' reluctance to work on the project. Their main perceived obstacles were related to their impossibility to find an entrepreneur wiling to collaborate with them or to the fact that they may not be considered trustworthy persons, unable to provide qualitative results. Therefore, in this first implementation phase of the FRESHconsult project, we decided to give students the opportunity to choose between traditional approach – working on the team's own business idea – versus working under the FRESHconsult 'umbrella'.

c) Execution stage

In this stage we've presented the project to our students, highlighting its unique nature in Romanian HEIs and the potential benefits it can bring for all those involved, on short, medium and long-term. Our purpose was to help students internalise the scope and the objectives of the project and become aware of their responsibilities, along with their major influence on the project's success. An honest and serious behaviour was mandatory for ensuring the projects' success.

In this stage, the teams were set up and each team identified a beneficiary-entrepreneur who received an official acknowledgements letter for his/her involvement in the project. Also, students signed confidentiality agreements regarding business/entrepreneur-related information.

Students were informed about the documents they need to deliver, all of them being developed under our strict coordination.

Each team of students needed to provide a consultancy report to both the supervising professor, respectively us, and the beneficiary-entrepreneur, including: a short description of the entrepreneur and his/her business along with a descriptive summary paper, business model CANVAS, SWOT analysis, recommendation plan, a brief table with the main provided suggestions, table with time allotted to FRESHconsult activities, individual assessment, synthesis table, entrepreneur's feedback, photos with students and the entrepreneur to advocate the experience under the FRESHconsult 'umbrella'.

d) Monitoring and control

During this stage various issues were reported by students and we strictly monitored the projects' progress. Furthermore, permanent controls of student teams were accomplished, especially during the seminar activities.

e) Closure

In this stage, we assessed each consultancy report based on rigorous standards, in order to attest each team as part of the FRESHconsult project. The number of reported working hours was verified, validated and summed up to get the total number of free generic consultancy hours provided by the students of the FB&T, under our coordination. The final consultancy report was delivered to the beneficiary-entrepreneur and a feedback from both entrepreneurs and students was collected. At the end of the implementing period an analysis of the projects' strengths and weaknesses was developed.

2. The first implementing period of the FRESHconsult project: main outcomes

The first implementing period, which was during the first semester of the academic year 2017-2018, generated various positive results as outlined in the following paragraphs.

There have been 42 student teams involved in the project, out of which only 38 validated, leading to a success rate of 90%. The 38 validated student teams translated into 181 students, more than the number we initially estimated (176 students, the equivalent of 40%, out of the total number of 441 second-year students, enrolled for the Entrepreneurship course).

38 entrepreneurs beneficiated of a total of 1572 hours of free generic consultancy offered by student teams, under our supervision. Entrepreneurs were from all age categories. Considering the urban-rural criterion, 32 were from the urban area, while six were from the rural area. In terms of their business size, two of the enterprises were start-ups, 26 were micro and 10 small. In what regards their main branch/ field/ industry, five were manufacturers, six were acting in the retail industry, while 27 were active in the services sector.

Student teams formulated 174 creative, fresh suggestions to their beneficiary-entrepreneurs, many of them, being in the process of implementation; issues like marketing strategies, competition analysis, or human resources strategies were mainly envisaged. All the involved entrepreneurs have been extremely enthusiastic about the FRESHconsult project and provided strong positive feedbacks, like:

- *"During the consultancy period, we have managed to improve the promotion of my café-shop, both in the online and offline environments, which led to an increase in the number of my customers, implicitly my profit. […] I was extremely pleased to see that such programs are developed in a Romanian university." (male entrepreneur, owner of a micro enterprise active in Horeca, in the urban area);*
- *"The team of students from the FB&T, the BUES, who collaborated with us in the FRESHconsult project proved to be very enthusiastic and creative, bringing an important contribution to the promotion of our company and the products we sell. […] Thank you for your collaboration and I hope such projects will continue also in the future, as they are extremely useful." (female entrepreneur, owner of a small enterprise producing and selling bakery products in the rural area);*
- *"The consultancy report I have received exceeded my expectations. The collaboration I had with the students team was very friendly, based on mutual respect. I will use the received plan in the future." (male entrepreneur, owner of a micro enterprise active in the auto service sector, in the urban area).*

However, four of the targeted beneficiary-entrepreneurs highlighted some issues associated to the project's progress, perceived as superficiality of the partnering student teams. Their periodic assessment revealed us too repeated non-compliance with the deadlines and a very weak content of their intermediary and final reports. This led us to the decision to exclude those four teams from the FRESHconsult project.

Positive feedback was also received from all the validated teams of students, who managed to provide reliable, consistent generic consulting reports. Among the most valuable benefits perceived by the students while working for the FRESHconsult project and frequently mentioned were (in random order): a desired "switch" of the entrepreneurship courses and seminars from a dominant theoretical approach to a practical one; the opportunity to be in direct contact with the real business world, along with the chance to translate into practice the known theoretical notions; improvements of important entrepreneurial competences and skills; the development of a new social network. According to students' appraisal, the FRESHconsult project was perceived as an effective enhancer of skills and competences like: creativity, flexibility, adaptability, result-orientation, teamwork, work under pressure, detail orientation, self-confidence, perseverance, self-motivation, openness towards accepting others' ideas, active listening, public speaking, critical thinking, management and marketing related competences, even artistic competences, etc.

- *"We can't form and develop our experience from books ... we need practical activities, such as the FRESHconsult project" (female student)*
- *"The FRESHconsult project meant a 'new' beginning for me." (female student)*
- *"Through the FRESHconsult project, I understood what it really means to be an entrepreneur in the real business world". (male student)*
- *"In the first place, I gained many new, trustworthy friends on which I can count, especially if I want to start a business." (male student)*

However, students also perceived some weaknesses of the FRESHconsult project, mainly related to any beginning. During this first iteration, one of the most referred ones were: the difficulty to find entrepreneurs willing to get involved into the project and to collaborate with the teams of students; the challenges associated with developing a collaborative relationship with the beneficiary-entrepreneurs; the lack of more structured requirements regarding each of the project's stages.

We, as professors who coordinated the project, felt that we have: enriched our professional experience, improved our practice centred teaching methods and developed strong ties with both our students and the 38 beneficiary-entrepreneurs. On the other hand, the main problems we identified during this first stage of the project's implementation – quite similar with the ones identified by the students – referred to the lack of a more standardized approach, the poor engagement into the project of some students, students' low time management skill, the lack of a stable/constant source of entrepreneurs willing to benefit from our project.

Conclusions. Focus on strategies to overcome project's main issues and on future development directions

EE is an effective tool that can stimulate the entrepreneurial mindsets of young people, encourage innovative business start-ups, growth of small and medium sized businesses and foster a friendlier entrepreneurship culture. There is no consensus on what and how to best teach entrepreneurship, but it is generally accepted that just content and pedagogies should target all three main characteristics of entrepreneurs and innovators: knowledge, skills and attitudes. EE exhibits a wide variety of teaching approaches addressing mentioned characteristics.

The analysis of the Romanian higher education system led to interesting conclusions regarding its evolution, merits and limits. For the challenges it has to face, major adjustments are needed. In that sense, coherent efforts should be made in order to reduce the gap between Romanian students' entrepreneurial needs and aspirations and the EE offerings within HEIs, in general and in non-business studies, in special.

Projects developed based on the principles of the MAI-A-BE might represent important tools for diminishing, or even, eliminating this gap. As a real example of translating into practice this model, the FRESHconsult project generated positive outcomes for both parties involved: academia and business environment. Developing students' entrepreneurial mindset, connecting them with 'real-life' problems, entrepreneurs receiving free, fresh, creative ideas for developing their businesses from student teams are just few examples. On the other hand, issues like the lack of a more standardized approach, the poor engagement into the project of some students, students' poor time management or the lack of a stable/constant source of entrepreneurs willing to benefit from our project have resulted from the first implementing period of the project. In order to overcome these, a more detailed, standardised description of students' tasks has been translated into the elaboration of an operational guide for the project, successfully used during the project's second iteration during the current academic year. This second iteration step also involved a better promotion of the project among all the FB&T staff, mainly based on the outcomes of the first implementation stage. Many of them proved to be very interested in the FRESHconsult

project, which translated into the involvement of additional three professors, running complementary to entrepreneurship courses. This led to an emerging vertically integrated project which will be carefully analysed and developed in the near future. Furthermore, we are going to complete soon the results of the project's improved second iteration. Its implementation meant also a more effective promotion in the business environment, in order to develop a database of entrepreneurs willing to benefit from free general consultancy under the 'umbrella' of our project.

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THE ECONOMETRIC MODELLING OF ROMANIA'S FOREIGN TRADE WITH DEVELOPING COUNTRIES

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Abstract

In the present paper we analysed the transmission of the variations in the domestic demand and the EUR/RON exchange rate to the imports from developing countries, using a methodology that is based on the analysis of the cointegrating vectors and the error correction vectors. Departing from quartely data for 2007-2017, the cointegration analysis has highlighted the fact that there is a long-term stationary relationship between the variables included in the analysis. The weak exogeneity tests have shown that both domestic demand, and EUR/RON exchange rate are not adjusted if various shocks determine the deviation of imports from developing countries from the long-term equilibrium. In addition, in the short term, the error correction term has a negative sign and is significant. In other words, if in the previous quarter imports from developing countries were higher than the equilibrium level, they will decrease in the current quarter. These results were achieved under the conditions that the investigated period was characterized by the Great Recession and its recovery. In this context, for net importing companies, the share of the loans granted in the total debt accumulated by non-financial corporations increased from 8.99 percent in 2008Q2 to 24 percent in 2017Q2, along with the rise in non-performing loans from 0.07 percent to 6.5 percent. Moreover, at the end of June 2017, the rate of return on capital amounted to 16 percent, compared with 15 percent for the net exporting companies and 17 percent for the whole non-financial corporations sector.

Keywords: Developing countries, Imports, Exports, Exchange rate, Vector Error Correction Model, Granger causality

JEL Classification

C51, E1, F1

Introduction

In Romania, the trade balance with developing countries gradually improved from -4.5 percent of GDP in 2007 to -1.3 percent of GDP in 2012. Subsequently, in 2013, as exports increased and due to structural adjustments, the trade balance with developing countries stood at 0.1 percent of GDP, oscillating over the next 4 years around the average of -1.3 percent of GDP. During 2007-2017, in the case of Romania's foreign trade with developing countries, the export effort remained within the range of 5.8-10.2 percent, while the penetration rate of imports ranged from 9.8-11.3 percent. In addition, it should be noted that the annual change in the value structure of both exports and imports was supported by more than 63 percent of the following 3 groups of goods: machinery and transport equipment; mineral fuels, lubricants and related materials; manufactured goods classified chiefly by

materials. In 2017, 51.7 percent of the exports to developing countries were destined for Asia, 7.3 percent for Africa and 2.4 percent for South America. In contrast, on the import side, 67.2 percent of the purchases from developing countries came from Asia.
In this context, this study aims to analyse the relationship between the imports from developing countries and the determinants, using a methodology based on the analysis of the cointegration vectors and error correction vectors. With the discovery of the importance of the stochastic trends of economic variables and the development of the cointegration analyses, models have been developed to enable separation of the long-term relationship from the short-term dynamics. The long-term relationship also called the cointegration relationship is associated with an economic dependence, while the short-term dynamics represents the adjustment of model towards the long-term relationship. VEC models (vector error correction) allow the separation of long-term components from the short-term components in the data generation process (Păuna, 2007). Integrating short-run dynamics with long-run equilibrium was first investigated by Granger (1986), and then by Engle and Granger (1987). The use of this model has become in the last decade, an empirical approach that makes sense only if the included series have a long-term relationship, meaning they are cointegrated. This means not only that all series should be integrable of order one and that the residual terms to belong to stationary series, but imposes the conditions for there to be at least a linear combination of the basic series that is stationary (Albu et al., 2003). According to Juselius &Toro (2005), the cointegration property is invariant to changes in the set of information. Any result obtained by using the cointegration technique on the base variables of the model could also be obtained in the case of a more extensive analysis. Thus, the vector error correction model allows us to answer important questions in order to adopt commercial policy measures, such as: "How do imports from developing countries respond to the variation on the domestic demand in the short term?"
The paper is structured as follows: Section 2 presents the econometric model used. Section 3 describes the data used, the results provided by the econometric model and their interpretation. Section 4 includes the final conclusions.

The econometric model
In the present paper we opted to use the Johansen cointegration procedure in order to investigate the existence of a common stochastic trend between the imports from developing countries and the determinants. In this regard, we followed the procedure described by Enache (2015), that is based on a Vector Autoregression model of order p (VAR(p)) with the following standard representation:

$$Z_t = A_1Z_{t-1}+A_2Z_{t-2}+\ldots+A_pZ_{t-p}+e_t \quad (1)$$

where:

Z_t is a (nx1) vector of variables that are integrated of order one;
$A_1, A_2,\ldots,A_p$ are (nxn) coefficient matrices;
e_t is a (nx1) vector of errors with $E(e_t)=0$ and the covariance matrix that is positely defined invariant in time $E(e_te_t')=\Sigma_e$ (white noise).

Equation (1) can be represented in an error correction form, i.e:

$$\Delta Z_t = \Pi Z_{t-1} + \sum_{i=1}^{p-1} \varpi_i \Delta Z_{t-i} + e_t \quad (2)$$

where:

$$\varpi_i = -\sum_{j=i+1}^{p} A_j \quad \text{and} \quad \Pi = \sum_{i=1}^{p} A_i - I \ .$$

The ϖ_i coefficients contain information on the short-term dynamic deviation, while the Π matrix includes items on the features of the long-term model. The Π matrix rank reveals the presence and number of existing cointegration vectors between the n variables in the Z_t vector. If the Π matrix has a reduced rank r<n, it can be decomposed into α and β matrices of nxr order with rank (α) = rank (β) = r and can be written as Π=αβ'. Under these conditions equation (2) becomes:

$$\Delta Z_t = \alpha\beta' Z_{t-1} + \sum_{i=1}^{p-1} \varpi_i \Delta Z_{t-i} + e_t \tag{3}$$

$$\Delta Z_t = \alpha\eta_{t-1} + \sum_{i=1}^{p-1} \varpi_i \Delta Z_{t-i} + e_t \tag{4}$$

where:

β is the cointegration vector matrix, α is the matrix of the adjustment coefficients reflecting the speed with which ΔX_t converges towards the long-term equilibrium relationship. The cointegration vectors are linear combinations of the variables that are integrated of order one from Z_t which are stationary, so that β'Xt-1=ηt-1 is I(0).

The maximum likelihood estimators of β are determined as the eigen vectors related to the highest r eigenvalues. The eigenvalues of matrix Π $(1 > \hat{\chi}_1 > ... > \hat{\chi}_n > 0)$, equal to the square of the canonical correlation between ΔZ_t and Z_{t-1}, conditioned by ΔZ_{t-1} ,…, ΔZ_{t-n}, are estimated in order to determine the number of cointegration vectors. Thus, the nonzero estimated values indicate the r rank of matrix Π.

In order to identify the number of cointegration vectors, two LR (Likelihood Ratio) tests type were used, namely:

1. The trace test verifies the null hypothesis of the existence of r cointegration vectors, given the alternative of n cointegration vectors (in which the series are stationary), for r=0,1,…,n-1:

$$LR_{trace} = -T \sum_{i=r+1}^{n} \ln(1 - \hat{\chi}_i) \tag{5}$$

2. The maximum eigenvalue test verifies the null hypothesis of the existence of r cointegration vectors, given the alternative of r + 1 cointegration vectors, for r=0,1,…,n-1:

$$LR_{\max} = -T \ln(1 - \hat{\chi}_{r+1}) \tag{6}$$

where T is the number of observations.

The two statistical tests do not follow a chi square distribution in general. Among the authors who calculated the critical values are Johansen and Juselius (1990), Osterwald-Lenum (1992), MacKinnon-Haug-Michelis (1999).

If the co-integration condition is observed, the following can be performed:

- tests suggested by the economic theory of exclusion of variables, that take the form of $[\beta_i] = [0]$ for the variable i. The statistical test is described by the following equation:

$$LR = T\sum_{i=1}^{r} \ln\left(\frac{1-\tilde{\chi}_i}{1-\hat{\chi}_i}\right) \tag{7}$$

where:

$\tilde{\chi}_i$ and $\hat{\chi}_i$ are the eigenvalues in the conditions of the estimation of the cointegration vector matrix with restrictions or no restrictions. The statistical test follows a chi square distribution having a number of degrees of freedom equal to the number of restrictions.

- weak exogeneity tests, which involve testing for the restriction $[\alpha_j]=[0]$ for the variable j, in a manner similar to that used in the exclusion test. If the tested hypothesis is accepted, then the variable j has a weak exogenous character. According to Radu (2010), the weak exogeneity of a variable implies that there is no loss of information relevant to the interest parameters of the model when their estimation is made conditional on the variable in question, a process generating the latter not being specified.

The Granger causality can also be studied. Thus, the Granger causality test (1969) shows whether there is statistical relationship between the data series of the variables X and Z. It can be said that X causes Granger on Z, where a forecast of Z made based on the past values of Z and X is better than a forecast made only based on Z values from the previous period. The Granger test is based on the following regression equations:

$$Z_t = \alpha_1 + \sum_{i=1}^{p} a_{1j} Z_{t-i} + \sum_{j=1}^{p} b_{1j} X_{t-j} + u_{1t} \tag{8}$$

$$X_t = \alpha_2 + \sum_{i=1}^{p} a_{2j} Z_{t-i} + \sum_{j=1}^{p} b_{2j} X_{t-j} + u_{2t} \tag{9}$$

which assumes that errors, u_{1t} and u_{2t}, are uncorrelated. Testing the null hypothesis *X does not Granger cause Z*, i.e. H_0: $\sum_{j=1}^{p} b_{1j} = 0$, is performed using the F test.

Data description and model estimation

The empirical analysis examines the reaction of the imports from developing countries to the different shocks in the economy of Romania. The variables that were considered are:

- Imports from developing countries, millions of lei, average prices of 2005 (IMP);
- Domestic demand, millions of lei, average prices of 2005 (ABS);
- EUR/RON exchange rate, average prices of 2005 (CV).

The data series have a quarterly frequency, cover the time interval 2007-2017 and were obtained from the databases of the National Bank of Romania and EUROSTAT. All series have been adjusted to eliminate seasonal factors using a mobile average procedure. Also, all series have been logarithmic. The variables were tested to identify the presence of unit roots using the Augmented Dickey-Fuller test (1979) and the Phillips-Perron (1988) test. The results are presented in table no. 1, from which it can be observed that all variables are first order integrated.

Table no. 1 Tests of Stationarity

	Augmented Dickey-Fuller test		Phillips Perron test	
	Level	First difference	Level	First difference
IMP	-2.463	-5.305*	-3.178	-5.309*
ABS	-0.813	-6.639*	-0.834	-6.622*
CV	-1.951	-8.250*	-2.499	-9.268*

** null hypothesis of unit root existence is rejected at the 1 percent level*

Next, a VAR model was estimated to determine the optimal number of lags to identify a possible long-term equilibrium relationship between the imports from developing countries, the domestic demand and the EUR/RON exchange rate. It took into account the Akaike (1974, 1976) and Hannan Quinn (1979) information criteria that selected 4 lags (table no. 2). Under these conditions, a VEC model with 3 lags of difference was estimated (Neagu & Mărgărit, 2005).

Table no. 2 Criteria for choosing the number of lags

Lag	LogL	LR	FPE	AIC	SC	HQ
0	121.7905	NA	1.20e-07	-7.424406	-7.286993	-7.378858
1	170.9370	86.00636	9.78e-09	-9.933562	-9.383911*	-9.751368
2	181.8262	17.01438	8.84e-09	-10.05164	-9.089748	-9.732798
3	196.5949	20.30694	6.44e-09	-10.41218	-9.038052	-9.956695
4	212.0888	18.39909*	4.67e-09*	-10.81805*	-9.031687	-10.22592*

** indicates lag order selected by the criterion*
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Applying the Johansen test (see *Johansen & Juselius*, 1990) for lag 3 highlighted the presence of a cointegration relationship between imports from developing countries, domestic demand and EUR/RON exchange rate at a significance level of 5 percent (table no. 3). The results of multivariate tests on residual terms are generally satisfactory. Residual errors are homoscedastic (a probability of 0.4987), are not auto correlated of the 1st and 2nd order (0.9353 and 0.7377 probabilities for LM tests with 1 and respectively 2 lags) and are normally distributed (a probability of 0.0742 for Jarque Bera multivariate test).

Table no. 3 Johansen Cointegration Test

Null hypothesis	J_{trace}	J_{max}
r=0	45.02623	33.99266
	(0.0004)	(0.0005)
r ≤ 1	11.03357	10.53906
	(0.2094)	(0.1789)
r ≤ 2	0.494512	0.494512
	(0.4819)	(0.4819)

Note: probabilities are in paranthesis ( )

The obtained cointegration relationship (t-statistics in [ ]):

$$IMP = - 45.758 + 3.644*ABS - 3.922*CV$$
$$[-3.196] \qquad [2.872]$$

The cointegration relationship shows that at the level of long-term equilibrium, a 1 percent increase in domestic demand leads to a 3.6 increase in imports from developing countries. The over-unity coefficient of domestic demand was obtained when the ratio between investments and final consumption stood at an average level of 34.2 percent during the period 2007-2017, the maximum of 41.5 percent being recorded in 2008, amid the increase of the credit granted to the private sector and the increase of budget expenditures. The depreciation of the national currency by 1 percent leads to a 3.9 percent decrease in imports from developing countries. According to Financial Stability Report of the National Bank of Romania (2008), the risk of depreciation of the national currency lies with the net importing companies selling products on the domestic market and for which the elasticity of the demand in relation to the sales price is higher than one (cannot fully transfer the effect of further depreciation to the customer).
The adjustment speed of the long-term equilibrium is -0.213 (with t-statistic -3.593), which shows that the accommodation of the imports from developing countries to the long-term relationship with the determinants is achieved in about 5 quarters. The results of the weak exogeneity tests show that both the domestic demand and the EUR/RON exchange rate are weak exogenous, indicating that the two variables determine the imports from developing countries and not the reverse (table no. 4).

Table no. 4 Weak exogeneity test

	Value of the test	Probability
Δ ABS	1.5897	0.2217
Δ CV	2.1367	0.1259

Note: The Wald statistic follows an χ^2 (1) distribution, under the null hypothesis according to which the m variable is weak exogenous

Furthermore, we analysed the possible connection between short-term dynamics of the imports from developing countries, the domestic demand and the EUR/RON exchange rate. In this regard, we estimated a short-term restricted error correction model which has the following form:

$$\Delta IMP_t = a_0 + \sum_{i=1}^{2} \alpha_i \Delta IMP_{t-i} + \sum_{i=1}^{2} \beta_i \Delta ABS_{t-i} + \sum_{i=1}^{2} \gamma_i \Delta CV_{t-i} + \lambda EC_{t-i} + e_t \qquad (10)$$

Using a general-to-specific methodology (see *Campos et al*, 2005) and eliminating insignificant lags, we obtained the restricted model in table no. 5.
At it can be seen, the Adjustment Speed to the equilibrium is -0.1038 (with a t-statistic of -1.7649), which shows that if in the previous quarter imports from developing countries were higher than the equilibrium level, they will decrease in the current quarter. The imports from developing country are influenced in the short term both by the change in the domestic demand and in the EUR/RON exchange rate, the 2 variables determining how the shock is transmitted to the real economy and the financial system, influencing the macroeconomic balances. The estimated model passed the set of diagnostic tests. The residues are not auto correlated, they are normally distributed and are homoscedastic.

Table no. 5 Restricted error correction model

Dependent variable D(IMP); Method: Least Square;
Sample (adjusted): 2008Q1 2017Q4; Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-1.2058	0.6805	-1.7718	0.0881
Δ ABS_{t-1}	1.7686	0.5173	3.4193	0.0021
Δ CV_{t-1}	-1.5269	0.7246	-2.1071	0.0449
EC_{t-1}	-0.1038	0.0588	-1.7649	0.0893
R- squared	0.548	Q-stat(8)	2.191 [0.268]	
Sum squared resid	0.249	ARCH(8)	0.562 [0.794]	
Log likelihood	33.83	White	1.053 [0.534]	
F-statistic	5.261	Jarque Bera	2.252 [0.324]	
Prob (F-statistic)	0.001			

Note: t-statistics in [ ]

The following are the results of the Granger causality test (table no. 6).

Table no. 6 The Granger causality test

	IMP	ABS	CV
IMP		**0.00885**	**0.04250**
ABS	**0.00148**		0.76412
CV	0.23103	0.14951	

Notes: 1. The basic tested hypothesis is: the variable on the line is not Granger caused by the variables on the columns 2. The figures represent the probability (p-value). 3.The figures in bold indicate the rejection of the basic hypothesis at a significant level of 5 percent

The Granger causality test indicated that influences of both the domestic demand and the exchange rate on the imports from developing countries have a predictable character.

Conclusions

In the present paper we analysed the transmission of the variations in the domestic demand and the EUR / RON exchange rate to the imports from developing countries, during 2007 Q1-2017 Q4. Using the Johansen multivariate procedure, we identified the presence of a single cointegration vector between the variables included in the analysis. On the long-term equilibrium level, the cointegrating relationship indicates that the imports from developing countries are positively influenced by the increase of the domestic demand and negatively affected by the depreciation of the national currency. The weak exogeneity tests have shown that there is a unidirectional causal relationship between domestic demand and imports from developing countries, on the one hand, and between EUR/RON exchange rate and imports from developing countries, on the other hand. The investigation of the short-term dynamics, using a restricted error correction model, revealed that the adjustment speed to the short term equilibrium is – 0.1038 (with a t-statistic of -1.7649). The Granger causality test illustrated that the efects of both the domestic demand and the EUR/RON exchange rate on the imports from developing countries have a regular character.

Romania provides technical assistance to developing countries to include trade in their government policies. In this context, in 2017, for this category of countries, the penetration

rate of imports was 10.22 percent, while the export effort amounted to 8.02 percent. Furthermore, both trade openness and import cover stand at 16.74 percent and 76.54 percent respectively.

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THE CONSUMER FOCUS – A NEW TREND IN THE ENERGY POLICY OF THE EUROPEAN UNION

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Abstract
The consumer focus is a key element of European Union policies and of related initiatives of European Union institutions. This orientation towards the consumer is reflected as well in the business environment, in private companies acting at international level. Consumer protection is not only a trend at European Union level, it is more than that. It is a common value of the Member States of the European Union and thus of the companies activating in this business environment. The consumer focus is part of the new energy policy at European Union level and of the related legislative initiatives, contained in the package "Clean Energy for All Europeans". The present article assesses to what extent the consumer focus is a new trend in the energy policy of the European Union and how this value has been reflected in previous harmonization attempts of the energy sector at European Union level. The article illustrates the concept of consumer protection as a common value of the European Union, as it is reflected in the specific field of new energy policies. In order to perform this assessment, the interdependencies between consumer focus and the energy policy are analyzed, as there are interactions in both directions. The consumer focus shapes the new energy policy of the European Union and the energy policy is influenced by consumer behavior. The European Union consumer paradigm is analyzed in this context. The originality of the present research consists of an interdisciplinary approach, combining the assessment of legal issues and of European Union legislation with a business and economics perspective, outlining new trends in consumer behavior and in consumer protection related to European Union policies. Solutions based on this evaluation are proposed to be considered when drafting energy policy measures.

Keywords
Consumer focus, energy policy of the European Union, Clean Energy, consumer protection, consumer behavior.

JEL Classification
D11, D18, F64, F68, I18, K32, M10, M16, M21, P46, Q01, Q20, Q40, Q42, Q47.

Introduction

The new energy policy framework at the level of the European Union is oriented towards promoting sustainability and ensuring consumer protection (Vătămănescu, Nistoreanu & Mitan, 2017). A key issue is the consumer focus as a trend of European policies in general and as well of the new energy policy of the European Union in particular. These aspects are

reflected in the legislative and institutional framework built within the European Union in order to achieve the new goals of the new drafted energy policy. This common framework finds its concrete expression in the package
"Clean Energy for All Europeans", an initiative of the European Commission that started in November 2016 and that shapes the future energy policy. This package contains measures for a modernized energy sector, based on clean energy, energy efficiency and the use of renewable energy as well as strategic measures regarding the Energy Union as a basis for the common energy policy of the European Union.
Nowadays, following the latest developments at European Union level, this Energy Union is not only a vision any more but it becomes reality (EC, 2019a). These new developments in the energy policy come along with new goals to be achieved. The new Directives on Energy Efficiency and Renewable Energies set new goals for 2030 for the European Union: the new energy efficiency target of 32.5% and the new renewable energy target of 32%.
An interesting research issue are the changes that occured in the energy policy during the harmonization attempts of this sector. Such a change is the shift from market orientation towards consumer orientation in European Union policies, a topic that is analyzed in the present research paper. It is important not to focus only on market issues when drafting policy measures, but to put the consumer first, to offer him perspectives and best alternatives, a healthy environment as well as an active role in drafting policies and an active participation in shaping this transition to clean energy. The present article deals with these research topics, in the international context of promoting sustainability and reducing the negative impact of climate change.

Review of the scientific literature
There were several harmonization attempts in the energy sector in the last twenty years and the consumer welfare used to be one aspect considered for the measures proposed or taken. The studied literature identifies consumer protection and transparency as key elements that have to be taken into consideration when drafting a harmonized energy sector at European Union level (Gundel & Lange, 2011, p.24). On this basis, the focus on the consumer has become a common value of the European Union. Consumer protection and transparency are important issues reflected in the new package "Clean Energy for All Europeans".
The European Internal Market is the core element of the European Union (Lengauer, 2014, p. 89). Considering a parallel between the European Internal Market and the common energy market of the European Union to be established by the Energy Union, this could be an important element unifying the energy sector towards common goals. Consumer welfare is a main goal of the European Internal Market and it is as well a very important element of the new energy policy of the European Union. Achieving this goals thus strenghtens as well the European Union as a construction.
Consumer protection has always been an important goal at European Union level, as the European Internal Market has as a main function to ensure consumer welfare through competition (Lurger & Augenhofer, 2008, pp. 10-11). The competencies of the European Union in the specific field of consumer protection are established in the Treaty on the Functioning of the European Union (TFEU), article 114, paragraph 3 and in the article 169 TFEU (TFEU, 2019). The legal basis for consumer protection is thus set in the primary law of the European Union. It is nevertheless not an exclusive competence of the European Union, like it is in the case of the European Internal Market or European Competition Law. Consumer welfare is a topic where there are shared competencies between the European Union and the Member States of the European Union. This is why cooperation is so important in this field, in order to find the best solutions for achieving common goals for the benefit of the consumer. This cooperation often takes the concrete form of European Directives (Lurger & Augenhofer, 2008, pp. 10-11), as it is the case of the new Directive on

Energy Efficiency and of the New Directive on Renewable Energies. These Directives have an important role in harmonizing the energy policy at European Union level and building a common basis for the energy strategy of the European Union.
Regarding the consumer concept, there has been a shift of paradigm from a naïve and informed consumer which was easy to mislead to a rational, informed consumer (Lurger & Augenhofer, 2008, p. 41). This is the consumer paradigm valid for the European Union consumer, as it was confirmed by the jurisprudence of the Court of Justice of the European Union, in the Judgement of the Court referring to the Mars Case C-470/93, where the consumer is defined as a responsible and rational person (Eur-Lex, 2019c, C-470/93 Mars). This approach regarding the consumer is obvious as well in the sector of energy policy, where the consumer has a central role. Consumer welfare thus becomes a key value for the energy policy of the European Union and it becomes an interdisciplinary concept to be considered as well by business, economics and law (Möller, 2008, p. 38), in assessments and when drafting policy measures.
The future development of the energy policy of the European Union is shaped by consumer preferences and by consumer behavior (Tantau et al., 2016). The willingness to have a transition towards clean energy has as well a cultural dimension, not only an economic one (Pelau & Pop, 2018). The correlations between variables defining consumer behavior relevant for the energy sector has been analyzed in the literature by means of the linear regression in the field of circular economy (Tantau et al., 2018). These results are relevant as well for the energy policy sector.
The present research paper is in line with previous research articles and further develops their findings, using a new perspective in line with the current developments at European Union level in the field of energy policy.

Research topics and research methodology

The present research paper analyzes the developments of the energy policy sector and the related harmonization process in terms of consumer focus and of the shift of consumer paradigm, which occurred in time. The article deals as well with the new perspectives for consumers opened by the new energy policy of the European Union as well as with the role of the consumer in this context. The background for the analysis is built by the new trends of promoting sustainability at global level.
In order to deal with these research questions, the relevant literature has been studied. The relevant European Union legislation, for example the new Directive on Energy Efficiency and the new Directive on Renewable Energies have been as well analyzed. The official websites of relevant European Union institutions, for example the website of the European Commission, have been considered, as they provide information regarding the latest developments at European Union level in the field of energy policy.
In order to research the interaction between consumer behavior and the energy sector an appropriate research method that has been used is the questionnaire. This was addressed to 130 experts from the energy field and as well to experts from the academic field, from European Union countries like Austria, Germany, Poland, Romania, Italy, Greece, Bulgaria, Portugal and Belgium. The research was performed between February 2018 and February 2019. The questionnaire comprised 21 questions on the topic of energy policy, including questions about the importance of consumer protection as an orientation in new energy policies (Bartels, Pleșea, Studeny & Just, 2017). Expert interviews have been used as a qualitative research method, relying on the valuable expertise of the respondents, who were either university professors with a high academic qualification or representatives of the private sector,dealing with the energy field or related to this. Private companies that are not active in the enegy field but that share the same values regarding clean energy have as well been considered.

Another research method used in the present paper is the case study revealing practical aspects of the consumer focus in the energy policy sector. The city of Vienna has been selected as a case study reflecting the consumer orientation in the energy policy sector, as this city is recognized as a smart city and as it was as well ranked as the most liveable city in 2018, having a very good quality of life.
The questionnaire-based research method and the case-study are complemetary methods used in the present research.
The present paper proposes an interdiscplinary research approach, combining aspects of business and economics with a legal perspective, as the field of consumer protection and as well the energy field are multidisciplinary areas. According to the studied literature business, economics and law belong to econosciences (Dinu et al., 2016, p. 34) and can thus reflect various facettes of the researched aspects. As the experts responding to the questionnaire are from different Member States of the European Union, the present research paper presents an international perspective, using a comparative dimension for the assesment of the results.
The research methods used and the mixed interdiscplinary methods represent the novelty and originality of the present article.

Results and discussion
The consumer focus is a trend with a high impact both on the private sector and of the public sector. Private companies act customer-oriented while policies are drafted considering the role and the expectations of consumers. This trend is reflected as well in the new energy policies of the European Union, a topic of great interest at the present moment and with interesting perspectives for the future. The European Union aims to build an Energy Union, offering the best alternatives for the citizens of the European Union and respecting as well the environment. Clean energy is in this context a key issue of the energy policy.
The new energy policy of the European Union places the consumer in the center of its actions in the transition towards clean energy. This result is reflected as well in the answers of the respondents in the performed questionnaire based research. This orientation is an important result and represents at the same time a shift of paradigm compared to the previous consumer oriented strategies. Previous economic theories and models, such as the Ordoliberalism, the Harvard School and the Chicago School considered the consumer as a market participant but he was not the main target of competition and market policies aiming consumer welfare (Möller, 2008, p. 99). The benefits for the consumer were mainly results of the implemented market model. But the energy policy nowadays has its focus on the consumer, he is not only a market participant but the most important market participant. The consumers' behavior shapes the policy, the consumer does not only benefit of taking part in this policy, but he becomes proactive.
The energy policy is drafted considering the demands and behavior of consumers, their needs for a healthy environment and for convenient alternatives. This attitude is a response to the previous criticism at European Union level related to the fact that market issues and economic aspects like profit were very important when drafting the project of the European Internal Market. Now it is time for the consumer to be at the center of the actions of European policies, to make the system more human-oriented instead of profit-oriented. This principle is in line with the new trends regarding the achievement of sustainability and of social responsibility.
Having this new policy orientation towards the consumer as a central element, new perspectives arise for consumers, as well as new roles for them in society. The consumer thus receives an active role in the context of energy policy. He is an active player in the energy sector. This shift of paradigm is reflected in the new project of te European Union in

the energy sector involving the transition from the concept of consumer to the concept of prosumer. The consumer can produce energy and it can provide it to the network. This is an element of novelty that was not present in the previous harmonization attempts at the level of the European Union. It marks the transition from consumer and related consumerism to prosumer with new roles in the energy policy of the European Union.
The practical impact of this new approach is reflected in new projects of the European Union, as the initiative of the European Commission regarding Smart Cities (EC, 2019b). This initiative shows the practical application of the energy policy, with benefits for the citizens of smart cities. The questionnaire-based performed research reflects the opinion of the respondents towards the importance of consumer protection in the context of energy policy. The case study of Vienna as a Smart City has a complementary role compared to the questionnaire based research, further reflecting the importance of the consumer-orientation in public policies, an issue illustrated in the practical case of the city of Vienna.
Vienna is an important smart city at European Union level (Stadt Wien, 2019a). The Austrian capital was ranked as the most liveable city in 2018 (Stadt Wien, 2019b) and it is known for its achievements in becoming and remaining an important smart city in Europe.
In order to reach and maintain this status, Vienna's municipality designs its goals for its strategy until 2050. A synthesis of these goals can be found in the table no. 1.

Table no. 1 Vienna – Smart City goals

Vienna	**Goals until 2050:**
Smart City Strategy	**→ efficient use of energy** **→ good energy performance for buildings** **→ good mobility with effective use of resources** **→ environment friendly city** **→ high rate of social inclusion** **→ good education for its inhabitants** **→ focus on research, innovation and development**

Source: Own representation based on Stadt Wien, 2019a.

In order to reach the goals within the Smart City Strategy, Vienna emphasizes the importance of using renewable energy which is environment friendly and permits an efficient use. The trend to use renewable energy is a behavior that can be learned and educated by presenting its advantages and by creating awareness regarding this issue. The evolution of this behavior in time for the city of Vienna is presented in fig. no. 1.

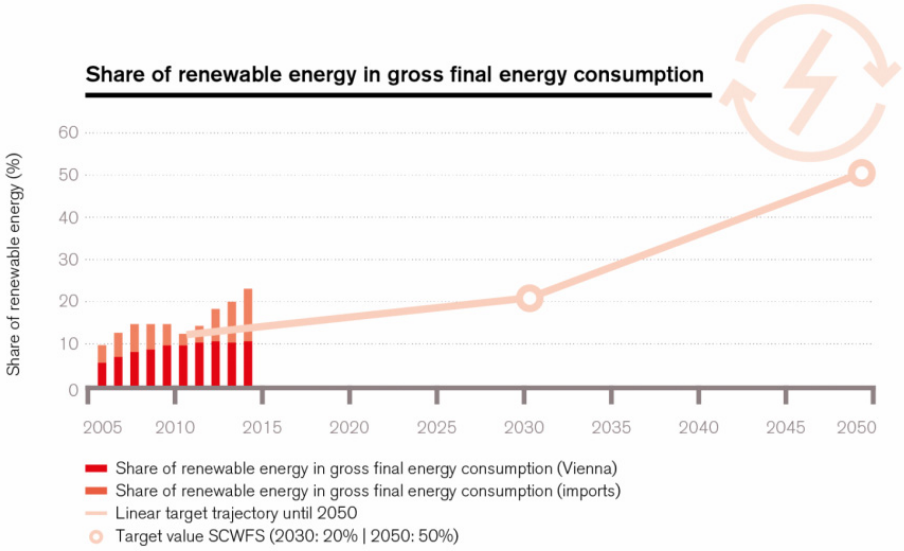

Fig. no. 1 Share of renewable energy in gross final energy consumption in Vienna
Source: Stadt Wien, 2019c.

The strategy of the municipality in Vienna has its focus on the wellbeing of the citizens of Vienna. It is thus a consumer-oriented approach. The goals and actions aim to create better living conditions for energy consumers in Vienna. The objectives of Vienna's consumer oriented strategy are highlighted in fig. no. 2.

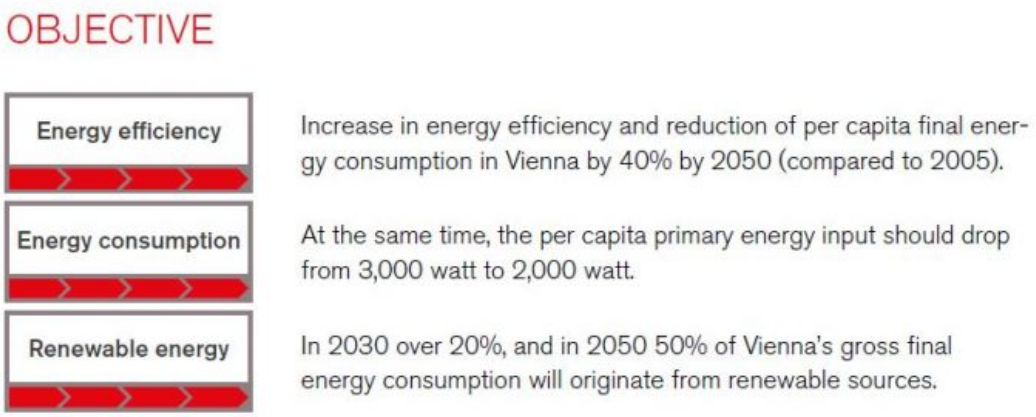

Fig. no. 2 Energy related objectives for the city of Vienna
Source: Stadt Wien, 2019c.

The importance of a consumer oriented energy policy is reflected as well in the results of the conducted research, where consumer protection and the use of renewable energies and clean energy are indicated by the respondents as the most important priorities for new policies in the energy sector. The results of the research can be summarized in fig. no. 3.

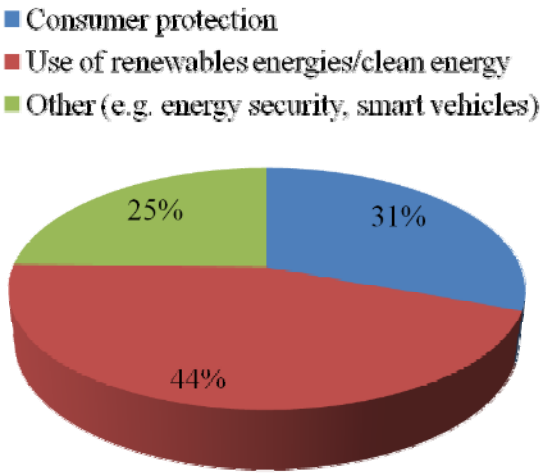

Fig. no. 3 Priorities for new energy policies
Source: Own representation based on the conducted research.

Conclusions

The present article highlights the importance of the consumer focus in the context of the new energy policies of the European Union, a very dynamic field which affects all of us, citizens of the European Union. As the latest developments in this field show it, this sector is one that will further develop in the future, as it is one of great interest. Further research will for sure be needed related to these new dynamics. The results of this paper can be used as a basis for further research. The role of the consumer will be more and more important when drafting policy measures and in this context further analysis of consumer behavior and the new energy policy will be needed. The importance of the consumer focus is highlighted by a study case presenting the strategy of Vienna as a smart city. The consumer orientation is obvious in the goals set by Vienna within its long-term strategy.

The present article creates a connection between the already studied topics of consumer behavior and the very new and developing field of energy policy with a focus on the consumer, thus creating a bridge between different fields and placing the topic of consumer protection into a currently very debated context of European policies, which is the energy sector, now in transition to clean energy.

The findings of the present paper related to the interdependency between consumer behavior and energy policy as well as the international comparative research performed bring a contribution to the world of academia that can be further developed in future research projects. As consumer welfare is an important value of the European Union, further research to consumer protection in the context of new energy policies at European Union level will for sure be needed and the results of the present study can be further developed.

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INTRODUCING A NEW TECHNICAL INDICATOR BASED ON OCTAV ONICESCU INFORMATIONAL ENERGY AND COMPARE IT WITH BOLLINGER BANDS FOR S&P 500 MOVEMENT PREDICTIONS

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Abstract
This research paper demonstrates the invention of the kinetic bands, based on Romanian mathematician and statistician Octav Onicescu's kinetic energy, also known as "informational energy", where we use historical data of foreign exchange currencies or indexes to predict the trend displayed by a stock or an index and whether it will go up or down in the future. Here, we explore the imperfections of the Bollinger Bands to determine a more sophisticated triplet of indicators that predict the future movement of prices in the Stock Market. An Extreme Gradient Boosting Modelling was conducted in Python using historical data set from Kaggle, the historical data set spanning all current 500 companies listed. An invariable importance feature was plotted. The results displayed that Kinetic Bands, derived from (KE) are very influential as features or technical indicators of stock market trends. Furthermore, experiments done through this invention provide tangible evidence of the empirical aspects of it. The machine learning code has low chances of error if all the proper procedures and coding are in play. The experiment samples are attached to this study for future references or scrutiny.

Keywords
Kinetic bands, Octav Onicesu's Informational Energy, Bollinger Bands, Boosting Modeling

JEL Classification
C51

Introduction

Investments are mushrooming all over the world and newer markets are increasing in the blink of an eye. However, there are several factors that play a role in ensuring an optimal environment for financial investments. The most important factor being the prediction of market trends on stock prices, as they determine the net profit and loss to the chosen business. The evolution of the market as well as the unpredictable trends, have been a major outdoing of several business investors. The ability to produce material to ease stock market predictions has been a dynamic issue within the past few years. Simple financial mistakes have led to significant crises in the world, rocking the most powerful economies. There is a current need for technical indicators that can be integrated into modelling systems in order to mimic the trends of stock market prices. The invention of the kinetic bands has a ready solution for the unpredictable market prices that could last for generations to come thus save people from financial disaster.

Methods and materials

The informational energy is a concept inspired from the kinetic expression of classical mechanics. From the informational theory point of view, the formulas informational energy is a measure of uncertainty or randomness of a probability system and was introduced and studied for the first time by Onicescu in the mid-1960s.

The informational energy and entropy are both measures of randomness, but they describe distinct features. This chapter deals with the informational energy in the framework of the statistical modelling. Here, we aim to display the main properties of the informational energy, its first and second variation, relation with entropy, and numerous worked out examples.

Definitions and Examples

For example if a random variable X=1,1,1,3,5,3 the kinetic energy is computed as following: There are 3 categories in the random vector 1,3,5 and the probabilities of each category are:

Prob(1) = 3/cardinality(X) = 3/6 = 1/2 (1)
Prob(3) = 2/6 = 1/3
Prob(5) = 1/6

KineticEnergy(X) = ″sum of squared probabilities″
$= \text{Prob}(1)^2 + \text{Prob}(3)^2 + \text{Prob}(5)^2$ (2)
$= (1/2)^2 + (1/3)^2 + (1/6)^2$
= 0.3888.

Nottice also:
If X = 1,1,1,1,1,1,....1,1,1,1 then KineticEnergy(X) = Sum$(\text{prob}(1)^2)$ = 1. (3)
In this case, there is no diversity and everything is perfect certain the kinetic energy is at maximum value 1.

Nottice in this case is something strange. Making an analogy with the atomic nuclei, this example with maximum kinetic energy is simmilar with the one in which the atomic nuclei come very close one from other, resulting in releasing large ammounts of energy as in our toy example, phenomenon called nuclear fusion.

IF X = 1,2,3,4,5,.. + infKineticEnergy(X) 0. (4)

Meaning that at maximum diversity and highest uncertainty the kinetic energy is at very low value near to zero.

Nottice in this case probably resulted from previous 1, the categories from the random vector could be interpreted as atomic nuclei resulted from expansion of the previous ones with high energy resulting in large number of atoms with low energy in the end, and we could think of that as nuclear fission.

This means that kinetic energy is bounded between (0 and 1].

Let S=$\{p\varepsilon = p(x;\varepsilon) I \varepsilon = (\varepsilon^1,\ldots,\varepsilon^n) \in E\}$ be a statistical model.
The informational energy on *S* is a function *I*:E→ R defined by

$$I(\varepsilon) = \int_x^{\infty} p^2(x,\varepsilon)dx \quad (5)$$

Observe the energy is convex and invariant under measure preserving transformations, properties similar to those of entropy.

In the finite discrete case, when $x = \{x^1, \ldots, x^n\}$, formula is replaced by:

$$I(\varepsilon) = \sum_{k=1}^{n} p^2(x^k,\varepsilon) \quad (6)$$

While Eq. (2) is obviously finite, we need to require the integral to be finite. However, if $x = R$, we have the following result:

Let $p(x)$ be a probability destiny on R satisfying:

(i) $p(x)$ is continuous

(ii) $p(x) \to 0 as x \to \pm\infty$

The informational energy of p is finite, i.e... The following integral convergent:

$$I(p) = \int_{-\infty}^{A} p^2(x)dx < \infty \quad (7)$$

Proof: let $0 < a < 1$.

Then there is number $A > 0 such that p(x) < a for |x| > A$

This follows the fact that $p(x) \searrow 0 as |x| \to \infty$, Writing:

$$I(p) = \int_{-\infty}^{-A} p^2(x)dx + \int_{-A}^{A} p^2(x)dx + \int_{A}^{\infty} p^2(x)dx \quad (8)$$

We note that:

$$\int_{-\infty}^{-A} p^2(x)dx < a \int_{-\infty}^{-A} p(x)dx = aF(a) < a \quad (9)$$

$$\int_{A}^{\infty} p^2(x)dx < a \qquad \int_{A}^{\infty} p(x)dx = a \quad (10)$$

Where $F(x)$ denotes the distribution function of $p(x)$ since the function $p(x)$ is continuous, it reaches its maximum on the interval $[-A, A]$, denoted by M, then we have the estimation:

$$\int_{-A}^{A} p^2(x)dx < M \qquad \int_{-A}^{A} p(x)dx = M\big(F(A) - F(-A)\big) < 2M \quad (11)$$

It follows that $I(p) \leq 2a + 2M < \infty$, which ends the proof.

The Kinetic Bands

Similar to Bollinger Bands, in which the rolling mean by a fixed, past back time window usually of 20 days. The upper and lower bands are defined at +/- two standard deviations

from the rolling mean; we define the kinetic bands based on the previous kinetic energy as follows:

- Rolling kinetic: = the rolling kinetic energy of the digits from the decimal part of a stock, foreign exchange rate currency or indexes.
- Upper kinetic band: = the band consisting of points that are 2 standard deviations from the rolling kinetic.
- Lower kinetic band: = the band consisting of points that are 2 standard deviations below the mean.

Experimental Findings

For the experimental research data set (500 S&P companies), we have downloaded open-source historical data from Kaggle website ***https://www.kaggle.com/camnugent/sandp500***.
From the historical data, the Machine Learning Models optimization will take very long for some to re-run the experiment, therefore we have decided to subset by symbol 'AAL' and in this way, our historical data contains 1259 rows with closing prices starting from 08 February 2013 until 02 February 2018.
Our goals were to optimize the Machine Learning Model by tuning the parameters to find the best performance metric. We have automatically constructed the target feature called, move' with signification that the price tomorrow will be higher than price today the value of the target will be 1 and if price tomorrow will be lower than price today the cost, the goal will be 0. Since our objective is a binary variable, we have chosen accuracy as the performance metric.
As for the Machine Learning Model, we have selected the Random Forest Classifier from Python Sklearn library. The best window we found, that maximized the performance metric was of size 45. In addition, we have also selected two standard deviation distances (from the mean/ kinetic energy) in order to create the tested Bollinger Bands and Kinetic Bands.
As good practice, to ensure the data is more Gaussian-shaped, we have applied log-transformation, before feeding into the Random Forest Model, the Kinetic Bands, Kinetic Energy and Bollinger Bands. The grid of parameters for which we conducted grid search in order to find the ones that would maximize the performance metric, is the following:

- n_estimators = [1,2,3,4,5,6,7,8,9,10,20,30,40, 50, 75,100,125, 150, 175,200]
- max_depth = [2, 4, 6, 8]
- The total number of training steps was 800.

Where:
n_estimators: integer, optional (default = 100)

The number of trees in the forest:
max_depth: integer or None, optional (default = None)

The maximum depth of the tree:
If None, then nodes are expanded until all leaves are pure or until all leaves contain less than min_samples_split samples.

Results

The optimal number of estimators was found to be 175, and the max_depth parameter was established to be six this resulting in the best accuracy score of **0.537**.

After training the model on complete data with these parameters, a plot was created to describe the feature importance, displaying that the lower kinetic band and the upper kinetic band both more influential power then Bollinger bands in predicting trends.

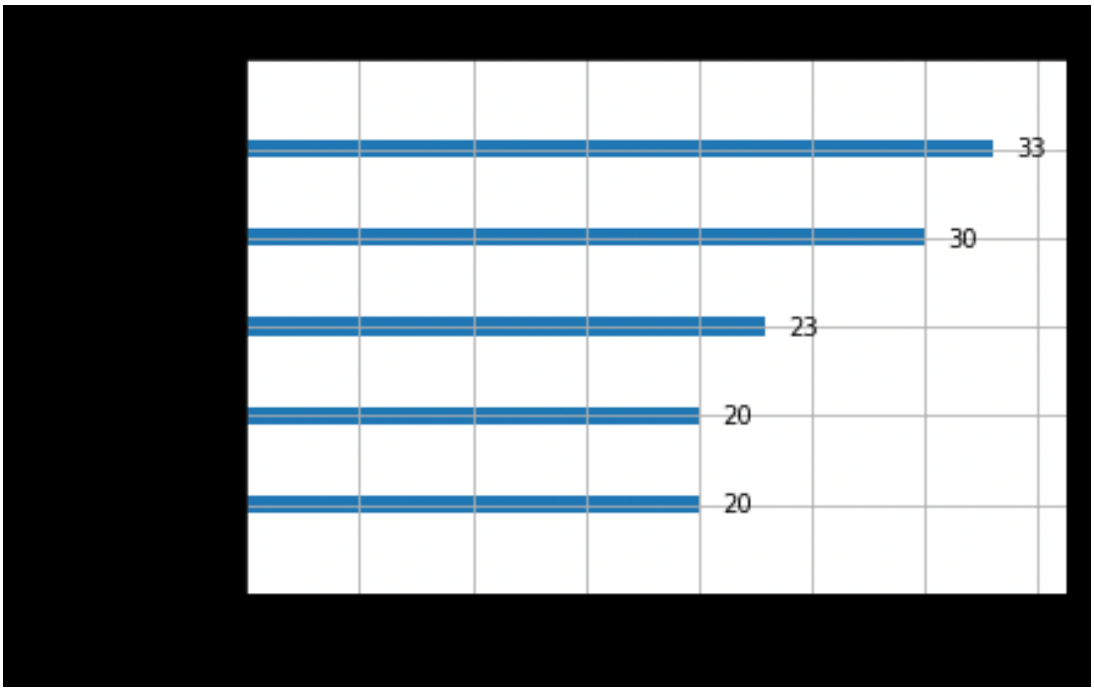

Fig. no 1. Feature importance of Kinetic Bands in comparison to Bollinger Bands

Source: Project Kinetic Bands, Alexandru Daia, 2018

Conclusions

The result of the experimentation of the kinetic bands proves that they can be quite reliable in predicting the prices of commodities through the analysis of previous data. The kinetic band indicator is the best technical indicator that can survive to the next generation producing highly accurate results that predict the future prices. The machine has the potential of knocking off the competition from the already existing devices that complete the projection task as well as price predictions as technical indicators. Research continues to improve on some of the parts that can make the machine work even better.

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KNOWLEDGE DISCOVERY IN SUPPORT OF HEALTH MANAGEMENT DECISIONAL PROCESS: IMPLEMENTATION OPPORTUNITY

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Abstract
A knowledge based decision support system would be able to augment the managerial decision making process through the evidence based approach on the impact on performance indicators. While many research areas in decision support systems focus on clinical applications there is potential to integrate these decision systems to support operational and managerial processes. In this paper, we evaluate decision support systems for both clinical and managerial operation and provide a framework on how these can be adapted to support achieveing a high level of key performance indicators.

Keywords
Decision support systems, knowledge discovery, management, ethical managerial decision in health organizations

JEL Classification
C13, C15, C52, C53, C61, C87, H51.

Introduction

The decisional process of health organization managers is challenged by the multitude of factors that must be taken in consideration. Beside the focus on the health outcome of the patients, managers must also consider the ethical and economical aspects of those decisions.
In Romania, the public health organizations must strive to achieve optimal key performance indicators as established by the Ministry of Health (Cumpat et al., 2019). The key performance indicators are a set of measures and corresponding acceptable range values for economics metrics (such as: length of hospitalization, cost of hospitalization, etc.), service quality metrics (such as: mortality rate, nosocomial infection rate, rate of re-admission within 30 days, etc.), management of human resources metrics (such as: number of patients discharged per doctor, number of consultations per doctor, etc.), service utilization metrics (such as: length of hospitalization, rate of bed utilization, etc.) (Mleşniţe, 2018).
Most applied studies focus on the solution for specific issues in individual units. There is a need to focus on generalizable approach for addressing common problems that face managers and physicians (Gunal and Pidd, 2010) In practice, the decision making process of health organizations managers is heavily influenced by the political climate at the time of

the decision and perceived favorable responses from the health system (Cumpat et al., 2019).
Decision support systems that use knowledge discovery could help the decision process by analyzing the impact of the decision on various aspects of key performance indicators therefore helping health organizations managers make economic, ethical and efficient evidence based decisions.
In this paper we discuss the use of knowledge discovery computerized systems as a decision support tool for a more effective and ethical decisional process. This paper is organized as follows. In the first section we evaluate related research work, in the second section we present the key performance indicators, in the third section we discuss knowledge based managerial decision support systems, in the fourth we discuss the integration of knowledge based decision support systems, and lastly, the fifth section is reserved for the conclusion.

Evaluation of Related Research Work
Various computing methodologies have been researched in an effort to develop evidence based managerial decision support systems. The researched focuses, in general, on selected measures of the key performance indicators. However, not all decision support systems are researched from a managerial decision making perspective but rather from a clinical perspective.
Systems designed to analyze the use of antibiotics have been researched in the context of monitoring infections, evaluating the outcome of the antibiotics treatments with the scope of optimizing the prescription of anti-infective drugs, and reducing the rate of nosocomial infections (Cánovas-Segura et al., 2016). While the system were primarily designed from a clinical perspective the models can be easily adapted to take in consideration the economic factors as well such as drug costs and length of hospitalization.
An economic driven knowledge based decision support system focused on integrating transaction costs has been researched by Yang (2016). The theoretical concept developed focused on the paradigms that influence managerial decision in practice such as: the fast pace of technology advancement, the degree of knowledge specificity required, the complexity of health care delivery in an organization, and the need to share information with others in the medical system network (Yang, 2016).
A theoretical concept of improving the human resources indicators was developed by Mura, et al. (2016). The framework is based on improving interpersonal relationship among employees which is expected to lead to an adequate improvement in effectiveness of the operations.
A recent research (Zeiberg, et al., 2019) used machine learning techniques for early detection of acute respiratory distress syndrome based on inputs in the electronic health record for admitted patients. The model intention is to optimize the timing of the clinical intervention for such patients which is expected to result in better health outcome for the patients, reduced health complications, reduced mortality rate, and reduced hospital stays.
A model for the predictability of ante-natal care use for pregnant women was researched by Workie and Lakew (2018). The study intended to determine the probability rate of ante-natal services used by patients based on several social variables such as mother's education, economic stability, geographical area, and access to some type of communication media. Because the use of ante-natal services is associated with reduced maternal mortality and a reduced rate of pregnancy related complication we can infer that managerial decision that affects at risk community members may results in improved hospital outcome as well.
A frequently used methodology for decision support system in health care is computer simulation which has been applied to specific health-care applications, such as modelling facilities, and simulation operations within the hospital. Cumpat et al. (2019) developed a simulation model using system dynamics methodology to study the impact of the rate of

nosocomial infections on key performance indicators in a medium size rehabilitation hospital in Romania. The key performance indicators studied in the simulation were representative for each indicator category: personnel requirements, service utilization, costs, and service quality. The simulation shows that investment in equipment, personnel, and supplies to reduce the rate of nosocomial infection will result in reduced rates of nosocomial infection therefore improving key performance indicators.
In our previous work, we presented an ontology approach for knowledge discovery of ECG data. While most of the analysis of ECG data is focused on diagnosis, the use of ontology can provide decision and policy makers insights into trends and patterns related to the medical status of patients in order to provide better service or to improve policies and procedures (Zouri et al., 2019).
In (table no. 1) we have summarized several studies for decision support systems that could be introduced or adapted in the managerial decision process.

Table no 1. Decision support systems used in health organizations

Study	Perspective	Scope	Managerial decision impact on key performance indicators
Cánovas-Segura et al., 2016	Clinical	Antibiotic stewardship	Reducing drug costs, reducing length of hospitalization.
Cumpat et al. 2019	Management	Impact of nosocomial infection rate on selected key performance indicators	Reducing length of hospitalization, reducing hospitalization costs, reducing mortality, optimizing service time of medical practitioners, reducing cost per bed.
Zeiberg, et al., 2019	Clinical	Early prediction of acute respiratory distress syndrome	Reducing length of hospitalization, reducing, mortality rate, reducing drug costs.
Zouri et al., 2019	Clinical	Ontology of ECG signal and patient demographics	Predicting disease trends and demands on the health care system.
Workie and Lakew , 2018	Clinical	Prediction of ante-natal service use	Reducing length of hospitalization, reducing mortality.

Overview of Key Performance Indicators
The key performance indicators are established through legislative order at the national level in Romania by the Ministry of Health. The key performance indicators are divided into four categories: human resource management, service utilization, economic indicators, and quality indicators. The human recourse indicators include the number of patients discharged per doctor, the number of ambulatory consultation per doctor, proportion of physicians from all personnel, proportion of health care professionals from all personnel, and the proportion of health care professionals with a BSc or higher. The service utilization indicators include the number of patients discharged per hospital and per each department, bed utilization rate, index of case complexity, the rate pf patients with surgeries, the rate of emergency admissions, proportion of patients with referrals that were admitted, total number of ambulatory consultations, and proportion of medical services performed for day admission from the total number of medical services per hospital and per department. The economic indicators include percentage of money spent from the allocated budget, proportion of human resources expenditures from all expenses, percentage of expenditures covered by

insurance, percentage of expenditures on drugs, cost of hospitalization per day and per department, percentage of hospital income. Lastly, the quality indicators include the mortality rate per hospital and per department, the rate of nosocomial infections, the rate of readmission within 30 days of discharge, the rate of correlation between the admission diagnosis and the discharge diagnosis, the percentage of patients transferred to other hospitals, and the number of patient complaints (Ordin nr. 112).
The legislation also includes calculation instructions for each indicator and a methodology for evaluating results. The results are posted on each hospital public website and become an image of the efficiency and service quality of the hospital and the managerial performance (Ordin nr. 112).

Knowledge based managerial decision support systems
A decision support system for managerial decision is based on cascade calculation of impact for the key performance indicators of the factors for which a decision is to be made. The cascade calculation of impact is based on evidence from past performance and includes expected changes in performance of the new investment for which the managerial decision is expected. However, the investment must be considered in the context of economic indicators for optimization.
An investment sustainability is dependent of the prior knowledge of the environment the organization is operating within. The user needs, which in a health organization environment are either patients or health care professionals, are at the center of the managerial decision. However the investments must be supported by solid evidence of gains for the health organization. The balance between the user needs and a cost analysis for investment is dependent on the organizational autonomy, existence of trained staff, and expected outcome on key performance indicators (Hanohov and Baldacchino, 2017).
A knowledge based decisional support system will integrate data collection and data retrieval utilities with modeling and simulation techniques. A comprehensive system may be based on a collection of subsystems each targeting a category of key performance indicators. Resource allocation and process improvement can be optimized by the use of various computational methodologies which can be applied to assist in decision making related to healthcare design and planning. A typical procedure in designing a modeling decision support system includes the following steps: Data Collection and Analysis, Process Mapping, Base model design, Simulation scenarios, results analysis and design decisions (Cai and Jia, 2018).
A hospital manager in Romania must evaluate and consider any direct or indirect impact of their decisions on the performance indicators therefore decisional optimization must be the core tenet of any managerial approach.
In (fig. no. 1) we show how managerial decision are influenced by factors from each category of key performance indicators which in turn are influenced by investment decisions. The data in this figure is based on the key performance indicators for Romanian's Hospitals.

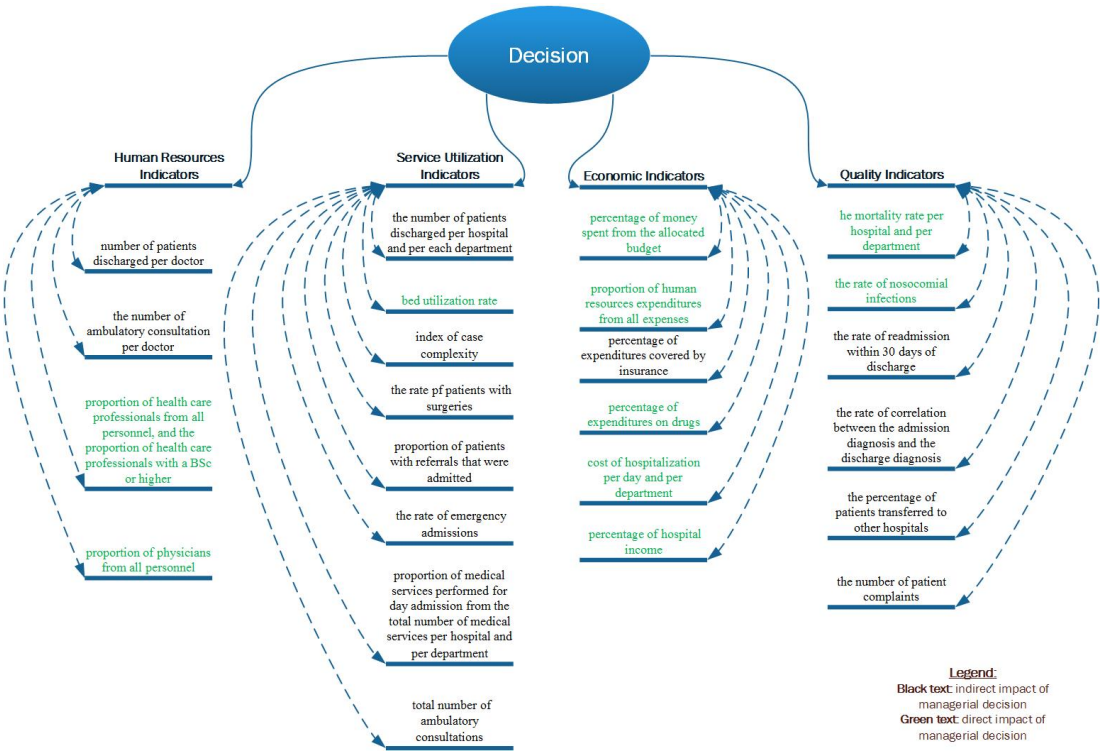

Fig. no. 1. Decision impact considerations and decisions direct impact on key performance indicators

Integration of knowledge based decision support systems

Integration of decision support systems in managerial decisional process involves not only the simulation component but also a data collection component and a dialogue component. The data collection includes two types of data: internal and external. Internal data refers to historical organizational data, while the external data refers to legislative directives, information about the subject of the financial investment the manager is considering in the managerial process, and latest research. The dialog component would allow the managers to as ask questions related to the various factors considered in the decisional process as well as to compare outcome with alternative decisions (Liu et al., 2007). In (fig. no. 2) we show the integration concept of a managerial decision support system based on the three components described above.

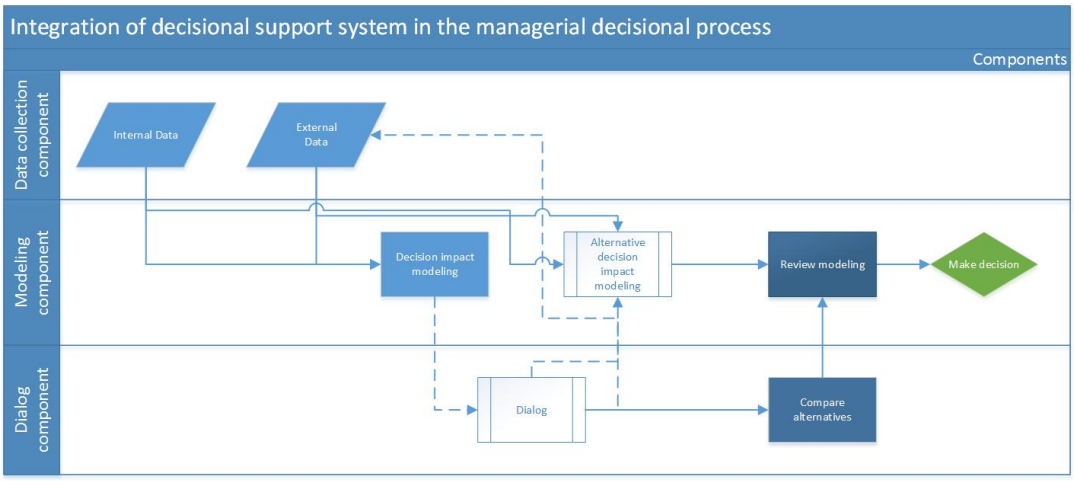

Fig. no. 2 Integration of decisional support systems in the managerial decisional process

Conclusions

The knowledge discovery decision support systems could help health organization managers make evidence based decisions with the focus on key performance indicators. The requirements of a managerial decision support system may intersect with clinical decision support system requirements however the goal is extended to include not only health outcome optimization for patients but also improvements and optimization of economic measurements for the health organization.

The implementation of knowledge discovery decision support systems could help health organization managers obtain answers to questions such as: buying this new equipment will help my organization improve, maintain or achieve the key performance indicators measures? Or developing a new policy on prescriptions will help my organization save on drug costs?

However, any knowledge discovery based decision support system will only be as good as the quality of the knowledge acquisition. The systems must be developed in the context of the health organization environment and must integrate the limitations of the physical work space, legislative constraints as well as socio-political climate.

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APPLICATION OF ENVIRONMENTAL ASSESMENT IN AUTOMOTIVE INDUSTRY

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Abstract

Over the years automotive industry has been one of the most rapidly developing branches of the world economy. However, the main reasons for development have changed. One of key point in its automotive development has become the effort to lower the industry's impact on the environment in particular, during the vehicle's use phase.

One of the challenges for the industry is the design of the vehicle, which in the use phase is able to fulfil the maximum permissible emission requirements specified in individual EURO series standards.

The present article contains a description of the applicable legal provisions (at the EU level) in relation to the phases of the vehicle life cycle. The main focus has based on the literature examples of LCA application to the selected elements of vehicles potentially be relevant when considering the full life cycle of a vehicle as well as preliminary results of LCA for aluminum pistons.

Keywords

Environmental assesement, LCA, automotive industry, automotive downsizing, aluminum pistons

JEL Classification

L20, L62, O10, O33, O44

Introduction

Many directions of development are created and directed by legal requirements. It's the amending rules, limit values, limits and injunctions in various countries and the EU, in some extent direct the development of individual technologies. It should be remembered, however, that the impact of many technologies in the automotive industry can take place directly but also indirectly. In the course of a changing reality, the way of their verification may also change.

One of the challenges for the industry is the design of the vehicle, which in the use phase is able to fulfill the maximum permissible emission requirements specified in individual EURO series standards. However, meeting the requirements of each subsequent directive increases the diversity of processes including production. In Europe, we have many legal requirements regulating the environmental impact of individual phases of a vehicle's life cycle. But only the LCA is contained in a comprehensive way. In order to address this issue from all angles as opposed to simply pick and choose particular legal regulations, the producers on the automotive market have agreed a common point of reference: the LCA –

Life Cycle Assessment tool, which includes an assessment of the environmental impact throughout all the stages of the product lifecycle.
The present article contains a description of the applicable legal provisions (at the EU level) in relation to the phases of the vehicle life cycle. Entails state-of-the art knowledge on the direction of changes implemented in the applied technologies within the automotive industry and present the most relevant findings of research carried out on the subject. They have been approximated methods of presenting environmental data by car manufacturers to increase and emphasize the environmental credibility of the chosen development directions of their products. Shows how the producers presents improve the environmental performance over the entire life cycle of a cars in successive model generations. Attention was also drawn to the key importance of the main suppliers of components for the automotive industry. Authoring projects that can be adopted by the final vehicle manufacturers are presented. Accordingly, the shape of the current eco-friendly initiative in the automotive supply and delivery chain has been called to question, especially taking into account the key role of the suppliers and the complexity of the environment data output at the production level.

1.1 Environmental legal conditions for all phases of the life cycle

The direction of development of the automotive industry for many years has been focused on lowering the environmental impact because 25% of global CO2 emissions come from transport and 13% from passenger cars (ACEA, 2018).
Due to the high ecological and social footprint of the automotive sector, car manufacturers are under pressure from policymakers and other stakeholders to improve the sustainability performance of vehicles at every stage of the life cycle. Starting from the extraction of raw materials where we have to deal with concessions in the mining of raw materials or mandatory waste recycling. Through the regulation of eco-design and production, including environmental taxes and fees. Coming up to a very important regulation for the use phase - emission standards. Ending on regulations related to the end of life of the vehicle when it becomes a waste and need to develop it – ELV Directive (Jasinski et al., 2015)
The efforts of both the EU legislators and national experts not have been limited to the use and recycling of vehicles but regulations regarding the use phase are developing most dynamically are defined in EC Directives named EURO 1-6 emission standards for vehicles (Directive 98/69/EC; Directive 2002/80/EC, Regulation (EC) No 715/2007).
Still, one of the primary challenges facing the automotive industry is the a creation of a vehicle that would meet the maximum allowed EU emission standards specified in the directives also taking into account changes in control standards. The requirements of each new “EURO” standard entail even greater variety of processes that every single car component needs to go through in order to meet them. In recent times, followed by significant change in the methodology of fuel consumption and emission tests.

1.2 The regulations on the measurement system for the use phase

New European Driving Cycle (NEDC) was designed in the 1980s to assess the emission levels of car engines energy efficiency in passenger cars and became outdated today due to several evolutions in technology and driving conditions. NEDC test determined values based on a theoretical driving profile. Moreover, the impact of the presence of optional features on the CO_2 and fuel performance of a car was not considered under NEDC (ACEA, 2018).
Having in mind imperfections European Union has therefore developed a new test, called the WLTP (Worldwide Harmonised Light Vehicle Test Procedure). WLTP cycle was developed using real-driving data, gathered from around the world. WLTP therefore better represents everyday driving profiles. The WLTP driving cycle is divided into four parts with

different average speeds: low, medium, high and extra high. Each part contains a variety of driving phases, stops, acceleration and braking phases. For a certain car type, each powertrain configuration is tested with WLTP for the car's lightest (most economical) and heaviest (least economical) version. In WLTP was added new element as Inertia of rotating parts and Battery State Of Charge correction (Pavlovic et al, 2018).
WLTP was developed with the aim of being used as a global test cycle across different world regions, so pollutant and CO2 emissions as well as fuel consumption values would be comparable worldwide. However, while the WLTP has a common global 'core', the European Union and other regions will apply the test in different ways depending on their road traffic laws and needs.

1.3 Direction of development - Car body and some equipment items

The weight of the car body plays a very important role in the total weight of the vehicle that affects the energy demand. One of the principal elements of a passenger vehicle that decides about its total mass is the car body, which may constitute as much as 40 to 60% of the overall mass (Zieliński, 2008) For example, it is estimated that a 10% reduction in a vehicle's weight translates into an increase in miles per gallon of 5% (Mayyas et al., 2011).
Despite the development of many material technologies, the main materials used for production remain metals: steel and aluminum. However, the development of metals is associated in particular with the introduction of extremely light alloys in places where it is possible (not forgetting about safety, which is also significantly affected by the body). The implementation of the latest technologies, such as laser beam welding, forging and hydroforming allows also help decrease the car body mass (Senkara, 2009).
It would have appeared that in times when most of the industry efforts have been aimed at lowering the fuel consumption and harmful emissions, the fate of steel is doomed and it will surely have been replaced with lighter alloys and composites by now. As it turns out, however, the steel industry has also been experiencing a dynamic growth. The innovative alloys, the forming and forging methods combined with the ease of recyclability maintain the position of steel among the prime materials used in vehicle construction. The key importance of proper construction of a car body becomes obvious when looking at the example of Mercedes. The metal components of the car body differ between different generations of the same car make. During the production of a Mercedes C-Class (from 2013) almost 40% more of aluminium alloys was used compared to the previous versions. The LCA assessment carried out proved that the choices of materials did allow to achieve a clearly positive result in terms of lowering the environmental impact during the exploitation phase, at the same time reducing the fuel consumption by 20% (Mercedes Benz, 2013).
Renewable raw materials help to reduce the consumption of fossil resources such as coal, natural gas and crude oil. In automotive production, the use of renewable raw materials concentrates on the interiors of vehicles. Established natural materials such as coconut, cellulose and wood fibres, wool and natural rubber are also employed, of course, in series production of the S-Class. The use of these natural materials gives rise to a whole range of advantages in automotive production. The materials used is for example leather for fabric covers for seats and backrests, wood for basic carriers of door panels, trim parts and steering wheel (Daimler AG, 2015).
In Mercedes S-Class, 51 components with an overall weight of 49.7 kilograms can be manufactured partly from high quality recycled plastics. These include wheel arch linings and underbody panelling. The mass of secondary raw material components has increased by 134 percent compared with the predecessor model. Secondary raw materials are obtained wherever possible from vehicle-related waste flows: Wheel arch linings are made from reprocessed starter batteries and bumper coverings.

Fuel consumption is strongly influenced by vehicle weight: about one third of total consumption directly depends on its mass (Koffler and Rodhe-Branderburger, 2010).
The weight reduction that Audi achieves by using lightweight materials permits welcome secondary effects in other areas of the vehicle. Lower body weight initiates a downward turn in the weight spiral, which permits chassis and drivetrain components to be downsized, for instance by reducing the size of the brakes. Weight-saving potential is possible in every technical area. In the life cycle assessment these savings help to compensate for the additional effort and expense incurred in the manufacture of lightweight materials (AUDI, 2011).
Following this rule during the production of a new Audi A6 model, the steel mass was reduced by 5% to the favour of aluminium (compared to the previous A6 model). The manufacturer stresses that the production of a new A6 model made use of more light metals characterized by increased energy consumption at the production level (which found its reflection in poor CO_2 results at the production level). However, already after 5000 km it reaches a breaking point after which every following kilometre looks better and better from the environment's point of view. The conclusions and comparisons between the faults and advantages such as the one above only confirm the validity of the closer look at the environmental impact, taking into consideration the full lifecycle of a vehicle.

1.4 Direction of development - Drive sources

The most common market share has been for years with vehicles with internal combustion engines. Diesel and petrol engines market share in the years 2012-2015 was over 97% (ACEA, 2017a). But recently it has started to change more intensively. In the first quarter of 2018, there is a clear drop in favour of alternative fuels. The most pronounced decline in the number of new diesel vehicles - 37.9% which gives a 17% decrease compared to last year, and the total result of the vehicles with combustion engine was 93,4% (ACEA, 2018) 6,5 % increase of Alternatively Powered Vehicles (APV) of which 1,5% are battery electric and 3,4% of plug in hybrid electric cars.
Due to increasingly strict requirements related to harmful emissions during the exploitation phase, some technological changes in the engines are also being made. Based on the manufacturers analyses, the environmental life cycle looks different for vehicles with different drive sources.
A comparison of the CO_2 emissions of the S 500 PLUG-IN HYBRID with the S 500, which offers similar performance, is presented on Fig. 1. Production of the S 500 PLUG-IN HYBRID entails a visibly higher level of CO_2 emissions, on account of the additional hybrid-specific components. However, over the entire life cycle, comprising manufacture, use over 300,000 kilometres and recycling, the plug-in hybrid clearly has the edge. External charging with the European electricity grid mix can cut CO_2 emissions by some 34 % (27.5 tonnes) in comparison to the S 500. Through the use of renewably generated electricity from hydro power a 56 % reduction (45.4 tonnes) is possible. In electrical vehicles, the key aspect here is the source of electrical energy. the emissions during the exploitation phase vary when the electricity is derived from carbon, gas or wind power.

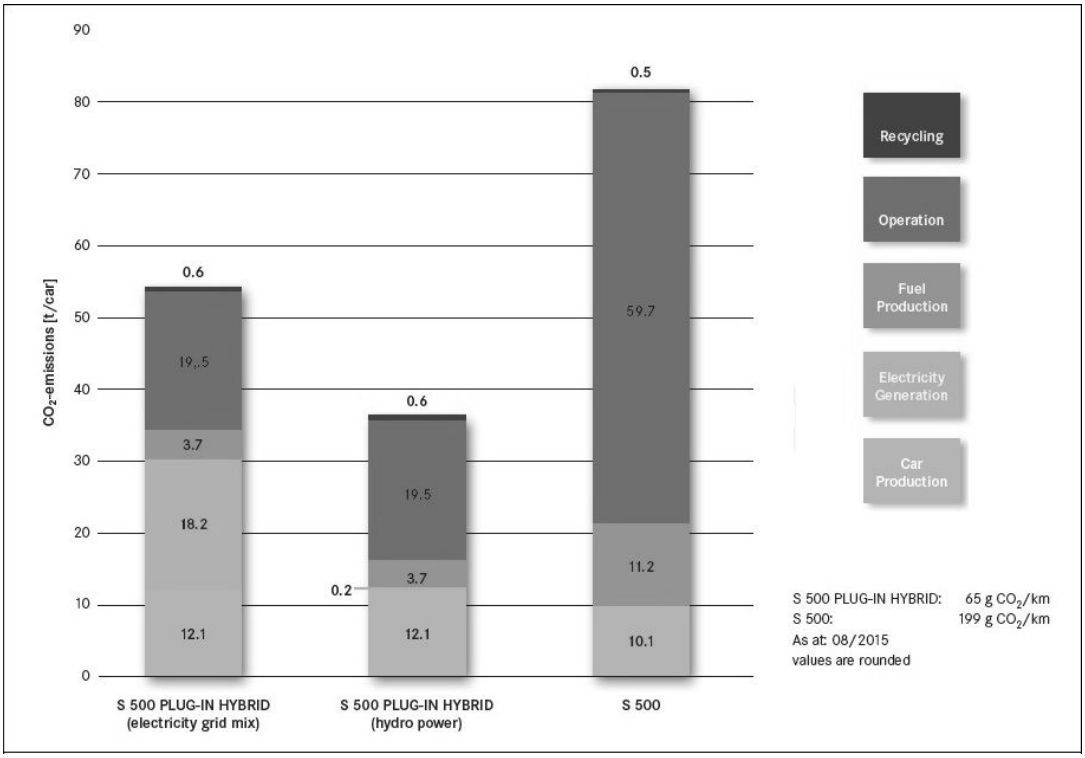

Fig. no. 1 Comparison of CO2 emissions of Mercedes S-Class with different power source
Source: Life Cycle Environ. Certificate Mercedes-Benz S-Class including S 500 Plug-in Hybrid

However, new trend is to change main material for production one of the most important engine components. In order to decrease the harmful emissions and limit petrol consumption, during the production of a combustion engine one of the manufacturers has used ultra-high strength steel, a seemingly heavier but much more durable material. The application of material that is far more durable than the commonly used aluminum has allowed for a change in dimensions and structure of the piston, which, in return, has lowered the emissions and petrol consumption by increasing the thermal expandability and lowering friction, among others. The steel construction has also permitted to reduce the piston height by 30%, which made room for the use of a longer traction rod that reduces the lateral forces by 10% (Mercedes-Benz, 2014). This kind of seemingly insignificant changes generate lower CO_2 emissions (between 2% to 5%). That said, clearly some substantial modifications in the production technology are required to achieve that effect. It is not just the materials for the piston, but also the number of production processes that is altered. As a result of the above, a full-scale comparison has been carried out of the environmental impact during the production of aluminium and steel pistons, respectively. In our previous paper (Grygiel et al., 2017) we signalled the beginning of the LCA analysis for pistons. Now preliminary results of such analysis based on the data from producer will be presented for aluminium pistons**.**

Methods

The aim of the study was to assess the environmental aspects of aluminum pistons production with the use of Impact 2002+ LCIA method. Functional unit (FU): production of 1 million of aluminum pistons per year. The system boundary included the processes realized in the plant and upstream processes (from cradle to gate) for which data has been collected from Ecoinvent database. Processes realized in the plant were divided into two

groups: basic processes (processes leading to the manufacturing of a finished product) and auxiliary processes (supporting processes). The first group included melting of aluminium, casting and cutting of cast iron forms, casting of pistons, heating, machining and surface treatment . The second group consisted of salt cores production, refining, furnace cooling, quality control, internal transport and neutralization of gases and waste water.

Preliminary results of LCA for aluminum pistons

Presented results are attributable to the annual production of aluminum pistons (nearly 17 million pieces) in analyzed manufacturer from Wielkopolska/Poland. Production of aluminum pistons affects the environment at the level of 99.05 kPt. The most significant is the impact on the human health category (more than 40% of the total Single Score). Environmental impact includes also interventions that contribute to climate changes and then natural resources depletion (29% and 23% of the total Single Score). Environmental aspects of analysed system production and their contribution to the indicator's total value are presented in Table 1. In terms of environmental harmfulness, the group of basic

Table no. 1 Total Enviromental impact of aluminum pistons production

Environmental Aspects	SINGLE SCORE			
Materials production and consumption	76,54	kPt	77,27	%
Energy consumption	22,13	kPt	22,34	%
Air emissions	0,44	kPt	0,44	%
Emissions to water	0,17	kPt	0,17	%
Solid waste	-0,244	kPt	-0,25	%
TOTAL	99,05	kPt	100	%

Source: results of own analyzes.

processes definitely dominates. Environmental impacts generated during these processes is almost 93 kPt. If we compare particular unit processes it can be notice that the most environmentally significant is melting of aluminium. It generates environmental impact at the level of 75.77 kPt, representing about 77% of the total Single Score (Figure 2). The most important source of negative impact caused by the melting process is consumption of production materials. The calculated ecoidnicator for this aspect is 72.63 kPt (about 73% of the total Single Score). The next important issue is energy consumption in heating, machining and surface treatment and generates environmental impact at the level of 12.80 kPt, representing almost 13% of the total Single Score.

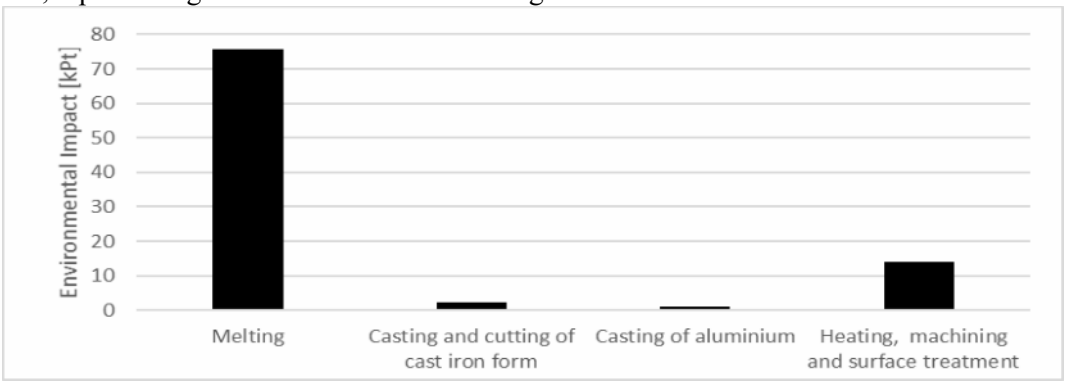

Figure no. 2. Environmental impacts of unit processes classified as basic processes expressed as the Single Score

Source: results of own analyzes.

Conclusions

LCA has been gaining prominence in the production process and is becoming more and more important for the manufacturers when designing and improving their products. The automotive's LCA research to date has been focused on the selection of raw materials which thanks to their characteristics ensured that substantially favourable results could be achieved in terms of fuel consumption, easy dismantling and pro-environmental waste disposal.
Detailed LCA studies of the production phase of aluminum pistons conducted on the data obtained from the subcontractor of the engine components indicate that the most ecologically troublesome unit processes in the production of pistons are aluminum melting, followed by machining and surface treatment of cast pistons.
The most important is the impact on the category of human health, followed by climate change and then depletion of natural resources.
The results of the LCA survey should gain importance for the design stage of these products because they provide knowledge and awareness of environmentally-specific unit processes.

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THE PREVALENCE OF EMOTIONAL CRITERIA IN FOOD CHOICE - THE MAIN SOURCE OF IMBALANCE IN THE EATING BEHAVIOUR OF THE YOUNG CONSUMERS FROM ROMANIA

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Abstract
Analyzing how individuals, in their hypothesis of foodstuff's consumer, use their psychological endowment, consisting of both rational and non-rational components, to make choices, we can distinguish two main and relatively antagonistic typologies: a traditional consumer and a new consumer. We observe at the traditional consumer a preponderant reflexive attitude that affirms the supremacy of thinking in using the components of endowment, because his perception of food quality is decisively influenced by technical aspects, generally measurable through objective methods. On the opposite, the new consumer appears to be completely seduced by the sensory dimension in assessing the foods' quality, a situation that reveals the supremacy of sensation or sensory perception on thought. Being the palate slaves, young consumers believe that a tasty foodstuff which is also good looking, has implicitly a good quality. But, considering that the most part of the industrial food supply on the market is represented by ultra-processed and sensory improved products, which most often has a profoundly unbalanced nutritional profile, it is obvious why the behaviour of the new generation of consumers is marked by many errors and imbalances. Having the aims to highlight the main characteristics of food behaviour among the new generation of consumers in Romania and to determine the rational and emotional criteria that guide their foods' selection, we conducted a marketing research, based on the method of the selective survey. The information was collected using a structured questionnaire, applied to a sample of 678 respondents, between 18-35 years old, selected by non-proportional random layered sampling.

Keywords
Alimentary behaviour, new generation of consumers, cognitive reactions, emotional reactions, marketing research

JEL Classification
D91; D12

Introduction

In the analytical psychology, it's widely accepted the idea according to which the human knowledge does not start from an absolutely empty place or a tabula rasa, but from certain

premises, embodied in the information which psychic mechanisms operate with. It is therefore obvious that its evolution will depend equally on the quantity and quality of these premises, whose influence can be both favourable and unfavourable (Zlate, 2006). Analysing the opinions expressed by the most important analytical psychologists, we have noticed that they assumed that all people possess the same psychological endowments through which they perceive what is happening outside and within them, formulate opinions on all of these, and decide how to respond to events as they happen.

Carl Gustav Jung (2004), in developing the famous model of the eight psychological types, shows that the endowment consists of *four psychological functions: sensation, thinking, feeling* and *intuition*.

The sensation, meaning the perception through senses or sensory perception, says that something exists. The thinking says what exactly is something. The feeling used to make judgments about the inner and outer events tells whether something is pleasant or not, and because it involves an evaluation in the light of the past experience, thus it can be considered a rational process. The intuition tells where it comes from or where something is going on. Thinking and feeling are considered rational functions, while feeling and intuition are non-rational functions. Considering the use of endowment's components, what distinguishes people from each other is that function out of the four that they use preferentially (Jung, 2004; Stevens, 1994).

Analysing the manner in which the individuals, in their hypostasis of food consumers, use their psychological endowment to make choices, we can distinguish between a *traditional consumer* and a *new type of consumer*.

We observe at the traditional consumer a reflexive behavior that affirms the supremacy of thinking in using the components of endowment, because his perception of quality is decisively influenced by the technical aspects, materialized in chemical composition, nutritional value and innocuity, the product's sensorial aspect remaining in the second plan. This approach is the result of knowledge and information gained successively through education and settled through personal experience (Popescu et al., 2010; Negrea and Voinea, 2013; Bobe and Popescu, 2015).

Unlike the traditional consumers, we observe that, in general, the exponents of the new generation of consumers are seduced by the sensory dimension in assessing the quality of the foodstuff. This situation, which reveals the supremacy of sensation or sensory perception on thought, can be explained by the fact that the new consumer has formed his eating habits in the period of the maximum boost of the food industry and he is generally accustomed to consume the ultra-processed and sensory improved products, but most often with a profoundly unbalanced nutritional profile, created by the modern food industry (Bobe and Procopie, 2011; Voinea, 2013). Having the images of such products stored in memory, the new consumer's possibility of knowing, which requires, as Carl Gustav Jung (1994; 2006) claimed, the comparison between the perceived images of the food product with those from memory, is obviously more limited. This may explain the new consumer's predilection to render absolute the role of sensory properties in perceiving the quality of the food products and to neglect or even disregard the nutritional properties (Negrea and Voinea, 2010; Popescu et al., 2011). This is one of the common findings of many international studies aiming to identify the decisive factors in guiding the food choice of young people. These studies have showed that the taste is the characteristic which has the critical role and also that in the process of changing the food consumption behavior, the young people are less willing to make compromise on taste (George and McDuffie, 2008, Louis et al., 2007, Davis and Carpenter, 2009). Therefore, it can be said that the exponents of the new generation of consumers are palate slaves, considering that a tasty foodstuff, which is also good looking, it has mandatory a good quality (Onete et al., 2014, Popescu et al., 2015; Voinea et al., 2015).

Another explanation for the young consumer's preference for industrial, refined foods rich in saturated fats and sugar is the mental association of this eating behavior with the idea of independence and fun with friends, while eating healthy foods is associated with the parents' control (Beasley et al., 2004).
Based on all the above assertions, the fact that in the selection of foods the emotional criteria prevail over the rational ones, it can be a plausible explanation for the imbalance that characterizes the eating behaviour of young consumers. In this respect, our research, having the main aim to study the main aspects of food behaviour among the new generation of consumers in Romania, also highlights the rational and emotional reasons that lead young people to adopt the eating style.

Methods
The **purpose** of the present marketing research was to study the main characteristics of food behaviour among the new generation of consumers in Romania. The direct research carried out was quantitative in nature, using the selective survey **method**.
Research **objectives** focused on the following dimensions of the problem investigated:
To identify the extent to which young Romanian consumers have concerns about healthy eating;
To understand the content of the image that the concept of healthy nutrition has among the new generation of consumers in Romania;
To determine the rational and emotional reasons that cause difficulties for young Romanian consumers in adopting a healthy food style;
To find out the degree of trust that the new generation of consumers have towards different sources of information on healthy eating;
To identify the rational and emotional criteria underlying the selection of food products by young consumers as well as the relative importance they hold in the buying decision process;
To explain the healthy and unhealthy eating habits of the new generation of consumers in Romania.
The **target population of the research** was made up of people aged 18-35 from Romania, so that both the observation unit and the survey unit were represented by the individual.
The information was collected using a **structured questionnaire**, applied to a **sample of 678 respondents**, selected by **non-proportional random layered sampling**. Layers were based on demographic variables, including sex, geographic region, and income.
The sample consisted of 43% men and 57% women, 94.21% of urban areas, distributed by geographical regions as follows: Bucharest: 55.4%, Muntenia: 24.2%, Moldova: 8.2%, Oltenia: 6.4%, Dobrogea: 4.3%, Ardeal: 1.4% and Banat-Crişana-Maramureş: 0.3%. Regarding household net monthly income, the structure of the sample was as follows: below 1000 RON: 16.1%; 1001 - 2000 RON: 32.4%; 2001-3500 RON: 35.7%; 3501 - 5000 RON: 12% and over 5000 RON: 3%.

Results
Regarding the concern *to have a healthy diet,* the majority of respondents said they are concerned about this issue to a high degree (49.4%). In the proportion of 26.5%, the respondents are indifferent to a healthy diet. Another 16.1% of the respondents said that they are concerned about having a healthy diet. Around 8% of respondents are not concerned about this problem (6.5% are concerned about a low level, and 1.5% to a very low degree).
When they was asked *to choose from a range of variants on those that best illustrate a healthy diet* (Figure 1), the respondents answered as follows: keep the main meals of the day - 35.1%; Consume at least one hot meal per day - 17.6%; keep a diet to lose weight - 5.6%; I

count the calories permanently so I do not get fat - 3.4%; I assure myself the daily needs of nutrients from a variety of healthy foods - 27.1%; I eat what I like - 10.7%.

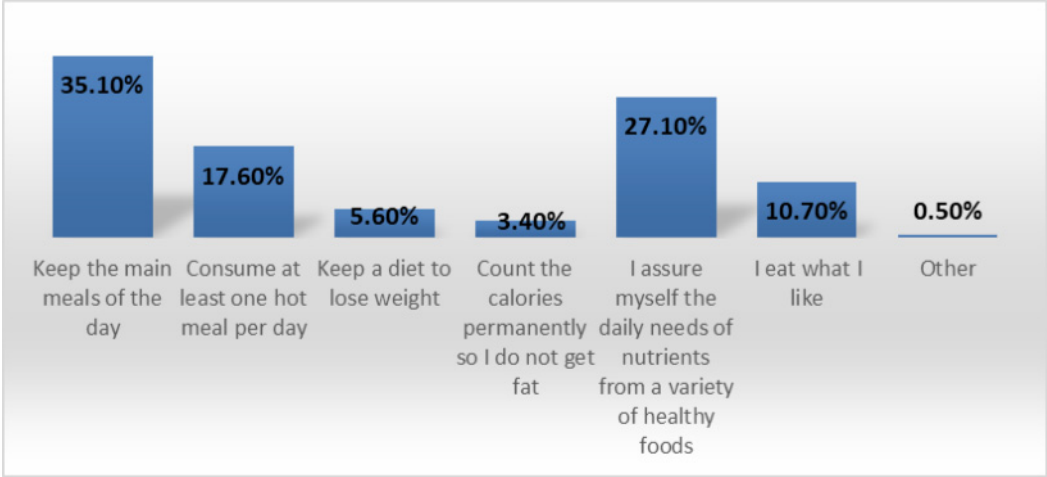

Fig. no. 1 Behaviour related to a healthy diet

The answers show that consumers generally associate healthy eating with respect to the three main meals of the day and the consumption of a variety of foods to ensure trophic requirements. However, the results show that 1 in 10 respondents believe that having a healthy diet means eating just what you like.

On request to enumerate *the reasons why they think they can not have a healthy diet* (Figure 2), most respondents claim the lack of time (28.2%). In a ratio of 25.9%, respondents believe that raw materials are generally polluted or genetically modified, and processed foods contain food additives, which prevents them from having a balanced diet.In a ratio of 14%, respondents have reasoned that they can not have a healthy diet because healthy foods are too expensive. Approximately 10% of respondents say they can not have a healthy diet because they do not have the necessary expertise. It is important to note that around 21% of respondents said they consume only the foods they like without being interested in their health consequences (8.0% say they consume only the foods they like and 12.9% say that I can not give up to the foods I like, though I know most are not healthy).

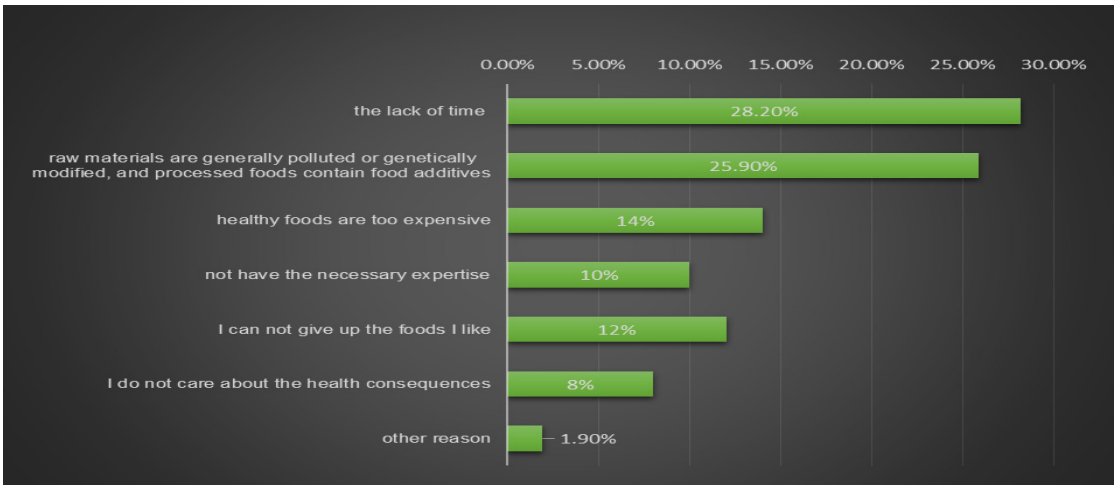

Fig. no. 2 The reasons why they think they can not have a healthy diet

As regards the respondents' confidence in various sources of information on healthy eating, on average, the results are as follows: information from the food label - 3,4755; specialized shows on TV or radio - 3,211; Internet (sites, blogs, forums, social networking sites) - 3,3795; various publications - 3,1786; family and / or friends - 3,878; family doctor / specialist - 4,1749; other sources (listed by respondents: nutrition blogs, books, personal knowledge, nutritionist, people working in the field, product price, professors, seller recommendations, specialty magazines, traditions) - 2,7931. (See Figure 3)
We note that although the health care system in Romania has numerous dysfunctions, which are reflected in the quality of the medical services provided, however, the consumers who participated in the research have the highest trust in the family doctor or the specialist. On the second place, as a trust level, is family and / or friends, and on third place are the information from the food label.
It should be noted that the Internet (sites, blogs, forums and social networking sites) is ranked fourth as a level of trust, before broadcasting on TV or radio. This result confirms a series of previous research, both nationally and internationally, which shows that, in present, among the current generation of consumers is now obvious the trend of increasing confidence in the online content generated by their peers, with whom they interact in virtual environment (blogs, forums, review sites, social networking sites, etc.).
Young people are generally characterized by Internet addiction, the information environment that enjoys growing confidence from them, and from which they obtain the information that guides their purchasing decision. This trend is explained by the fact that the online environment is the one that gives young consumers the complete freedom to find the information most relevant to themselves, even if the selection of this information is not always done correctly, rationally / objectively.

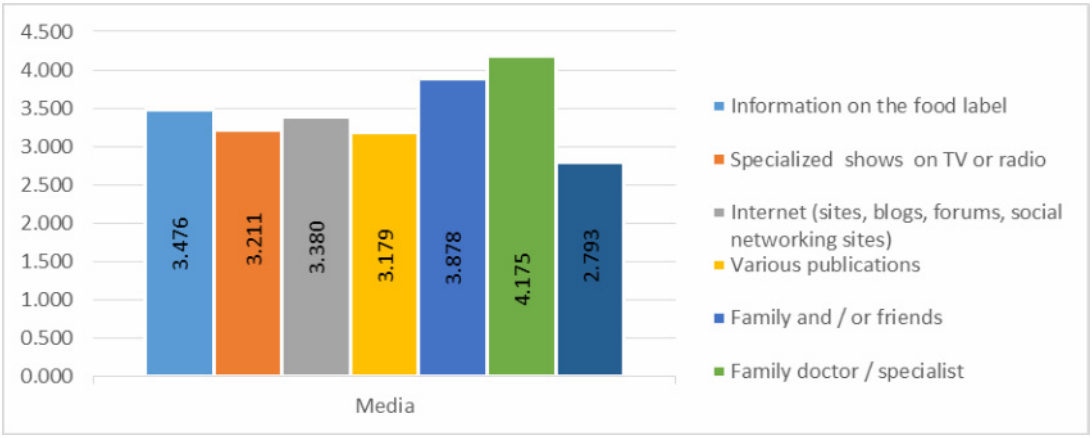

Fig. no. 3 Average of respondents confidence degree in various sources of information

On average, the importance given by respondents to food choice criteria is the following (see Figure 4): the packing - 3,519; brand - 4,022; taste and / or other organoleptic characteristics (appearance, shape, color, flavor, etc.) - 4,553; price - 4,036; intake of nutrients - 3,918; reduced content of substances with negative impact on health (salt / added sugar / saturated fats / cholesterol) - 3,846; low content of food additives - 3,892; origin of Romanian agriculture (in the case of agri-food raw materials) - 3,782; other criteria (listed by the respondents: calories, curiosity, history, 100% natural products, known, country of origin, shelf life) - 3,280.

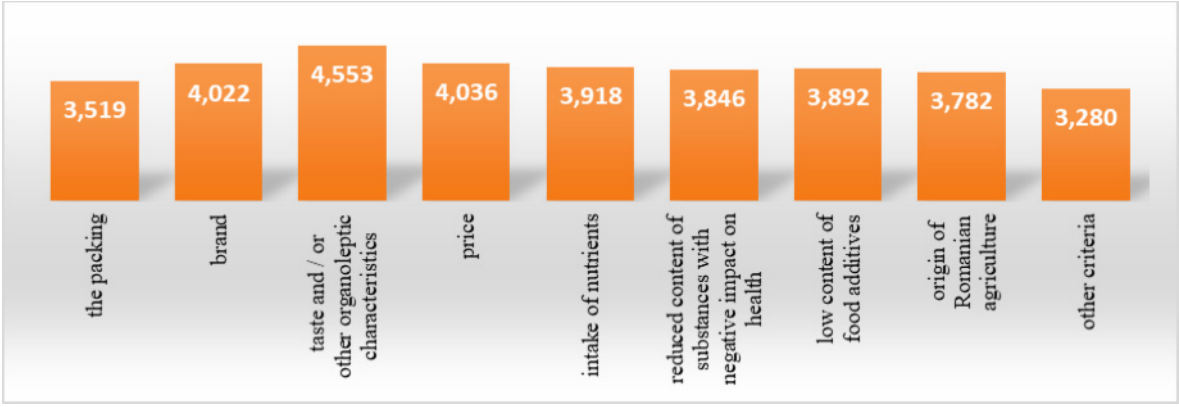

Fig. no. 4 Average of the importance given by respondents to food choice criteria

Another objective of the research was to *highlight the eating habits* (especially the unhealthy) *of the new generation of consumers*. Regarding this, a number of habits related to the diet of a regular week were listed, for which the respondents were asked to indicate the frequency. Analyzing the answers provided by the respondents, we highlight the fact that they show strong trends towards unbalanced food consumption, because only 6.6% of them follow the main meals of the day and only 0.7% consume at least one hot meal per day. It is also worrying that only 1.3% of respondents target the daily intake of a variety of foods to cover their nutritional needs, while 13.7% of them consume pre-cooked foods. It is also noted that only 2.8% of the respondents consume at least 1.8 liters of water per day, but also 6.8% of them use salt, while 6.5% regularly consume fried foods.
This section may be divided by subheadings. It should provide a concise and precise description of the experimental results, their interpretation as well as the experimental conclusions that can be drawn.

Conclusions

Apparently, to meet the current consumption needs of mankind, Earth does not reach us. However, as we do not yet have a second planet, and we want the human race to survive, we need to change our consumption habits as quickly as possible.
Many times, the discussion of sustainable development starts from the (slightly unrealistic) view of consumer sovereignty on the market, which often leads in the collective mind to the hope that industrial societies will make the transition to sustainable consumption if the majority of consumers prefer goods made under sustainable production conditions. It is forgotten, on this occasion, that sustainable consumption is often a "niche" in the sense that there is no chance for the broad mass of consumers to adopt sustainable consumption habits as long as they are oriented towards production unsustainable.
Considering food consumption and its associated habits, we can say that most specialists believe that sustainable development can only be imposed as a result of the joint effort of production and consumption in a market that does not act as a collective force against, but in favor of sustainability.
In this context, it is important to know the eating habits of the younger generation of consumers and how these habits are influenced by cognitive and emotional reactions.
Research results indicate that 65.5% of respondents show a willingness to have a healthy diet (49.4% say they are highly concerned, and 16.1% say they are very concerned). In this respect, 35.1% of the consumers belonging to the young generation in Romania associate the healthy diet with keeping the main meals of the day, while 27.1% of them consider that the consumption of various foods, covering the recommended daily intake of nutrients, is

the main criterion for ensuring a balanced diet. On the third place, with a proportion of 17.6% from them, are the consumers for whom a healthy diet supposes the consumption of at least one hot meal a day.

The main reasons why respondents say they can not provide a healthy diet are, in decreasing order, the following: lack of time (28.2%), high pollution and genetic modification of raw materials (25.2%) and the high food price of the healthy foods (14%).

Regarding the respondents'trust in different sources of information on healthy diet, on the first place is the family doctor or the specialist doctor with an average of answers of 4.17 (although the Romanian health system presents some dysfunctions), followed by the family or group of friends, with an average of 3.87 and the food label, with an average of 3.47. There is also a trend to increase respondents' confidence in online content about healthy eating, generated by their peers, with whom they interact in the virtual environment (blogs, forums, review sites, social sites, etc.), which ranks fourth with an average of 3.37.

Taste and other organoleptic properties are the main criteria of foods choice, with an average of 4.55, followed by price and brand, with an average of 4.03 and 4.02.

Finally, based on the results of our research, we can state that among the young generation of consumers in Romania there is a growing tendency toward unbalanced food behaviour, because: 21% of them consume only the foods they consider sensory atracttive, only 6,6% of them follow the main meals of the day, 13,7% usually eat precooked foods, 6,8% frequently use salt in food and only 1.3% try to eat a variety of foods to cover their recommended daily intake of nutrients.

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OBESITY AND OVERWEIGHT AS ECONOMIC THREATS

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Abstract
Marketing can be used by public and private organizations to alleviate obesity scourge in two main directions: identifying the triggers/generating factors and designing strategies to discourage the phenomenon. The study revealed that United Kingdom, Scandinavian countries and France as a newcomer, are the only countries in which the systematic healthy eating policies are implemented, beside the other information campaigns. The policy action of the Mediterranean countries, which is mostly limited to educational and informational measures, has a quite short history. This study aims to investigate the perceived necessity of nutritional education in schools.

Keywords: Obesity, overweight, eating habbits, nutritional education

JEL Classification
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Introduction

The future of humanity at individual and social level depends on a healthy population, and obesity (OB) was in 2012 one of the top three global social burdens generated by the human being, after smoking, armed violence, war, and terrorism (McKinsey Global Institute 2014). The worldwide prevalence of obesity nearly tripled between 1975 and 2016 (WHO).
Reilly et al., (2003) define obesity, as the excessive accumulation of fat, is not only a cosmetic or aesthetic problem that could result in body shape dissatisfaction, but it also has other serious possible clinical and public health consequences. Contrary to the obese, overweight (OW) patients could usually lose weight by themselves (without the help of clinical experts and medication) and could fight against this abnormality of nutritional status.
In 2016, WHO estimation was that more than 1.9 billion adults, (39% of men and 40% of women) aged 18 years and older, were overweight. Of these over 650 million adults were obese, about 13% of the world's adult population (11% of men and 15% of women).
According to McKinsey Global Institute (2014) 5% of the deaths worldwide were attributable to obesity. If the incidence continues at this rate, almost half of the world's adult population will be overweight or obese by 2030 (Kelly, et all, 2008).
At this moment, it is more than clear, that our society has lost the battle with obesity, and some new approach is needed.

As biology, states humans and other animals have similar patterns (physiologic and behavioral) for feeding, hunger and the dietary regulation of macronutrient intake (Ulijaszek, 2002; Berthoud, 2004).
At the same time, various animals (especially mammals) have the tendency to eat more than satisfying the pure physiologic needs, mainly in order to increase the body fat deposition for periods when the food is not available (e.g., winter season), but no different from the tendency to overeat due to food portion size, palatability, energy density. According to Ulijaszek (2002) human eating behavior differs from other mammalian species in the extent to which food availability is controlled, personal feeding constraints operate, and social and cultural norms of diet and feeding exist. Berthoud (2004) discuss about food intake as driven physiologically by innate and cognitive factors in relation to the food environment. Myers and Sclafani (2003) identify the major components of feed-forward mechanisms between the brain and gut that anticipate the nutritional needs of the body and de Castro and Stroebele (2002); Rolls, (2003); Ulijaszek, (2002) explain that mechanism as responding to the abundance of food cues.
It is a paradigm now that the external circumstances strongly influence the individual choices of lifestyle and diets. The conventional belief that the individual has the sole responsibility of choosing the lifestyle, physical activity and diet is, therefore, strongly contrasted.

Obesity –a marketing approach

Marketing can be used by public and private organizations to alleviate obesity scourge in two main directions: identifying the triggers/generating factors and designing strategies to discourage the phenomenon.
In 1999 Swinburn et al. define obesogenicity as ‘‘the sum of influences that the surroundings, opportunities, or conditions of life have on promoting obesity in individuals or populations’’.
The models for studying obesity prevalence include five components (1) thrifty genotypes; (2) obesogenic behavior; (3) obesogenic environments; (4) nutrition transition; and (5) obesogenic culture.
Authors find as useful for the marketing of a healthy life style (including here a healthy diet) the complex biocultural model of obesity proposed in 2007 by Ulijaszek (figure no. 1)

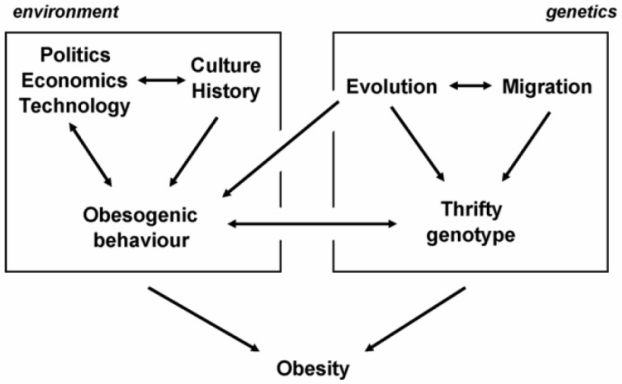

Fig. no.1 A biocultural model of obesity

Source: Ulijaszek, S. J. (2007). Frameworks of population obesity and the use of cultural consensus modeling in the study of environments contributing to obesity. Economics & Human Biology, 5(3), 443-457

Ulijaszek (2007) defines obesogenic environments as including "the production, distribution, availability and affordability of foods that may predispose to obesity" and divide the obesogenic environment according to size, in micro- and macro-environment and in types (physical, economic, political and sociocultural), in relation to food and physical activity.
Using this model, competent agencies authorized in each country can develop, with the help of the marketing instruments and techniques, useful programs in order to decrease obesogenic behavior using adequate public policies.

Qualitative marketing research
Provencher et al., (2008); Vollrath, Hampson & Jiuliusson (2012) studied various eating behaviors and discovered that people, including children, with high levels of awareness tend to have healthier eating behaviors. Stroebe, et al. (2008) demonstrate that conscious awareness plays an important role in the self-regulation of food temptations.
Nutrition contents are widely included in curricula in Europe at least, and most adolescents and school-aged children are aware about the importance of healthy eating habits, one can note from a global perspective that translating this knowledge into action mostly fails. Maintaining unhealthy eating patterns, despite the fact that the adolescents are being aware of the risks raised by the inappropriate eating, suggests that they are facing various obstacles in self-regulating their eating behavior (Gaspar, 2014). In this respect, children and adolescents could benefit from school-based interventions, either in rural or urban settings, in shaping self-regulatory behaviors when it comes to buying and eating healthily (Anderson et al., 2007). Social influence and self-regulation cognitions must also be addressed by these interventions (Kalavana, Maes & De Gucht, 2010).
Howard and Prakash (2011) found evidence that pupils participating in the state-funded food programs consume more fruit, vegetables and natural juices than those eating meals in the family. The kids benefit from a healthy food program that is maintained over a longer period of time than the schooling period
Concluding, we agree to Chirita-Emandi et al. (2016) opinion "there is an urgent need for early interventions in pre-adolescent years, in both genders, in Romanian children".

Research methodology
In order to achieve the study, one has used the qualitative research method. There has been a number of qualitative interviews with 27 mothers from medium/small cities of Romania (cities with under 150,000 inhabitants). The chosen cities were: Buzau (2), Medgidia (1), Mangalia (1), Targoviste (1), Pitesti (2), Calarasi (1), Slatina (1), Drobeta Turnu (1), Arad (1), Deva (1), Alba (2), Zalau (1), Satu Mare (1), Bistrita (1), Miercurea Ciuc (1), Focsani (1), Vaslui (2), Roman (1), Tecuci (1), Botosani (2), Suceava (1), Barlad (1). Selected income intervals were between 1250-1800 lei per capita, average education level and above average, 9 mothers for each significant historic zone in Romania.
We have chosen mothers for interviews because living in the same household, mothers usually are the ones preparing meals for the whole family, mothers are often in charge with the food supply, and the strongest correlation can be found between mother's eating habits and the ones of the child. Mothers are more child oriented and are in charge with the health and the nutrition of the children (Popescu, 2009).
The medium/small urban environment was selected because the exposure of the parents and children to marketing practices and media influence are significantly higher than in rural areas, so their reactions and parents' perceptions related to this subject are visible. In addition, the income level and the parents' education is higher than in urban than in rural areas (NIS, 2018) which has a direct connection with the level at which the parents and children may be accessed through various marketing practices and by default on the level in

which those can be influenced by them. At the same time, in a small/medium town in Romania, the cultural patterns (including food culture) are well preserved.
Using the snowball method, courtesy of college teachers in pre-university education (grades 0-8), we identified overweight/obese children in the age group of 6-14 years. My colleagues facilitated us the access to the OB/OW children's mothers, whom we asked for an interview on nutritional habits. We submitted requests to 150 parents, accepted 86, and we selected those who met geographic and age criteria, 3 children in each age.
The interviews were conducted in locations chosen by the parents, in person, or online, at different hours and different days, depending on their schedule, during Nov 2018-february 2019. Each interview lasted 45-60 minutes, each depending on the time available and the mother's level of cooperation
This study aims to investigate the perceived necessity of nutritional education in schools. The main goals of the present study were:

- to identify the children eating habits;
- to identify family eating habits;
- to identify the level of awareness about nutrition of children;
- to identify those persons perceived as nutritional experts;
- to identify the marketing elements considered to be appropriate in relation to educational nutrition in Romania;
- to investigate the obesogenic environment.

Secondly, the research aimed to identify:

- the perception of nutritional marketing activities in general;
- the types of arguments/media channels able to influence the children to form opinions on healthy eating;
- the types of arguments/media channels able to influence the mothers to form opinions on healthy eating;
- the distinction between the children's level of influence over the food consumption at different age intervals;
- the level of trust in the Ministry of Health and Ministry of Education, particularly related to the nutritional tutorials/programs for children.

The topic of the interviews was decided by the enumerated aims of the study. They have shaped the questions and the order they were addressed and have guided the final analysis indicating the adequate direction of investigation.

Marketing research context. Prevalence of OB and OW children

WHO (2016) estimated 41 million children under the age of 5 years were OW or OB. Once considered a high-income country problem, overweight and obesity are now on the rise in low- and middle-income countries, particularly in urban settings. In Africa, the number of overweight children under 5 has increased by nearly 50 per cent since 2000. Nearly half of the children under 5 who were overweight or obese in 2016 lived in Asia. Over 340 million children and adolescents aged 5-19 were overweight or obese in 2016. The prevalence of overweight and obesity among children and adolescents aged 5-19 has risen dramatically from just 4% in 1975 to just over 18% (similarly among both boys and girls) in 2016. In 1975 just under 1% of children and adolescents aged 5-19 were obese, in 2016 more than 124 million children and adolescents (6% of girls and 8% of boys).
At the moment, overweight and obesity are linked to more deaths worldwide than underweight.
Many European studies were conducted in the last 10 years and all found the prevalence of overweight children similar in those countries in the Eastern Europe, studied region, whose societies are similar in terms of economic, nutritional or health indicators level. Bodszar and Zsakai A (2014) revealed the prevalence of overweight (including obese) children was 12–

14% in the group of Belarus, Romania, Bulgaria, Bosnia and Herzegovina; 15–17% in the group of Lithuania, Hungary, Latvia, Croatia, Poland, Russian Federation; 17–23% in the group of Slovakia and Czech Republic; 23–24% in Slovenia (which was a bit distinct from all of these groups, not only by considering the prevalence of childhood overweight, but also by regarding the economic, health and nutritional factors);and 24–28% in Turkey.
Chirita-Emandi et al. (2016) found the prevalence of overweight and obese children comparable at levels with those from other European countries. That puts Romania on the map of the countries in which childhood obesity is at epidemic levels.
According to WHO criteria almost one in four children in Romania was overweight, or obese while the prevalence of underweight children was low (Chirita-Emandi et al. 2016).
Brug et al. (2012) found in Slovenia, Spain, Italy, Greece, or Hungary a higher prevalence of overweight in boys. According to Chirita-Emandi et al. (2016) also in Romania, boys were 1.4 times more likely to have excess weight when compared to girls.
A study within 9 countries, The Netherlands, United Kingdom, Poland, Portugal,Denmark, Romania, Germany, Finland and Belgium, (Gaspar, 2014) revealed that: despite not being statistically significant, the association between rural/urban settings and eating awareness/care is negative in all countries except in Portugal, Romania and Poland (the three less-wealthy countries). The hypothesis linked to this finding suggest, some complex cultural issues like: less unhealthy food temptations in rural poorer countries; higher levels of unhealthy food temptations in urban richer countries; parental monitoring and availability to cook at home, all to be tested later.
In Romania, excess weight was found prevalent in the urban than in the rural environment (Chirita-Emandi et al., 2016). Farajian et al. (2011) and Johnson and Johnson (2015) suggest that this type of variation (urban/rural) may be attributed to differences related to education, physical activity, sedentary behavior, economical family status, or even self-perception.
Romania has incidence of 34% of OB children in 6- to 12-year-olds (prepubertal and in early puberty) and 15% OB children in 15- to 19-year-olds (late puberty and postpubertal youths) (Chirita-Emandi et all 2016).

Main reason for extra food intake at children

According to many studies the first reason is over-nutrition (a diet too rich in calories), than the permanent availability of food, the nice marketing exposure of food, especially the snacks and sweets and a lack of physical exercise at the same time (Craciun and Baban 2008; Petrovici and Ritson, 2000; Pelin, Georgescu, et Ştefanescu, 2014).
Other factors mentioned are from behavioral and sociological area. Many studies have observed and identified as important forces for OB and OW problems: parental intakes and negative statements about food, family support, parenting practice, and minutes spent eating at home, food presentation and parental preparation of quick and easy food, marital status of parents and number of meals eaten out. (Ulijaszek, 2007)

Consequences of obesity over the children

The obese or overweight children are prone to encounter and carry the consequences of psychological and psychiatric disorders in childhood, adolescence and even in the adulthood (Rankin et al., 2006). Compared with psychiatric consequences, the psychological effects are less clear. Victimization, teasing, stigmatization, altered cognitive performance, low self-esteem are only some of them. Even the quality of life of the obese and overweight children is decreased due to their altered physical and mental health, leading from here to lower school performance (Trandafir et al., 2015). Current research in the field (Pulgaron 2013, Cortese et al. 2008, Nigg et al., 2016, Rancourt and Cullough, 2015, Kalarchian and Marcus 2012, Harriger and Thompson 2012, Kalra et al., 2012, Wardle et al., 2006) has conducted to the fact that the obese and overweight children are less prone to experience

psychological issues like depression, emotional or behavioral disorders while obese and overweight adolescents are more likely to encounter more psychological disorders than the healthy weight correspondents, and all this tends to be extended into adult life (van Wijnen et al., 2010).

A considerable amount of research, advocating that the children attending schools where the curriculum covers and emphasizes elements of nutrition education are better than the children from schools where nutrition is not taught, confirms the prior conclusion (Shannon and Chen, 1988; Keirle and Thomas, 2000; Kandiah and Jones, 2002; Roseman et al., 2011). The significance of the nutrition education in schools is strengthened by the results of Gabroschi et. Campos (2014). More than this, the study of Gabroschi et Campos (2014) has revealed that the children who do not benefit from the nutrition education in schools are more influenced by mass-media in what is concerning the social representation (SR) of food.

In order to have tangible results in obesity prevention, which is a complex affair, the Lawton (2012) conclusions suggest that the best approach is a multidirectional one: the increased physical activity, improved food quality, family and community support.

The local study of Chirita-Emandi et. all (2016) reinforces too the need for a comprehensive approach in the fight against childhood OB/OW and for the implementation of public health policies for the prevention of the current Romanian children epidemic obesity.

In Romania, Order 1563 of 2008 September 12 stipulates that the children with neuro-psychomotor deficiencies which are enrolled in special education centers benefit from a special nutrition program. This consists of two meals a day, supplemented by a snack, following the breakfast-snack-lunch sequence. The children coming from disadvantaged families could benefit themselves from this program in normal schools, but this aspect is still under discussion. The results of such programs are controversial, there are no solid proofs that the obesity among children is reduced, the school dropout rate is mitigated, or they contribute to creating healthy nutritional habits. European Union also started different initiatives in this respect; one of them is providing fruit and milk in European schools.

Discussions revealed that mothers are not aware of healthy eating habits. As it can be seen from the two comparative figures, the food structure of the Romanian children OB / OW is inadequate to the chart proposed by the Spanish Society of Community Nutrition. The aspects such as physical exercise, general emotional state, healthy cooking principles and proper hydration have even not been discussed. Remembered in the probing, these were mentioned only as concrete ways to lose weight.

The structure of the food pyramid in OB/OW children in Romania is based on bakery products, dairy products and white meat. An inappropriate amount of sweets (packed or homemade) are consumed too.

Paradoxically, eating fast food is rather low, the main reason we suspect, it is a modest income. Also fruit and fresh vegetables consumption is low, the main cause being the cultural one. Fish and seafood consumption is also low, especially due to inaccessible prices for an average income.

Overall, whole grain intake, sweets and salt consumption are problematic.

Conclusions

A need for strong social campaigns

A number of aspects found in the analysis of the data provided by this study are validated through international studies. Our main conclusion is that Romania needs responsible marketing campaigns in order to develop nutrition consciousness is found in (Grabovschi and Campos, 2014). Moreover, Grabovschi and Campos (2014) suggest that the policy makers should be awaken in this direction, to develop and implement specific policies, “Romania would also benefit from a social campaign encouraging policy makers to improve

public policies on nutrition. Such a campaign would target widespread change in the dissemination of ideas about food and nutrition, by shifting the focus of public interest from obsession with unhealthy food to better understanding of healthy eating"

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AN ANALYSIS OF OPERATIONAL RISK MANAGEMENT GUIDELINES IN VARIOUS BANKING SYSTEMS FROM ASIA

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Abstract

Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk, but excludes strategic and reputational risk. Compared to credit and market risk, this definition explicitly takes into account external as well as internal events. Therefore, the definition of operational risk could be seen as broader and more complex by comparison with other type of risks. Operational risk management (ORM) is particularly important in the banking system, since operational losses are likely to have significant impact not only on the financial condition of the banks, but also on their reputation. The authors posit that the regulatory openness regarding ORM results in legal texts that are highly influenced by the culture of the country where the central bank which issues guidelines on ORM resides. The research results are useful to the local and global regulators of the banking system in fine-tuning their decisions in different cultural environments.

Keywords

culture; banks; Asia; operational risk; Basel

JEL Classification

M42, A14

Introduction

The Basel II Capital Accord defines operational risk as 'the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk, but excludes strategic and reputational risk'. Compared to credit and market risk, this definition explicitly takes into account external as well as internal events. Therefore, the definition of operational risk could be seen as broader and more complex by comparison with other type of risks (Wahlström, 2006). Nevertheless, the abstract nature of this definition makes it advantageous, because it captures as many events as possible, but at the same time, makes it imprecise, thus having the potential of creating problems in the practice.

Given their complex and pervasive nature, as well as their potential reputational impact, operational risks have recently attracted increased attention from academics, professionals, and regulators. However, since the history of operational risk is still young when compared to the ones of credit and market risk, data availability on operational risk is limited. Consequently, research on operational risk is still hindered by the lack of data and, generally, very scarce. Our study's objective was to investigate whether there is a

correlation between the cultural traits of people in a particular country and the attributes of the corpus published by the central bank of the respective country. The remainder of the paper is structured as follows: first, a thorough literature review is carried out by the authors; second, the study's objective and the research design are presented; last but not least, the researchers interpret the results and offer the conclusions of the study.

Literature Review

Firstly, the Romanian literature regarding operational risk management (ORM, hereafter) comprises some theoretical studies (Anghelache et al., 2016; Stanciu, 2010). Anghelache et al. (2016) offer a mere definition of operational risks, describe the steps for quantifying operational risk and give an overview on qualitative approaches for operational risk measurement such as setting up a sound system of internal control. Similarly, Stanciu (2010) explores the approaches and the changes needed in risk management, in general and in operational risk management, in particular. The author discusses in detail the operational risk management process; the operational risk definition and content; the operational risk regulatory framework; and the solutions for operational risk management.

Another category of studies (e.g. Dănescu and Muntean, 2008; Socol et al., 2006) are focused on the procedural aspects of operational risk management. Dănescu and Muntean (2008) provide solutions for assisting the organization in an effective risk management and control over operational risks, taking into consideration some particularities of the Romanian banking system. More precisely, the authors offer a practical procedural guidance on how Risk Based Internal Audit (RBIA) could be developed for supporting organizations in operational risk management. On the contrary, Socol et al. (2006) focus strictly on the process of managing operational risks and offers concrete guidance regarding the procedures that could be implemented by banks in operational risk identification, valuation, monitoring, and management.

The Romanian academic literature on operational risks also includes empirical papers. Dima (2009) assumes that operational risk is mainly driven by transactions and by means of regression analysis, proves that the probability of operational losses increases as the volume and complexity of transactions increase. A different empirical approach, namely a case-study approach, is taken by Matiș (2007), who focuses on the process of operational risk management in a selected commercial bank from Romania, namely Banca Comercială Română (BCR). The author describes in detail each of the steps that are part of the process of operational risk management at that particular bank: risk identification, risk assessment, risk monitoring, and risk management.

The literature available at international level is also limited compared to the high significance of the research area. At global level, the major problems addressed by the literature that deals specifically with operational risk management (ORM) in the banking system relate to (1) the appropriateness of different measurement models for the operational risk capital charge; (2) the determinants of ORM disclosure; (3) the quality and quantity of ORM disclosure. Our research contributes to the growing body of literature on operational risk.

Regarding the characteristics of legal text, Contreras (2013) notes that legal rules are affected by the vagueness of natural language. According to Hospers (1976), vagueness occurs when there is no defined set of conditions governing the use of the word. The word lacks precision because there is no set of conditions that enable us to say exactly when the word is to be used. There is no set of conditions each of which is necessary and that together are sufficient for the use of the word in the world.

According to Cao (2007), an expression is vague if it admits of borderline cases in actual use. Saying that a concept is vague is equivalent to saying that it is not clear whether the concept applies or not. For example, the words 'tall', 'bald' and 'old', and concept words or

cluster concepts such as 'just', 'legitimate' and 'reasonable' are vague. Another example is 'serious'. For instance, for the provision that 'serious consequence will result' if United Nations resolutions are not complied with, what does 'serious' entail: economic sanctions, use of force, or any other consequences? One type of vagueness is intensional vagueness, with words such as 'religion', 'vehicle', and 'fruit' (see Alston, 1964; Moore, 1981, 1985).
International treaties and other similar legal instruments are texts that resulted from negotiation to represent the diverse interests of the participating member States parties. In international diplomacy, negotiators frequently choose a compromise that glosses over their differences with vague, obscure or ambiguous wording, thus clarity is sacrificed for the sake of obtaining consensus in treaties and conventions (Sarcevic, 1997:204; Tabory, 1980).
Our contribution to the body of literature is the fact that we considered the role of culture in impacting the level of disclosure on operational risks in differing banking set-ups. Culture has been defined as "the collective programming of the mind which distinguishes the members of one human group from another" (Hofstede, 1980). The role of culture in influencing and explaining behaviour in social systems has been acknowledged and explored in various fields, especially in anthropology, sociology and psychology. A framework for the comparison of different cultures was developed by Geert Hofstede and his research team.
The Hofstede cultural model originally consisted of the following four dimensions:

- ***Individualism versus Collectivism***: Individualism refers to a preference for a loosely knit social framework in which individuals are expected to take care of themselves and their immediate families only. On the contrary, collectivism shows the preference for a tightly knit social framework where individuals belong to 'in-groups' that take care of them in exchange for unquestioning loyalty. This dimension relates to whether people's self-image is defined in terms of "I" or "We". The extent to which people feel independent reflects individualism, whereas the extent to which they feel interdependent as members of larger wholes reflects collectivism.
- ***Large versus Small Power Distance***: Power distance is defined as the extent to which the members of society expect and accept the unequal distribution of power in institutions and organizations. People in Large Power Distance societies accept hierarchical order in which everybody has a place which needs no further justification. People in Small Power Distance societies struggle for power equalization and require justification for power inequalities.
- ***Strong versus Weak Uncertainty Avoidance:*** Uncertainty avoidance refers to the attitude of the members of a certain culture towards anxiety and ambiguity. Strong Uncertainty Avoidance societies maintain rigid codes of belief and behavior and are intolerant towards deviant persons and ideas. Weak Uncertainty Avoidance societies maintain a more relaxed atmosphere in which practice counts more than principles and deviance is more easily tolerated. The fundamental issue addressed by this dimension is whether society tries to control the future or simply lets it happen.
- ***Masculinity versus Femininity:*** Masculinity refers to the preference of society for heroism, assertiveness, achievement, and material success. On the contrary, Femininity stands for a preference for relationships, modesty, caring for the weak, and the quality of life. This dimension captures what motivates people, wanting to be the best (Masculine) or liking what you do (Feminine). In a masculine society, social gender roles are clearly distinct: men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life. On the contrary, in a feminine society, social gender roles overlap, whereas both men and women are expected to be modest, tender, and concerned with the quality of life.

Gray (1988) expands Hofstede's model at the level of the accounting subculture and identifies four values, which he correlates with Hofstede's cultural dimensions: Professionalism versus Statutory Control, Uniformity versus Flexibility, Conservatism versus Optimism, and Secrecy versus Transparency. Two of these value dimensions are particularly relevant in the context of the present research, namely secrecy, and professionalism.

Research design

Authors have analyzed a corpus of 50,000 words which includes the guidelines on operational risk management published in English by the central banks of China, Hong Kong, India, Indonesia, Japan, Singapore, and South Korea. The study's objective was to investigate whether there is a correlation between the cultural traits of people in a particular country and the attributes of the corpus published by the central bank of the respective country. The cultural traits taken into consideration as independent variable are the above-mentioned Hofstede's cultural dimensions further developed by Gray (1988). The authors hypothesized that the attributes of the corpus influenced by culture are clearness and prescriptiveness.

Results

We have extracted the cultural traits in each of the selected countries from South-Eastern Asia: China, Hong Kong, India, Indonesia, Japan, Singapore, and South Korea according to the Hofstede's model, as well as the values of the relevant cultural dimensions of Gray's model, namely "Secrecy" and "Professionalism". The highest level of secrecy is that of Korea, while the country that is inclined the most towards transparency is Japan. Regarding professionalism, the people of Singapore prefer statutory control, while Korea scores highest in terms of professionalism, meaning that the professional judgment weighs more than regulations.

Table no 1 Cultural traits of selected countries from Asia

	Index secrecy	Index professionalism	Power distance	Individualism	Masculinity	Uncertainty Avoidance
China	24.00	90.00	100.00	17.65	48.21	26.19
Hong Kong	15.00	72.00	53.85	32.35	32.14	25.00
India	13.00	69.00	88.46	100.00	30.36	38.10
Indonesia	66.00	112.00	92.31	0.00	12.50	47.62
Japan	5.00	100.00	0.00	94.12	100.00	100.00
Korea	88.00	127.00	23.08	11.76	0.00	91.67
Singapore	14.00	62.00	76.92	17.65	16.07	0.00
Mean	32.14	90.29	62.09	39.08	34.18	46.94
Std. dev.	31.78	24.16	38.10	40.78	32.95	36.54
Min	5.00	62.00	0.00	0.00	0.00	0.00
Max	88.00	127.00	100.00	100.00	100.00	100.00

Source: authors' own design based on Hofstede's index values

The longest guidelines are the ones issued by the national Bank in Japan (14,124 words), while the shortest ones are the ones provided to the banks in China (2,031 words). The data regarding the clarity and prescriptiveness of text was gathered both manually and through specialized content analysis software. It results that the most prescriptive text is that of Korea, while the least prescriptive ORM guidelines are the ones of Japan. Regarding clarity, the foggiest guidelines are those of the Chinese national bank, while the highest clearness is achieved by Korea.
By applying different correlation coefficients such as the Kendall coefficient, the following has been found: (1) the higher the masculinity, the less clear is the text; (2) the higher the masculinity, the less prescriptive is the text.

Conclusions

Operational risk disclosure is an important part of the transparency debates within the banking industry. Most operational losses attract the attention of the public, although financial losses may be relatively small. Sometimes, the reputational impact is much more significant than the direct effect from the loss itself (Sturm, 2013; Țurlea & Mocanu, 2016). The study's objective was to investigate whether there is a correlation between the cultural traits of people in a particular country and the attributes of the corpus published by the central bank of the respective country. The authors hypothesized that the attributes of the corpus influenced by culture are clearness and prescriptiveness.
Authors have analyzed a corpus of 50,000 words which includes the guidelines on operational risk management published in English by the central banks of China, Hong Kong, India, Indonesia, Japan, Singapore, and South Korea. The longest guidelines are the ones issued by the national Bank in Japan (14,124 words), while the shortest ones are the ones provided to the banks in China (2,031 words).
Results show that the highest level of secrecy is that of Korea, while the country that is inclined the most towards transparency is Japan. Regarding professionalism, the people of Singapore prefer statutory control, while Korea scores highest in terms of professionalism, meaning that the professional judgment weighs more than regulations.
Our research is relevant and significant, because based on the ORM guidelines published by each central bank the individual banks make decisions regarding the implementation of the operational risk management in their institution, as well as regarding the aspects to be disclosed to their stakeholders on the topic. This makes the ORM guidelines an important regulatory instrument in the banking industry and highlights the relevance of the described study. Last but not least, the research results are useful to the local and global regulators of the banking system in fine-tuning their decisions in different cultural environments.

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OPPORTUNITIES FOR FEMININE LEADERSHIP IN THE EUROPEAN UNION

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Abstract
Leadership is an addressed topic both in business and in the academic field, and that is why its efficiency in companies should be understood. For leadership to be effective there must be no gender discrimination; men are no better leaders than women. To be a leader means being creative, courageous, sharing love and compassion for team members, while developing self-management capacity without giving in to various pressures.
This paper analyzes the effects of women's participation in decision-making on top management positions, in the sphere of social partners (trade unions and employers' organizations), in business and political field, on their participation on the labor market and social protection as a means of reducing social exclusion and as a necessity of mitigating gender gaps.

Keywords
Leadership, female leadership, gender differences, regression model, Principal Component Analysis.

JEL Classification
C50, J16, J71, M54.

Introduction

Along time, questions about gender differences in terms of leadership have received two completely different answers: one that promotes the similarity of leadership styles, and the second one that supports the existence of fundamental differences, the latter having the support of specialists.
While leadership is learned, skills and knowledge can be influenced by attributes or traits such as beliefs, values, ethics and character. Knowledge and skills contribute directly to the leadership process, while other attributes give the leader certain characteristics that make him unique. (Sharma M. K., Shilpa J., 2013)
Women leaders can achieve remarkable results. A survey of 7280 leaders led by Zenger and Folkman shows that women excel in most leadership skills. Respondents were asked to evaluate men and women on the basis of 16 competencies criteria, which resulted in women being more skilled in taking the initiative, developing at a personal level, superior in terms of integrity and honesty and more result-oriented (Zenger and Folkman, 2012)

The state of knowledge

According to Kathleen L. McGinn and Hannah Riley Bowles (2003), women do not have any difficulty in adopting appropriate leadership styles; the problem lies in claiming authority. Moreover, a Credit Suisse research conducted in 2012 revealed those companies that have at least one woman on the board of directors have seen a higher return on investment compared to those that have not hired women for such positions.

Other research in the field shows that companies having more women in leadership position have diminished the pay gap between men and women with similar work experience and get to work in that company in similar circumstances (Tate, G., Yang, L., 2015).

Nielsen and Huse (2010) state women and men are not different in their ability to perform operational tasks but rather bring a different perspective on strategic decision making through increased sensitivity to others.

Women react in a more emotional manner to the environment and are generally more perceptible to it. Consequently, this means that women will have even more prejudices (Ladenburg & Olsen, 2010). The fact that women are more likely to be affected by context is well explained by neuroscience. Men and women have shown they are different, both structural and functional, in the brain. Men are favored by the left brain hemisphere (responsible for logic, details) and women are favored by the right hemisphere (responsible for holistic, intuitive and abstract, but these two are very well interconnected.

However, starting with 2017, according to the McKinsey report, only about 5% of senior executives, leaders of large companies, are women, and this is due to the existence of a barrier that prevents women from advancing (Gray, L., 2018). These barriers may be objective when they come from the outside (organizational or political environment) and subjective , when they have as starting point the limitations imposed by women themselves, by the lack of confidence in their own forces and perseverance in the struggle for rising. (On. A., 2010). Female leaders are likely to be seen negatively when adopting the characteristics of male leadership. When women keep their femininity, but fulfill a male role, they are perceived as being too emotional and lacking in assertiveness. This means the leading women face a compromise between being pleasant and competent.

Another challenge is that of career development, which will be easier for men. Women are more likely to have nonlinear careers, in order to have more time to spend with their family. That is why they avoid working places with travel responsibilities outside the city.

Researchers explored the essential elements of leadership but did not identify gender differences in the leadership effectiveness (Hyde, J., 2014).

Research on private firms shows that gender-based managerial diversity is linked to their positive results. (Menguc,B., Auh, S., 2006). Moreover, diversity is significantly correlated with improving corporate social responsibility (Boulouta, I., 2013).

Moreover, diversity is significantly correlated with improving corporate social responsibility.4 Another group of researchers has found that gender-balanced leadership teams of component members are less likely to create problems associated with "group thinking"(Opstrup, N., Villadsen, A. R., 2015). For workers, women's leadership can also provide another benefit. A study of businesses that were operating during the Great Recession showed that boss- women did not fire as many employees as men. The difference was significant, with the reduction in the workforce being twice as common in male-owned firms (14% vs. 6%), and thus a greater number of workers were affected (Matsa, D. A., Miller, A. R., 2014). Staff retention can reduce short-term profit, but at the same time it can support morality and reduce potential future costs of employment and training.

Research methodology

Women's involvement in the management and decision-making process was analyzed on the basis of a set of 46 variables, which belong to the following blocks of factors: the

demographic context, the educational context, the labor market context, the context of social exclusion, the macroeconomic (output) context.
The values of female leadership variables have been collected from the Gender Statistics Database (Women and Men in Decision Making) developed by the European Institute for Gender Equality and the contextual demographic, educational, labor market, social exclusion and macroeconomic outcomes variables were provided by EUROSTAT database. The data characterizes 30 European countries (inside and outside the EU), and they are related to the years 2016 and 2017. The data process was performed with the IBM SPSS Statistics Ver. 20.
To measure the level of women's involvement in the high-level decision-making process, the following variables were selected, in order to illustrate the different areas of women's leadership: the business environment (Positions held by women in senior management positions – as board members, Women in senior management positions-executives), administration, politics and justice (Women in national parliaments -members, Women in local / municipal councils: mayors or other leaders and members, Women in Supreme Courts), social (Women as members of the highest decision-making body in employees' organizations, Women in Employers' Organizations). After analyzing the correlation matrix, the contextual variables that showed significant correlations of intensity above average with the variables in the field of the female leadership were retained. By applying the Principal Component Analysis, the size of the dataset has been reduced, while retaining as much as possible the variation of the original data in a small number of components.
The variables selected within the two components identified, following the Principal Component Analysis are used in the regression analysis with two main objectives:
- to quantify the relationship between the size of the female leadership phenomenon, the degree of women's involvement in the labor market and the social protection expenditures;
- to quantify the relationship between women's participation in decision-making within the social partners (employers, trade unions) and their participation in the labor market.
The two objectives are achieved by transposing the relationships described in two multiple regression models.
Model 1 predicts changes in the participation rate of women on the labor market under the influence of female leadership in the social partners' plan. Model 2 analyzes the behavior of social protection spending in terms of female leadership in the political and business sphere, as well as women's participation in the labor market. The variables included in the two models are described in the following table (Table 1).

Table no. 1 The variables included in the regression models

Model	Variable name	Notation of the variable	Type of variable
1	Employment rate – women (%) 2017	*Women_employment_rate*	Dependent variable
	Women share in employees' organizations (%) 2016	*Women_employees_org*	Independent variable
	Women share in employers' organizations (%) 2016	*Women_employers_org*	Independent variable
2	Expenditure on social protection (% of GDP) 2016	*Exp_social_protection*	Dependent variable
	Positions held by women in senior management positions (board members) 2016	*Women_board_members*	Independent variable
	Women in National Parliaments (members, %) 2016	*Women_Parliament*	Independent variable
	Employment rate - Women (%) 2016	*Women_employment_rate*	Independent variable

Source: authors' results, in SPSS 20.0 program , based on data provided by European Institute for Gender Equality, 2016. Gender Statistics Database, Women and Men in Decision Making. [online] Available at: <https://eige.europa.eu/gender-statistics/dgs/browse/wmidm>; EUROSTAT, 2017. Database [online] Available at: <https://ec.europa.eu/eurostat/data/database>

For both models, the following hypotheses were tested: the hypothesis of the linear functional form of the model, the hypothesis regarding the normality of random errors, the hypothesis of zero average error, the hypothesis of homoscedasticity of the random errors, the hypothesis of the non-correlation of the explanatory variables with the random errors, the hypothesis of the non-autocorrelation of the errors, the multicoliniarity hypothesis of explanatory variables. The hypotheses were validated for both models.
On the basis of the results obtained from the application of the two regression models, the level of employment among women and the share of social protection expenditures was predicted, depending on the degree of representation of women in different decision-making bodies in the social, political and business environment.

Results and discussions
The Principal Component Analysis method was used to reduce the initial set of factors to a smaller number of contextual variables that would retain a higher proportion of the variability in the original set of data, so as to explain to a greater extent the variation of the variables describing the involvement of women in the leadership process. The Kaiser-Meyer-Olkin Indicator has a value that is greater than 0.6, indicating the appropriateness of applying the method (KMO = 0.689).The Eigenvalues analysis indicates the opportunity to extract two main components, which, cumulatively, account for over 80% of the variation of the initial set of data. Thus, the first component explains 57.21% of the initial data variation, and the second component explains 22.875%. The Communalities Matrix shows the extent to which the main components of the excerpts explain the variability of the observed variables, the weighting being between 60.9% (for the variable: Women share in employers' organizations) and 93.2% (for the Female employment rate variable in 2016). (Table 2).

Table no. 2 Total Variance Explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,005	57,210	57,210	4,005	57,210	57,210	2,828	40,405	40,405
2	1,601	22,875	80,084	1,601	22,875	80,084	2,778	39,680	80,084
3	,510	7,290	87,374						
4	,429	6,122	93,496						
5	,268	3,827	97,323						
6	,185	2,641	99,965						
7	,002	,035	100,000						

Extraction Method: Principal Component Analysis.

Source: authors' results, in SPSS 20.0 program , based on data provided by European Institute for Gender Equality, 2016. Gender Statistics Database, Women and Men in Decision Making. [online] Available at: <https://eige.europa.eu/gender-statistics/dgs/browse/wmidm>; EUROSTAT, 2017. Database [online] Available at: <https://ec.europa.eu/eurostat/data/database>

Following the application of the Factor Rotation Procedure, the following two components were obtained: Component 1, consisting of the following variables: Women share in board members, women in the national parliaments, Women in employers' organization and

Expenditure on social protection; Component 2, consisting of the variables: Women in employees' organizations, and Female employment rate in 2016 and 2017 (Figure 1 and 2).

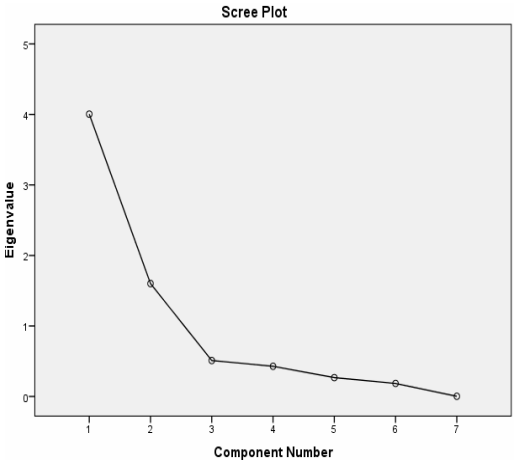

Fig. no. 1 Scree Plot

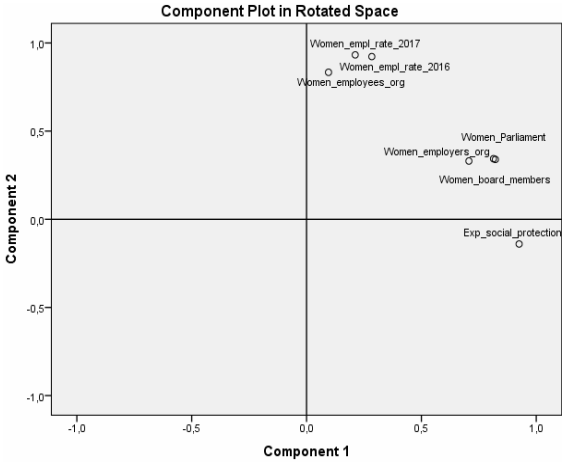

Fig. no. 2 Component Plot in Rotated Space

Source: authors' results, in SPSS 20.0 program , based on data provided by European Institute for Gender Equality, 2016. Gender Statistics Database, Women and Men in Decision Making. [online] Available at: <https://eige.europa.eu/gender-statistics/dgs/browse/wmidm>; EUROSTAT, 2017. Database [online] Available at: <https://ec.europa.eu/eurostat/data/database>

The first model expresses the dependence of the employment rate among women on the share of women in management positions within the social partners (trade unions and employers' organizations) on the basis of the following relationship:

$$Women_employment_rate_(t) = 48{,}126 + 0{,}425 \cdot Women_\ employees_org\ (t\text{-}1) + 0{,}325 \cdot Women_in_employers_org(t\text{-}1) \quad (1)$$

The model explains 55.9% of the female employment rate variation, with a standard error of relatively low estimation.The relation between the female employment rate, the share of women in senior management positions in trade unions and the share of women in decision-making positions in employers' organizations is strong and statistically significant (correlation ratio of 0.748). The model parameters are statistically significant and the two explanatory variables exert a significant direct influence on the female employment rate variation (for a probability of over 95%). Thus, with a 1% increase in the proportion of female members of the highest decision-making body in trade unions this year, we expect an average increase of 0.425% in the employment rate among women next year (with a minimum of 0.211% and a maximum of 0.64%), assuming that the share of women with decision-making power among employers' organizations does not change. At the same time, the 1% increase in the weight of women's top decision-making bodies in employers' organizations this year leads to an average expected 0.325% increase in women's employment rate next year (minimum 0.066% and maximum 0.584%), assuming that the share of women with decision-making power among trade unions does not change. (Table 3).

Table no. 3 Regression Model 1-Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,748[a]	,559	,526	6,29245	1,829

a. Predictors: (Constant), Women_employers_org, Women_employees_org

b. Dependent Variable: Women_employment_rate

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	48,126	3,427		14,044	,000	41,095	55,158		
	Women_employees_org	,425	,105	,553	4,071	,000	,211	,640	,885	1,130
	Women_employers_org	,325	,126	,350	2,576	,016	,066	,584	,885	1,130

a. Dependent Variable: Women_employment_rate

Source: authors' results, in SPSS 20.0 program , based on data provided by European Institute for Gender Equality, 2016. Gender Statistics Database, Women and Men in Decision Making. [online] Available at: <https://eige.europa.eu/gender-statistics/dgs/browse/wmidm>; EUROSTAT, 2017. Database [online] Available at: <https://ec.europa.eu/eurostat/data/database>

Positive estimators of the model slope parameters indicate that a higher degree of women's involvement in the decision-making process from the work of social actors (trade union and employers' organizations) has a direct impact on female employment, with positive effects on the quality of life.

The second model expresses the extent to which social protection expenditure varies according to the changes in the employment rate among women, the share of women in top management positions in companies and the share of female members of national parliaments based on the following relation:

$$Expenditure_social_protection\ (t) = 27{,}403 + 0{,}231 \cdot Women_board_members(t) + 0{,}348 \cdot Women_Parliament\ (t) + 0{,}278 \cdot Women_employment_rate\ (t) \quad (2)$$

The identified regression model has a high power to explain the variance of the dependent variable, of 62.9%, with a relative low standard error of the estimate. The relation between the share of social protection expenditures in GDP, women's employment rate, the share of women in top management positions in companies and the share of women in national parliaments is strong and statistically significant (correlation ratio of 0.793). The three explanatory variables, which quantify the degree of participation of women in economic activity, their involvement in the decision-making process in the business and political environment exert a significant direct influence on the variation of social protection expenditures (for a probability of over 95 %). Thus, a 1% increase in the share of female members of the boards of companies implies an average expected increase in the share of social protection expenditure in GDP by 0,231% (minimum 0,036% and maximum 0,426% respectively), assuming that the level of the other explanatory variables do not change. At the same time, as a result of the 1% increase in the share of female members of the national Parliaments, social protection expenditure may increase on average by 0.348% (minimum 0.138% and maximum 0.558%). The significant impact of the female employment rate translates into an average increase of 0.278% in the share of social protection expenditure as a result of a change in the rate of employment (a minimum increase of 0.058% and a maximum of 0.498%), assuming that the level of the other explanatory variables remains unchanged (table 4).

Table no. 4 Regression Model 2 - Results

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,793[a]	,629	,586	3,85387	2,426

a. Predictors: (Constant), Employment_rate_women, Women_board_members, Women_Parliament
b. Dependent Variable: Exp_Social_protection

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	27,403	6,200		4,420	,000	14,658	40,148		
	Women_board_members	,231	,095	,422	2,437	,022	,036	,426	,475	2,105
	Women_Parliament	,348	,102	,601	3,407	,002	,138	,558	,458	2,182
	Employment_rate_women	,278	,107	,380	2,599	,015	,058	,498	,669	1,495

a. Dependent Variable: Exp_Social_protection

Source: authors' results, in SPSS 20.0 program , based on data provided by European Institute for Gender Equality, 2016. Gender Statistics Database, Women and Men in Decision Making. [online] Available at: <https://eige.europa.eu/gender-statistics/dgs/browse/wmidm>; EUROSTAT, 2017. Database [online] Available at: <https://ec.europa.eu/eurostat/data/database>

On the basis of the two regression models, the level of the two dependent variables (female employment rate and share of social protection expenditure in GDP) for 2019 and 2020 in Romania was foreseen, according to the estimations for these years of the five independent variables. Thus, at a confidence level of 95%, a female employment rate of 57.5% (minimum 52.6%, maximum 62.4%) is projected for 2019 and of 58.9% for 2020, (minimum 54.1%, maximum 63.7%) (Table 5)

Table no. 5 Forecast Romania 2019-2020

MODEL 1 - Employment rate forecast for women (%)				
	Year	Average (%)	Lower bound (%)	Upper bound (%)
MODEL 1	2019	57,50	52,60	62,40
	2020	58,90	54,10	63,70
MODEL 2 - Social Protection Expenditure Forecast (%)				
	Year	Average (%)	Lower bound (%)	Upper bound (%)
MODEL 2	2019	20,02	17,34	22,70
	2020	21,08	18,62	23,54

Source: authors' results, in SPSS 20.0 program , based on data provided by European Institute for Gender Equality, 2016. Gender Statistics Database, Women and Men in Decision Making. [online] Available at: <https://eige.europa.eu/gender-statistics/dgs/browse/wmidm>; EUROSTAT, 2017. Database [online] Available at: <https://ec.europa.eu/eurostat/data/database>

Regarding the share of social protection expenditure, the expected levels for 2019 and 2020 are 20.02% of GDP and 21.08% respectively (minimum 17.34% and maximum 22.7% in 2019, at least 18.62% % and maximum 23.54% in 2020)

Conclusions

The issue of gender in leadership has become particularly important as more and more women have appeared in the boards of various companies, and discrimination has also made itself felt. Although most researches have revealed that the leadership styles of women and men differ, there are a few who argue that there are no major divergences. Organizations and leadership are seen as genuinely neutral structures, offering equal opportunities for both men and women. Equality can only be achieved by stimulating the moral part of organizations to take into account the special needs of women in association with childbirth and children growing, as well as domestic responsibilities.

Research results show that a higher degree of women's involvement in the decision-making process in the work of social actors (trade union and employers' organizations) has a direct, positive impact on female employment with favorable effects on quality of life. At the same time, the degree of participation of women in economic activity, their involvement in the decision-making process in the business and political environment, on top management positions outlines a new type of leader, "updated" to the requirements of the modern world, exercising a significant direct influence on economic performance and increasing the role of social protection measures to mitigate social exclusion and optimize the living standard.

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THE ANALYSIS OF THE MOST PRESSING CHALLENGES RELATED TO THE TRANSITION FROM THE DEVELOPMENT MODELS SPECIFIC TO AN ECONOMY IN WICH THE SECONDARY AND TERTIARY SECTORS PREVAIL, TO THOSE ECONOMY IN WHICH THE QUATERNARY SECTOR EMERGES

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Abstract

The intensity and the way each of the major sectors of the economy contributes to its prosperity has been the object of the concerns of the decision-makers of all ages but also of the academic and scientific specialists. The main assumptions that emerged were that the sectors of the economy (primary, secondary, tertiary and quaternary) are sufficiently different to allow for specialized comparison and analysis, and that aggregate growth rates but also performance in the efficiency and effectiveness plan is strongly influenced by the changes taking place in the relative importance of each sector, the contribution they make to the overall economic picture and the correlations and causality between these sectors. In this paper we analyzed the main solutions that can be offered to the increasingly acute challenges that the dynamic transition process brings from the prevalence of the primary and secondary sectors to that of the quaternary sector of the modern economy and we have clarified the most relevant changes of the techno- industry, the basic vectors that influence the efficiency and sustainability of the new economic development models, the threats but also the opportunities that they have to identify and meet those who decide on the macro and microeconomic level.

Keywords

paradigm shift; macroeconomic sector; challenges; new economic model; quternary sector

JEL Classification

O40, O47, O52

Introduction

The level and manner in which each of the major sectors of the economy contributes to its prosperity has been the subject of the works written by Adam Smith, David Ricardo, Karl Marx, John Stuart Mill, and other prominent exponents of economic philosophy. Starting from the initial perception of the economic sector, in recent decades we have witnessed the paradigm shift at the level of the modern economy, the analytical vectors being different, which led to the design of another economic sector design, the quaternary detachment from the tertiary (which now includes all the services) and encompassing the activities defined by intensity in the results of creativity. The research of the sectoral picture of the modern economy was also made in terms of the necessary capital and energy related to the number of employees. All this has led to the emergence of new business and to the establishment of

specialized training mechanisms, increasingly sophisticated management structures and methods, and redefining the aspirations of citizens. Analysis of the structure of the modern economy in the four or more sectors reveals that the allocation of resources among the activities has become more and more distant from the optimal economic state. The authors stress that it becomes increasingly obvious that it is not enough to identify threats and opportunities and to argue it becoming mandatory to say their success story. We offer some sustainable arguments for the idea that decision makers at all levels need to understand that new opportunities need to be identified quickly and correctly, logistics networks have to be optimized and operationalized into an increasingly autonomous machinery and equipment, that it will have to regulate and manage robot cohorts and additive manufacturing (3D printing). The research underline that the rapid pace of change will translate into distortions of current development models that will lead to a permanent need for new skills and attitudes to the challenges of the new economy. An economic model should be considered and operational, taking into account the advancement towards a more developed quaternary sector where intangible assets are a priority and in which knowledge and creativity are defining.

Intra and intersectoral correlations and causalities. Some comments.

The level and manner each of the major sectors contributes to its prosperity has been the subject of the works written by most prominent exponents of economic philosophy. They accepted the doctrine that made a certain delimitation between productive and non-productive activities according to the contribution made to the creation of tangible assets. Friedrich List argued that "*we must consider certain important societal sectors such as education, public administration and the communications network as productive*."(List, F. 1841) In the mid-twentieth century, he gained notoriety, especially in Colin Clark's work, the analytical subject of economic growth in the primary, secondary and tertiary sectors, in addition to the dynamic correlations between them. (Clark, C. 1957) Some relevant contributions in this area belong to Simon Kuznets, who presented some clarifications regarding the medium and long-term transformations in the structures of developed economies. He notes that "*on the example of the most developed countries ... it can be seen that there are significant developments in the non-agricultural sectors' presence in the economy. .....Sectors where growth rates have steadily increased have become those of business, professional or public services* " (Kuznets, S. 1968, pp.25) Most analysts have focused their research efforts on issues such as: the importance of the different sectors of the economy at different moments of economic development; conceptual and instrumental delimitation between productive and non-productive; identifying stages that are undergoing a process of economic growth. Interdisciplinarity has thus emerged at the level of clarifying efforts. Thus, a series of dilemmas have been made clear on the instruments used by the advocates of theories of development and prognosis; those concerning the delimitation between productive and non-productive sectors have turned to the accounting of national accounts and those referring to the stages of the economic development process, have resolved with the methodology related to economic growth theories.

It was noteworthy that the theoreticians were increasingly leaning towards the issues that national, regional and global economic realities provided. A first assumption is that the sectors of the economy (primary, secondary, tertiary and quaternary) are sufficiently different to allow for comparison and specialized analysis. Another analytical hypothesis is that aggregate growth rates but also efficiency and effectiveness are strongly influenced by changes in the relative importance of each sector, their contribution to the overall economic picture, and the correlations and causality between these sectors. In recent decades we have

witnessed the paradigm shift at the level of the modern economy, the analytical vectors being different, which led to the design of another economic sector design, the quaternary detachment from the tertiary and encompassing the activities defined by intensity in the results of creativity. The fourth Industrial Revolution, has also put its mark on the sectoral design of modern economy. The most radical changes can be observed in the balance between sectors across all continents and in all national economies, whether developed or under development. Modern production inscribed on the coordinates of internationalization can no longer be imagined without modern, fast, efficient, and easily accessible distribution networks. The information economy tool serves to generate knowledge, disseminate it, and also quantify the impact that creativity have on development processes. As the processes of specialization deepened and the stock of skills necessary to make the modern economy operational, the correlations between the sectors of the economy were redefined. All this has led to the emergence of new business and business entities and to the establishment of specialized training mechanisms, increasingly sophisticated management structures and methods, and redefining the aspirations of citizens. Analysis of the structure of the modern economy reveals that the allocation of resources among the most important types of activities has become more and more distant from the optimal economic state. Over the last decades we have witnessed an overestimation of the tertiary and quaternary sectors (especially financial services, banking and insurance, education, legal and advisory services or administrative services), but also a somewhat hasty acceptance of the post-industrial posture that has to neglect the traditional processing sector. These developments have led to the addition of areas of inefficiency and lower macroeconomic and meso-economic performance. Against this backdrop, the emerging economies, which promote developmental models centered on the manufacturing industry, have become the major exporters to the markets of the states that have advanced on the post-industrial model centered on the tertiary and quaternary sectors. It should be noted that the risk of deepening the macro and mondo-economic imbalances with very risky effects for regional and international stability is accentuated.

One of the assumptions by those who have dealt with the emergence of the quaternary sector assumes that, at least on a principled basis, this process has helped to reduce the rate of increase in economic efficiency. The idea from which most analysts start is that there is potential for increasing efficiency in any of the four sectors of the modern economy. What is important to note is that the risk is at the level of aggregate efficiency and it depends on the optimal allocation of production factors between the four sectors, the optimal combination being the one leading to the expected results. It should also be recognized that the relationship between sectors depends essentially on the technological vector. It is also necessary to assume that currently quaternary production coefficients are less clearly defined in terms of technological relevance than the other sectors. It is also generally believed that the end-user satisfaction of assets generated in the quaternary sector is still outpaced by that fed by assets in other sectors. It is generally understood that economic development implies an increase in the share of iterative activities that replace traditional ones. Hence, the balance between the four sectors of the economy can be ensured at certain levels of economic growth and aggregate societal performance. We have good reason to believe that between economic growth and economic efficiency there is a positive and statistically relevant correlation and also that among the most important activities in the economy can be identified at least the improved balance at which possible the desired efficiency gain. Several analysts suggest that if the optimum cannot be achieved within each sector, we can expect to achieve better cross-sectoral alignment so that efficiency gains in a sector of the economy are not attributable to decreasing efficiency in other sectors. The current contribution of various economic activities to overall progress will be around their contribution to economic growth, explaining the various cyclical or non-cyclical factors on

which development depends. It has already been demonstrated empirically that the existence of structural asymmetries is not due to the increase in the share of tertiary and secondary sectors or to the increase in the volume of the final product achieved in these sectors. Kuznets argued that "*a low elasticity of demand for food and current use and a higher one for durable goods and services*" and „*when users became participants in the production process and moved to the urban environment, they needed goods and services they did not need when they were in the countryside*." (Kuznets, S. 1966. pp.98) The most sensitive challenge is the quantification of the final product achieved in the quaternary sector. Another facet of this problem is the difficulty in estimating the costs of deepening the specialization and the new division of labor. When the very dynamic sectors of the modern economy do not find specialized econometric equipment, the correct evaluation of the resources allocated here suffers. However, advancing the quaternary sector of the economy is both inevitable and beneficial. Despite this certainty, adapting to new challenges is not easy, and the *possibility of feeding inefficient areas is very high.*

Redefining the economic models in the conditions of the challenges of the 21st century

Perspectives on the process of paradigm shift are very different both at the academic, institutional, national, regional or international level. We need to be less attentive to figures and more and more attentive to other determinants such as "*rising aspirations, relative income differences, and the security of gains become increasingly important*" (Graham, p. 47). In the same epistemological landscape, it becomes increasingly obvious that it is not enough to identify threats and opportunities and to argue it, but it becomes mandatory to say "*their success story*", which leads us to what Pink postulates, namely „ *It's no longer sufficient to create a product, a service, an experience, or a lifestyle that's merely functional. Today it's economically crucial and personally rewarding to create something that is also beautiful, whimsical, and emotionally engaging,,* (Pink, 2005, p. 68). The landscape of the fourth industrial revolution is increasingly populated by concepts such as cyber-physical systems, the Internet of things and the Internet of systems. Such processes have a bearing on the whole landscape of modern economics, starting with the discovery of new fundamental principles in various branches of science and the design of new technological systems and continuing with the applicable business models, the skills that intellectual capital must have, talent and initiative as vectors of competitiveness. Decision makers need to understand that new opportunities are emerging that need to be identified quickly and correctly, that logistics networks have to be optimized and supposed to be supposed to operate with increasingly autonomous machinery and equipment, that it will have to regulate and manage robot cohorts and additive manufacturing. More and more citizens are aware of the day-to-day challenges that they have to face, now at the beginning of the 21st century, of another type, they spring from other generations of dominant social logic, they are based on ever more complex and unpredictable resorts, risks that disseminate with great rapidity and compel the best management of time and space. It is becoming increasingly clear that, while the previous century was based on specialists, the current century is based on facilitators or integrators who are able to use their expertise but also excel in looking at the correlations and causality between phenomena and processes. Some experts draw attention to the fact that people have more and more aspirations but fewer achievements, the balance between those who act and those who decide, increse the number of organizations that thrive without creating palpable content, bidder's services that do not have any of their own assets, there is an offer without demand but also a lot of demand without offer. It is becoming increasingly urgent to find the best solutions to new types of challenges such as: *the environment and resource shortages, skills in employment and human capital, gender equality, long-term investment, infrastructure and development, food security and agriculture, international investment and commerce, the future of the Internet,*

global crime and anti-corruption, social inclusion and the future of the financial system. A genuinely revolutionary approach to the new international economic climate is based on: *working dynamics and multidimensional change; increasing the share and societal relevance of the middle class in emerging economies; preoccupied climate change; the growing constraints exerted by the balance of natural resources; geopolitical volatility in dynamic growth; the growing concern of the planet's consumers over the ethical and related aspects of respect for privacy; the "grizzling" of our planet; the asymmetric demographic increase in the various regions of the globe; the impressive dynamics of the urbanization process.* All of these become topics of great interest to the planet's warriors, always bewitched by the fact that they are socially-minded architects and sincerely concerned with these challenges. The changes determined by genetic engineering, artificial intelligence, robotics, nanotechnologies, biotechnologies, 3D technologies, create highly redefined societal landscapes and networking of a totally different kind. A number of intelligent systems will help address challenges ranging from complex logistics chains to careful management of the effects of climate change. Many of the major transformation drivers that affect the different sectors of the economy will have a major impact on the type of jobs, generating both job creation and job diversion effects. In addition, one must expect substantive changes in the level of labor productivity and the deepening of asymmetries between the skills required by the new economy and the qualifications offered by education and training systems. Demographic, socioeconomic, and technological factors, and paradigm developments in business models are making perceptible changes in the global social landscape.

The most pressing paradigm shifts in the economic models

An economic model should be considered and made operational, taking into account the advancement towards a more developed quaternary sector where intangible assets are a priority and in which knowledge and creativity are defining. As a specialist in this field points out, "*Problem solving and strategy building is a central foundation for all business. With the very complex changes brought about by the Internet and the continuing exponential advance of computing (often involving new architectures) that the authors describe throughout their entire book, the old top-down ways, "push" based ways of doing this, are no longer very productive* ". (Hagel, J.S.B and Davison, L. 2010) At the same time, this will require concerted efforts for adaptation, a process for which most of the operational actors in society seem not yet trained. Public authorities still have a lot to do to develop and implement public policies that focus on fostering knowledge-generating processes, regulating novelties attached to new technologies, and putting prosperity-generating processes into quadruple helix logic. The new paradigm of development focuses on the exponential dimension, unlike the previous one in which linearity prevailed. Searching for the optimal development model is not a trap-free approach and contains many of the entropy ingredients. This will mean, firstly, substantive changes in each of the sectors of the economy (primary, secondary, tertiary, quaternary). The amplitude and depth of these transformations is almost equal to productive, management and governance systems. These transfigurations can have many effects, the riskiest one being in terms of social inequality, especially the effects that can occur in the balance of the existing labor market equilibrium. These developments will lead to the emergence of a more and more segregated human capital market in categories such as "*few skills / few money*" and " *transdisciplinary / more money*".

The technological driver will need to be treated in closer correlation with revenues and welfare dynamics. In the future, we will be seeing the increasingly obvious differences in employment dynamics determined by the stock of skills available to the employee. The already manifest effect is the emergence of a intellectual capital market where we will

witness exponential increases in demand for highly qualified (or low skilled) human capital but also stagnation or even regression in the medium-skilled human resource segment. These developments will seriously impinge on the development models that can count on and from which we can expect prosperity. The new model of economy must be one in which ethical and corporate social responsibility issues are prioritized. These ingredients of successful success in a turbulent regional and global economic climate must be cultivated at all levels, political party programs, government strategies and policies, company policies, or programs and projects of civil society actors. The first signs of understanding this imperative can be considered as aspects such as: extra-financial reporting, responsible investment, respect for fundamental rights. We are witnessing an increasingly obvious decoupling of the new development model with its time-based version and centered almost exclusively on generating value for shareholders and orienting it towards a format in which the social dimension becomes increasingly apparent. We see the growing interest of the whole society for a development model in which the increase in the volume of resources that can be attracted to the realization of a particular project is decreasing, and the efficiency with which the existing resources can be used is increased. We can no longer ignore the growing complexity of challenges ranging from those of ecological to technological ones, leaving unaffected any of the aspects of a modern economy, especially economic, socio-cultural, legal or ethical. In this context, where we witness the emergence of a true collection of paradigm shifts, the need to set up new models that operate with other categories of determinants and from which other kinds of results are expected is even more pressing. What is becoming less and less defining for the economy of the present and especially for the future is mass production, centralized and top-down production systems, intensive scale economies in depleting resources, financial markets that have led to dangerous loops, dominance of primary and secondary sectors. By challenging the traditional foundations of economic mechanisms, some authors (Hagel, J; Seely, J. Lang, D. 2010) draw attention to the factors that lead to the failure of some sectors of the economy and suggest some solutions to stop the decline or boost the new economy. It is becoming increasingly obvious that, under the new techno-industrial paradigm, long-range events can have a significant impact on macroeconomic and sectoral policies developed and implemented by some public authorities. We are witnessing a process of transition from international politics to global governance, this process being sensitive and dependent on a wide variety of factors. All public entities are placed in the arena of synergic interdependence between components such as: the complex network of bi, pluri and multilateral agreements; public-private partnerships; private governance and tripartite governance mechanisms. The most sensitive challenge of the 21st century for any country, whether developed, developing or less developed, is that institutional architectures designed to facilitate the management of opportunities and increasingly threatening risks do not seem to be prepared to perform its standard functions, the purpose of which is not to their diversity, scope and nature. The forms of inadequacy of the existing regulatory and institutional framework are very varied but they do not fully express the nature of the asymmetries, but only illustrate different degrees of inadequacy. The world in which we are evolving is "*imperfect and disordered*" and any reform proposal must take into account the ideals of democracy, equity and justice for all. It becomes mandatory for humanity to intelligently manage a radically changed economy model by carefully following the following transitions: from *push to pull* (from pushing structures and assets to pulling resources and consummer habits); from *consuming to creating* (from passivelly consuming to actively creating new assets); *from assets to facilities* (from acquiring and hoarding to spreading and sharing knowledge); *from linear to multi-dimensional* (from independent and predictable systems to interdependent adaptive systems); from *scarcity to abundance* (a limited set of choices to renewable resources); *from universal to unique*.

Romania at the confluence with the challenges of transition from the secondary and tertiary to the quaternary sectors

It is striking that in Romania, all these sensitive subjects should be the first on the agenda of public decision makers, subject to academic debates, to be the preferred subjects of public debate and to be on the agenda of every citizen. The Romanian experts should become more visible in the large European and international networks established in the field of advanced research, contribute to the world dialogue of innovative ideas with problem solving and feasible solutions, compare their scientific results with those of other experts from the other countries of the world. It can be noted that the challenges we have to face are strategic ones, not conjectural-tactical, and as such, require answers of the same nature and amplitude. Common issues of debate and action need to become the issues of transforming value chains and production networks into vector-shaping for the international economy, integrating states at different levels of development. In this economic register, production of goods and services takes place where the material and financial resources and skills inventories are available and they can be procured at the cost and quality that generates more competitiveness. We are now witnessing the deepest level of fragmentation of production across national borders, which has serious implications for trade and investment flows and provides concrete insights into growth, technological development and job creation. The economic reality in Romania shows that we are still far from the endowment with the mechanisms of rapid reaction to these challenges. For small and medium-sized companies (SMS), participation in global production networks is vital to accessing technology and hoping to achieve competitive advantages in terms of labor productivity. Public policies that facilitate the integration of domestic firms into internationalized production processes and promote the attraction of intangible assets from abroad become essential for transforming cross-border exchanges into a vector of prosperity. The decision makers in our country should be increasingly interested in supporting Romanian capital companies to connect to these integrated logistics chains in order to gain access to know-how, useful information and high standards of quality. It will also have to be understood that participation in global logistics chains can create many positive externalities such as: more, better paid and more stable jobs, technical progress, the acquisition of managerial skills and high expertise, the modernization of capacities production and diversification of exports. On the other hand, accessing global supply chains can also increase the need to find the best answers to a number of increasingly sensitive challenges. Within these global logistics chains, Romanian companies are reserved places for intensive processing processes in less skilled labor and sectors with lower added value. Even under these circumstances, as a result of the intensification of the inter-corporatist competition, it is still possible to benefit from the optimization of productive processes, technological modernization, easier access to foreign direct investment, the strong signal they can transmit in terms of quality and punctuality. If sustainable development strategies are being developed and smartly structured public policies are implemented, the chances are that our firms can move to the value-added creation chain to those areas where profits are higher. It is indisputable that, in order to achieve this progress, we need to reinvent at the sector level or at process or phase stage the productive process.

The main challenge the operational actors in the Romanian business environment are confronted with, is not how to participate in the global logistics chains but rather how to maximize the gains that can be gained from this participation. One of the reference vectors of this process is the technological one. Instead of confining itself to the hesitant management of a turbulent daily, public authorities in our country may dare to think about solutions such as: promoting foreign investor attraction policies; Enhancing supply efficiency by improving business climate; modernizing the infrastructure and inducing

professional excellence at the level of the education system. You cannot navigate the agitated waters of the "Fourth Industrial Revolution" with young people ready for the past or present trades. Our young people should take note of the challenges of the future and the alternatives to them from the primary school to the tertiary education. Education for the future must contribute to the operationalization of sustainable production and consumption processes integrated into national, regional and international strategies. There should be no shortage of curriculum design at any level of the educational landscape where the development of critical and creative thinking, the "creative economy" and related industries are concerned.

Conclusions

The new development model is based on vectors such as: *social engagement, increased transparency, cooperation with civil society and a quest for an energy saving, low carbon mode of operation that is attentive to human and social rights.* Despite the progress made in recent years, the issue of structural analysis of the economy needs to be further explored. Historical reality has shown that the transition from any of the traditional sectors to the more advanced was difficult. This situation also occurs in the case of the transition from the predominance of the tertiary sector to the quaternary sector.

There are some signs that things have begun to move in Romania, but what is essential is that they continue at least at the same level. Unfortunately, the relevant personalities of our business environment seem more preoccupied with survival than with European or international acknowledgment and confirmation, and are not found in the arena of the great economic forums currently being organized. Involvement in this duel of dilemmas as well as innovative solutions will allow to understand at the level of the entire Romanian society that radical paradigms at societal level are radically changing. We should recognize the importance of culture and the creative economy and support the development of national programs to stimulate them and reposition them as vehicles of economic and social transformation. Developing and implementing policies that target the creative economy is not only responsive to economic needs but also to special needs of communities such as education, cultural identity, social inclusion, protection of natural resources and their integration into local, regional and global markets. The cultural and creative industries are boosted by the competitive advantages of states in the way of innovative products, the emergence and dedication of brands, and the improvement of the external image of the countries that encourage them.

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IMPROVING SERVICE MANAGEMENT IN TOURIST ACCOMMODATION UNITS FROM MARAMUREȘ COUNTY

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Abstract

Worldwide, tourism has grown in importance, being considered a souce of wealth. The competitive environment in which accommodation units operate is focused on customer satisfaction which requires strong interaction between the management of the accommodation units and the client. Provision of high quality services favors the increase in economic efficiency as well as customer satisfaction related to the services offered by the accommodation units. Dealing effectively with customer variability represents a great challenge for service businesses that need to learn to manage it in order to provide the customers with the expected quality and profitable offerings.

Keywords

tourism, quality, service management, customer orientation, satisfaction.

JEL Classification

M21, Z31, Z32.

Introduction

Nowadays, organizations are operating in a globalized economy where markets are described by hyperactive competition (Sloan, Legrand and Chen, 2013). This means that businesses must be able to continuously adapt to the changing environment and also maintain their focus on the quality of services, customer needs so as to retain the present customers and attract potential ones, all of these taking into consideration the available resources. In order to achieve competitive advantage, companies should not only capitalize on their technological and physical capabilities, but also find solutions to improve the performance of employees (Bavik, 2016).

Worldwide, tourism is seen as a source of wealth, as well as a political, economic and social force. The concept of quality in tourism is thus defined by the World Tourism Organization as "the result of a process that involves satisfying all the needs, requirements and the legitimate expectations of consumers for products" (Ciucudean, 2009). Apart from the direct benefits of tourism in the economy, another important aspects are related to transport services, hospitality services and also, the beneficial effects of tourism for the mind and body as people can relax, have fun and also discover new places (Jurcău and Popa, 2012).

At the moment, the cultural tourism has experienced a growing trend. According to Richards (1996), culture has become an essential part of tourism: tourism being now regarded as culture. Cultural tourism may take various forms, from which there can be mentioned: religious tourism, gastronomic tourism, visiting archaeological sites, parks, gardens, castles, memorial houses, taking part at festivals, cultural events. The role and

importance of tourist services is also reflected in the fact that they must be designed and organized so that, following the consumption of the service, the user to gain extra information, knowledge and even new skills. Only in this way, tourism receives a new role and content in accordance with the increasing requirements of the modern traveler (Sabou et al., 2015).

According to Bogan, Vărvăruc and Stoican (2014), quality management in tourism requires the companies to be long-term oriented, continuously improving their products and services, together with their capacity to anticipate the customer needs in order to meet or maybe to exceed their expectations. All of these will lead to increased productivity and profit.

The quality of tourist services represents the ability of a tourist service to meet through its features the expressed or implied needs of tourist at the level of his expectations and quality standards (Cruceru and Bica, 2011). Provision of high-quality services favors the increase in economic efficiency, customer satisfaction related to the services offered by accommodations (Ciucudean, 2009).

Cruceru and Bica noted that since 1980, in the hospitality sector there have been concerns for quality of services and products offered to customers due to the impact they can generate on the performance of the business. It has been found that quality management can influence performance indicators in two ways: through an internal impact by improving efficiency, reducing costs and through an external impact by maximizing the market share, increasing the number of customers, obtaining customer satisfaction, improving the image (Cruceru, 2010, Marquardt, Olaru & Ceausu, 2017).

The accommodation units implement quality management systems because they are considered a way to: improve service quality; train employees; to develop a quality culture; to achieve the desired economic efficiency (internal impact); to create a favorable image (external impact).

There are five dimensions of quality for tourism:

- *The quality of tangible part*: buildings, equipment, appearance of staff and accommodation;
- *Credibility*: the fulfillment of tourism services promised in the offer;
- *Courtesy*: availability of prompt and efficient service;
- *Safety*: the reputation obtained by a tourist unit through its customers and through its offered travel packages;
- *Empathy*: commitment to clients and the individualization of the activities done depending on tourists (Cruceru and Bica, 2011).

Bogan, Vărvăruc and Stoican (2014) considered that today's consumers' expectations concerning quality involves the satisfaction of their needs and wants that are related to hygiene, ensuring security and safety, accessibility, protection of the natural environment, preserving the traditions. The essential element that potentiates the achievement of total quality in tourism is the human factor, which implies that firms must be flexible enough to permanently adapt to the changing environment (Onete, Pleșea & Budz, 2018).

Dealing effectively with customer variability represents a great challenge for service businesses that need to learn to manage it in order to provide the customers with the expected quality and profitable offerings (Frei, 2006).

Frei (2006) stated the five types of variability introduced by customers that influence the performance of service businesses: arrival variability-which refers to the different times when a client wants a service, which do not necessarily suit the needs of the companies; request variability-which relates to the different amenities, needs, preferences that customers may ask from the service businesses; capability variability-which refers to the different skills, level of knowledge, abilities of customers involved in performing various roles related to the service, effort variability- implies the level of effort a customer is willing to put when performing a task with regards to the service and subjective preference variability-

which refers to the different perceptions regarding quality and treatment in a service environment.
As Ciucudean (2009) stated, in today's fierce competition, managers must pay significant attention to client-orientation in their actions to achieve the desired economic efficiency. In order to satisfy the client's needs, organizations may appeal to diversification strategies, considered by Porter (2001) to be a determinant factor in the activity of an organization, contributing to the development of performance indicators. Also, Pantelescu (2010) emphasized that lots of improvements have been made in the study of the relationship between service diversification and performance.
The implementation of information technology in accommodation units is overwhelming because of the advantages it produces: obtaining customer loyalty, improve profitability and performance improvement of the processes for service provision (Cojocaru, 2010).
In the hospitality industry, branding is considered to be an essential activity in order to achieve competitive advantage. According to Pavel and Baltaretu (2015), the destination brand symbolically describes "positive, memorable, attractive, unique, relevant and sustainable qualities of a destination". Therefore, this image will be reflected in a set of beliefs and impressions about a particular tourist destination that may also influence the development of the tourism in that area by encouraging or discouraging potential tourists to come to visit that destination.
The competitive environment in which accommodation units operate is focused on customer satisfaction which requires strong interaction between the management of accommodations and the client (Fleşeriu, 2011). The dimension to which the staff is customer-oriented is considered a key factor for achieving economic success (Stegerean, 2006).
Fleșeriu (2011) considered that in achieving customer satisfaction, the role of human resources is recognized and improving the quality of services must be centered on the selection, training and staff rewarding. Managers who grant importance on the relationship between customer focus and employee satisfaction, succeed in ensuring personnel involvement in improvement practices, with favorable effects on their business results (Boselie and Wiele, 2002).

Analysis of the Maramures region

Maramureș County is considered to be one of the most emblematic tourist destinations in Romania. Maramureș County belongs to the Nord-West Region providing numerous tourist objectives, being considered a Romanian cultural brand. The Maramureș County is recognized for "the spectacular landscapes, traditions and habits and also, for the vernacular of Maramureș that exists since ancient times" (Ștef, 2008).
Maramureș provides tourist destinations of great originality that keep the traditions and the spirit of Maramureș alive, among which there can be mentioned: the wooden churches which are part of the UNESCO heritage, Mocănița Steam Train, The Maramureș Village Museum, Monastic Establishments (St. Ana Monastery at Rohia, The monastic complex from Bârsana, The Moisei Monastery, The Săpânţa Monastery), Strongholds and Castles (Chioar Stronghold, Teleki Castle), Memorial Houses (Vasile Lucaciu Memorial Museum, Gheorghe Pop de Băseşti Memorial House, Petöfi Sándor Memorial House), The History and Archaeology Museum, The Memorial of the Victims of Communism, The Mineralogy Museum Baia Mare, "Petre Dulfu" County Library, Ştefan's Tower and the Fortress Square (Baia Mare), The Historical Center of Baia Mare, The Art Museum – The Baia Mare Cultural Artistic Centre. The Merry Cemetery is considered to be one of the most important attractions from Maramureș, being famous for its colorful funeral crosses with witty poems written on them, which harmoniously combine the spirituality, the ancient beliefs with the wood (Sabou, et al., 2015).

According to the National Institute of Statistics, at the level of Maramureș County there are 197 accommodation units that provide 5,614 places. The accommodation capacity from Maramureș represents 25,55% from the Nord-West Region's capacity (first place, being followed by Cluj County and Bihor County).
The largest share is held by agro-tourist boarding houses– 40% (79 units), followed by touristic boarding houses – 36.5% (72 units) and the hotels – 12.6% (25 units), while the smallest share is held by tourist villas (only one unit).
Concerning the number of tourists who visited Maramureș in 2015, 81% were represented by Romanian tourists (125,463 tourists), while 19% were represented by foreign tourists (29,170 tourists).

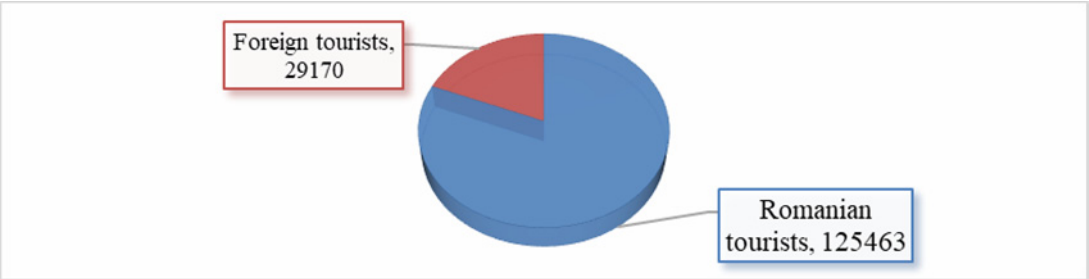

Fig. no. 1. The number of tourists who visited Maramureș in 2015

As far as the most visited destinations are concerned, between September 2015 and September 2016, the most visited place was Baia Mare (87,132 tourists), followed by Sighetu Marmației (25,716 tourists), Borșa (13,370 tourists), Vișeu de Sus (11,133 tourists), while the least visited was the village Șieu (only 79 tourists).

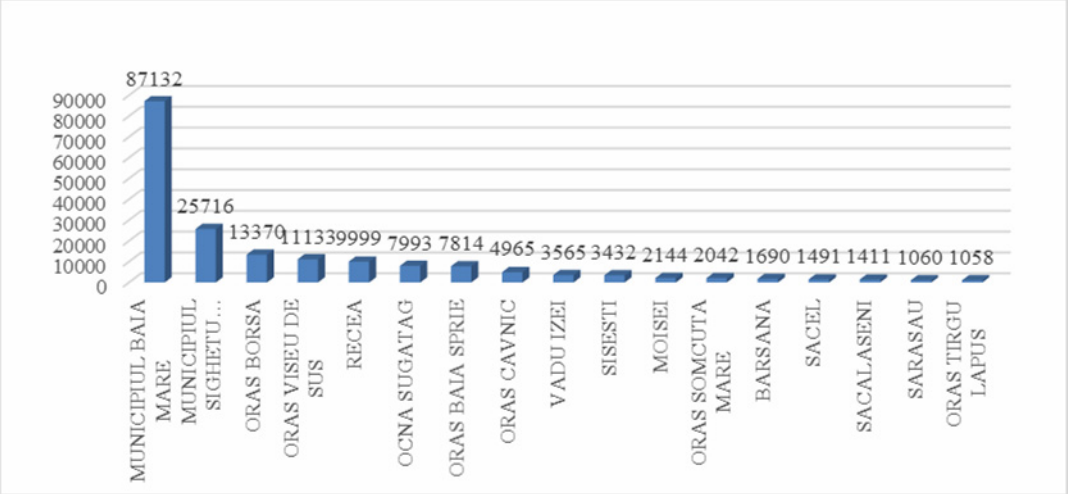

Fig. no. 2. The number of tourists visiting Maramureș between September 2015-September 2016 (only the destinations which received over 1000 tourists)

Nistoreanu (1999) noted that it is proved that the existence of a valuable touristic patrimony does not automatically lead to high profitability unless the patrimony is made accessible to tourists through corresponding services.
Although Maramureș has a great potential for developing tourism and attracting people from all over the world, the service offered especially in the rural areas are limited to accommodation and dining services. In a reduced share, there are organized other types of

services like: sleigh rides, carriage rides, horseback riding, attending traditional crafts exhibition, hiking trails, going with the Mocănița steam train.
However, the tourists that choose Maramureș County have the opportunity to come into direct contact with the traditional activities carried out in the Maramureș households, habits and specific traditions during various events and iconic moments in the life of the peasants from Maramureș, without them being especially organized for touristic purposes (Simion, 2011).
Simion (2011) considered that there are a series of problems that influence the decision of tourists to visit Maramureș County, among which, the most stringent are: poor infrastructure, under-dimensioned promoting activity, lower quality of tourist services compared to other countries, reduced facilities found in the accommodation units from rural villages, small number of organized tourist activities, absence in the rural areas of facilities for people with disabilities.

Methodology of the research

The study has as main objective the improvement of the quality of the tourist accommodation units which were analyzed. For this research, a questionnaire comprising 25 questions was designed. Based on the responses to questions, there have been identified the main problems encountered in the accommodations, which generated a low degree of customer satisfaction.
The method used for determining the satisfaction degree is the survey based on questionnaire, the analysis of responses representing the starting point to improve the quality of tourism services in the units analyzed. In order to determine the satisfaction of customers relating to the quality of services and products offered and to find out their preferences, the questionnaire was applied to 23 tourist accommodation units.

Analysis of the study results

The results of this survey are grouped into two diagrams in order to present the degree of customer satisfaction takin into account the items analyzed in the questionnaire.

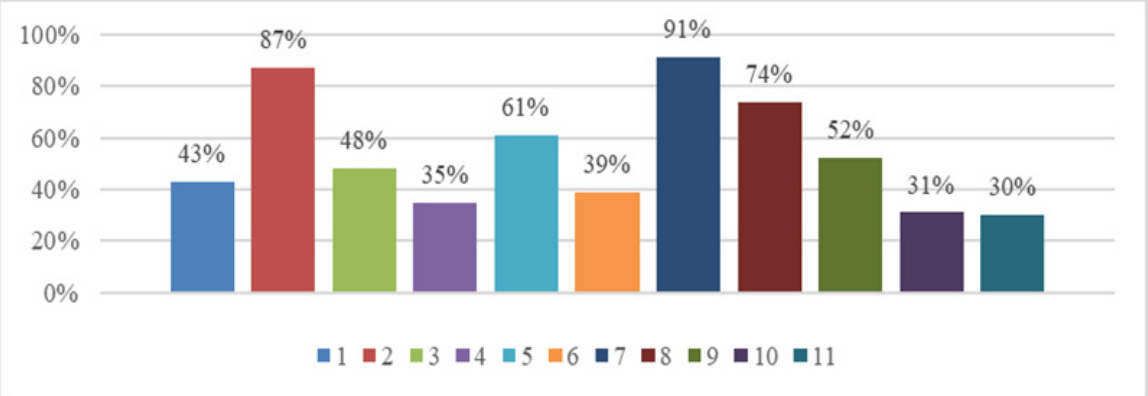

Fig. no. 3. The degree of customer satisfaction

The variables involved are the following:

Table no. 1. Leisure form, by category

1.	Leisure forms	43%
2.	The location of the accommodation unit	87%
3.	Access and transport to the destination	48%
4.	Accommodation capacity of the units	35%
5.	Room types	61%
6.	Average time for check-in	39%
7.	Free access to Internet	91%
8.	Parking places	74%
9.	Informations regarding the tourist objectives	52%
10.	Quality and variety of services	31%
11.	Attention of personnel towards clients	30%

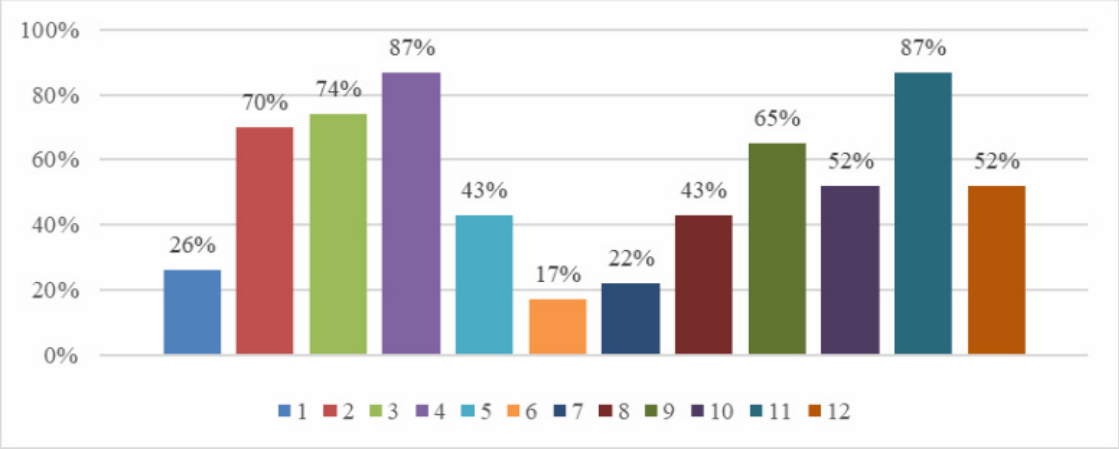

Fig. no. 4. The degree of customer satisfaction

The variables involved are the following:

Table no. 2. The variables involved

1.	Cleanliness in the accommodation units	26%
2.	The tranquility and the possibility to relax	70%
3.	Spending the leisure time	74%
4.	Restaurant open for breakfast, lunch, dinner	87%
5.	Diversity of menus	43%
6.	Menus with ECO products	17%
7.	Average waiting time for serving meals	22%
8.	Communication with the personnel	43%
9.	Promoting ways	65%
10.	Staff dress code	52%
11.	Elements of visual identity	87%
12.	The personnel behaviour	52%

Analyzing the degree of satisfaction with a percentage less than 50% from both diagrams, it resulted the main problems from tourist accommodation units that can be improved are:

Table no. 3. Main problems

1.	Leisure forms	43%
2.	Access and transport to the destination	48%
3.	Accommodation capacity of the units	35%
4.	Average time for check-in	39%
5.	Quality and variety of services	31%
6.	Attention of personnel towards clients	30%
7.	Cleanliness in the accommodation units	26%
8.	Diversification of menus	43%
9.	Menus with ECO products	17%
10.	Average waiting time for serving meals	22%
11.	Communication with the personnel	43%

The diagrams showed that the major problems of the tourist accommodation units analyzed are the following: reduced number of leisure forms and tourist activities, increased average waiting time for check-in, cleanliness of accommodation units, difficult access to the destination due to the poor infrastructure, reduced diversification and lack of menus with ECO products, poor client orientation, quality and variety of services provided for which satisfaction is low.

In order to improve the quality of services provided in tourist accommodation units, a series of recommendations have been formulated:

- diversification of tourist activities and the presence of an offer with a high degree of attractiveness;
- development of programs concerning traditional occupations of the local people in order for tourists to come into contact with the spirit of Maramureș County;
- encouraging and supporting tourism activities involving protected areas or forests, organization of trips with specialized guides;
- improvement of infrastructure, access roads to support tourism development and deployment especially in rural areas;
- construction of paths marked with signs for access to observation points;
- modernization of tourist accommodation units to improve the quality standards
- putting a great emphasis on the traditional local gastronomy and on usage of ecological products;
- improvement of tourism promotion activities, with a strong emphasis on the online advertising;
- managers to invest more in flyers and leaflets that promote the services offered to tourists;
- introduction of a Diary for tourists' impressions in the accommodations, which will identify customer dissatisfaction, so as managers will be able to make better decisions to improve service quality;
- implementation of specific programs regarding motivation, support and reward of employees, coherent personnel training programs (focus on foreign language skills and client orientation) in order to ensure and improve the service quality and customer service management;
- paying close attention to the cleanliness of the rooms;
- improving the efficiency of check-in and check-out procedures by establishing specific intervals for each of them in order to eliminate the long waiting times;
- development of facilities for people with disabilities.

Conclusions

Sustainable development of tourism in Maramureș has a high chance of success due to the attractive potential of the area, to the natural settings with nature reserves and parks and to the preservation of traditions over time which is specific to the Maramureș County.

Development of tourism in Maramureș will contribute to the preservation of natural and cultural heritage in rural areas, and also to the improvement of living standards in this region of the country.

The managers of tourist accommodation units which were analyzed, through effective leadership, may succeed in applying measures to solve the identified problems regarding the lack of customer orientation, cleanliness of accommodations, lack of menus containing ecological products, reduced quality and variety of services, access and transport to tourist locations, the waiting time for check-in and for serving meals, for which customer satisfaction is low.

Application of management methods and quality standards will improve the performance of services in the analyzed tourist accommodation units. Managers of these units will have to invest more in the quality of services and implement an effective system of quality at the level of the hotel/boarding house.

In order to improve the quality of the services provided in the tourist accommodation units, managers will have to train and motivate human resources, with a view to generating increased satisfaction from customers.

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ROMANIAN STUDENTS' INVOLVEMENT, AS POTENTIAL DRIVERS OF CHANGE, INTO ACADEMICALLY R&D - RELATED ACTIVITIES

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Abstract
In the past 20 years, knowledge-intensive business services (KIBS), like research and development (R&D), have widely spread in American, European and even Asian countries. Such services exert a considerable amount of influence over the process of innovation in the context of a knowledge-based economy. As the EU failed to achieve its main goal of transforming the EU economy into one of the most dynamic and knowledge-based economies of the world and the discrepancies between countries have expanded mostly due to a dearth of qualified or experienced employees, this study will try to apply and develop a model that might contribute to boost their motivation towards getting involved into knowledge-based activities, such as R&D. Romania is one of the EU countries facing an enormous shortage of qualified and motivated personnel able to master and evaluate specialized information and model it into suitable inputs. Being actively involved at an early stage of a career, even as a student apprentice, could represent the first step into creating a new generation of highly motivated and skilled specialists. This paper represents an extension to a prior pilot-study regarding students motivation towards manifesting interest regarding R&D-related activities, but is analyzing the situation on a larger scale, with respondents having a various academic background, studying from technical to social sciences majors. Therefore, we intend to find a solution that will change Bucharest students' perceptions regarding their involvement into knowledge-based activities, aiming at preparing them as future professionals.

Keywords
R&D, KIBS, innovation, human capital.

JEL Classification
O31, J24, D83, E24, P46.

Introduction

Encouraging students' participation into R&D-related activities and discovering the main drivers of becoming active learners and future knowledge-oriented professionals (Miles et al., 1995) represents an important goal for Romania's future business innovations environment and development in the context of a dynamic knowledge-based EU economy. This goal has become a real challenge for the public R&D field, especially universities, but also for knowledge-intensive companies who perform R&D activities that support and enhance the growth of both secondary and tertiary sectors and business models (EMCC,

2006). EU is far from achieving its 3% aim of R&D intensity (European Commission, 2010) by 2020 and one of the main reasons is the lack of innovation efforts and capable personnel. Therefore, the present study aimed at analyzing Romanian students' motivation and interests regarding R&D-related activities and the importance given to such activities towards the brighter innovation future of the Romanian knowledge-based economy. In a KIBS firm, rarely can be found professionals who, as a daily activity perform R&D-related tasks, and if they consider such activities knowledge-oriented, they usually represent only consulting ones (Miles, 2007). A KIBS company could be able to fill in the existing dearth of R&D knowledge in a client-firm by augmenting the existing activities (Doloreux & Shearmur, 2012) and transforming it in a more competitive one (Czarnitzki & Spielkamp, 2003). In order to fulfill these needs, a KIBS firm has to train its personnel or, even better, to hire already schooled graduates. Hence, training and motivation might need to start from an early age, by getting involved in R&D-related activities (Miles, 2007) such as participation to competitions, conferences and other stimulating activities.

Regarding students' motivation towards getting involved into R&D-related activities, we started our research based on Tuan's et al. (2005a) SMTSL designed questionnaire which initially proposed six variables (achievement goals, performance goals, learning values, learning environment and self-efficacy) that influence motivation towards science learning in high schools. This instrument was applied and adapted by many other researches, in the same field or related ones, and came with similar or even different results (e.g. Velayutham et al. 2011; Singh, Misra & Srivastava, 2017). In 1998, Mintzes et al. suggested that students will get involved into different assignments if they regard them as valuable and meaningful (Tuan, Chin & Shieh, 2005). Connecting the motivation theories to Mintzes et al. theory (1998) as well as Tuan, Chin & Shieh's (2005) we could consider that motivation behind student's involvement into R&D-related activities resides in the relationship built between motivation and the aforementioned independent variables.

Learning values could be explained as students' ingenuity into giving certain values to activities they engage in (Tuan, Chin & Shieh, 2005) like problem solving or science inquiry (American Association for the Advancement of Science 1993, NRC 1996). Therefore, our first hypothesis is: there is a significant, positive and strong relationship between learning values and motivation towards getting actively involved into R&D-related activities. Other researchers have concluded that there might be an essential link between attitude and success towards learning courses (Gilbert, 2001), there, by extension, there might also be a liaison between attitude and motivation towards R&D activities, as a person's predisposition to react in a certain manner to external factors as situations, concepts etc. (Singh, Misra & Srivastava, 2017). Our second hypothesis illustrates that there is a significant, positive and strong relationship between attitude and motivation towards getting actively involved intro R&D-related activities. Learning environment comprises student to student relations and information exchange, the teacher's pedagogy techniques and engagement with students (Fencl & Scheel, 2005), an environment with significant influence over students' confidence (Newstreet, 2008). Hypothesis three: there is a significant, positive and strong relationship between learning environment and motivation towards getting actively involved into R&D-related activities. Self-efficacy represents a student's knowledge of his/her capabilities to reach a specific goal (Bandura, 1997). Hypothesis four: there is a significant, positive and strong relationship between self-efficacy and motivation towards getting actively involved into R&D-related activities. Even though the initial SMTSL questionnaire treated achievement goals and performance goals as two separate variables, this study will use achievement goals as a final, fifth variable which is defined by students endeavors to execute and complete their goals or tasks. (Midgley, Kaplan & Middleton, 2001). Hypothesis five: there is a significant, positive and strong

relationship between achievement goals and motivation towards getting actively involved into R&D-related activities.

Methodology

As mentioned before, the main goal of the study was to adapt, with consistent alterations, the original SMTSL questionnaire (Tuan et al.2005a) and Singh, Misra and Srivastava's (2017) survey, into Romanian language and to evaluate an academically and ethnically distinctive group with a slightly distinctive goal: its' knowledge and involvement into academically R&D-related activities. Moreover, the adaptation of the SMTSL was tested in a completely different age group other than undergraduate participants, that is, students of Bucharest's universities aged over 18 years old. We were interested into investigating the structure of the new adapted survey in a group of composed of different general (bachelor) and specialized (master's degree) majors.

- *The instrument*

The requirement to develop a reliable and accurate mechanism to assess students' motivation to get involved into R&D-related activities during the course of their studies was indisputable in the context of a non-innovative country with a massive lack of knowledge-oriented specialists. Documenting Romanian students' motivation into participating in R&D-related activities could allow us to develop both educational and motivational strategies in order to enhance future employee's active involvement into specialized research activities.

Previous studies used the SMTSL questionnaire in different cultural contexts and subjects (e.g. Dermitzaki et al., 2012; Singh, Misra and Srivastava, 2017) resulting in the same six or less factors and associations using both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The following study used EFA in order to confirm if the six factors mentioned in SMTSL were applying to our specific situation.

Our new conceptual framework of the survey with 45 items was structured into two units. The first unit is a representation of Lopatto's (2004) SURE Survey and contains respondents' background information as well as questions regarding R&D-related activities, career and the importance of gaining experience by having a job throughout university years or getting specialized knowledge by getting involved into research. The second unit contains items measuring motivation, achievement goals, learning values, learning environment, self-efficacy and attitude (Tuan, Chin & Shieh, 2005). Respondents were asked to express their thoughts regarding the aforementioned items on a 5-tier Likert scale where 1 meant strongly disagree 5-strongly agree.

With respect to motivation, as a dependable variable, as Singh, Misra & Srivastava (2017) suggested, we gathered 6 verified statements from the Intrinsic Motivation Inventory (IMI) which we considered suitable for our study. Similar to the independent variables used before, all the statements were measured on a five-point Likert scale, targeting subjects such as: perceived choice, value, perceived competence, relatedness, enjoyment and effort.

The favored method of data collection was the aforementioned questionnaire by the means of an online survey, the data being gathered between February 4th and April 2nd, 2019. The first part of the results was used to understand the process of perceiving the importance of having a job or getting involved into R&D-related activities during university studies. The second part was used to investigate the relationship between motivation and the factors resulted after performing EFA.

- *Respondents*

The researched collectivity was consisting of Romanian students who were undergoing bachelor and master's degree programs at the following public universities of Bucharest: The Bucharest University of Economic Studies, University of Bucharest, Ion Mincu University of Architecture and Urbanism and Polytechnic University of Bucharest. The

questionnaire was distributed to a total of 645 participants with a response rate of 47% (303 participants).
The structure of the inspected sample included 68% female and 32% male respondents, 38% were students of The Bucharest University of Economic Studies, 26.4% of Polytechnic University, 20.5% of University of Bucharest and 15.2% of Ion Mincu University. One hundred and thirty-two respondents were third year bachelor students (43.6%), 17.2% were second-year bachelor students, 15.5% first-year master students, 10.9% second-year master students, 6.9% first-year bachelor students and only 5.9% were fourth-year bachelor students. In order to process and analyze the collected information, IBM SPSS Statistics 20 software was used.

Results and discussion

- *General perceptions about career and R&D-related activities*

The introductory unit of our survey collected information regarding students' general perception about getting a full time job or orienting their energy and resources into acknowledging R&D-related activities by participation to conferences, specialized researches, summer R&D-oriented schools and other activities that will concur to the professional training of them as future knowledge-oriented employees.
Respondents were asked which activity they considered of great importance in relation to their future professional career and 45.9% considered having a part/ full time job during academic studies being the best option, while 37.3% of them considered the participation to R&D-related activities the most reliable alternative. Even so, 16.8% of the respondents did not take into consideration either of the two options.
When asked about their past participation to R&D-related activities 56.1% of them stated having no experience, while 22.1% had a one semester experience, 12.9% had a multiple semester experience, 3.6% had both semesters and a summer schools experience, 3% had both a semester and a summer school experience and only 2.3% had a summer school experience. Regarding their immediate plans after graduation, most of our respondents (56.1%) declared their intention to graduate the same or a related major master's degree while 13.9% are intending to study a different major. Moreover, 10.2% plan to work in a non-science career without further studies, 8.6% are intending to work and later on continue their studies for a master's or a PhD degree and only 8.3% were intending to get a PhD degree on a similar or even a different major.

- *Exploratory factor analysis*

Regarding the main topic of our analysis, mainly the existence of a significant and positive relationship between each of the 5 independent factors (achievement goals, attitude, learning values, learning environment and self-efficacy) and motivation as a dependable variable, we performed an exploratory factor analysis (EFA) followed by a multiple linear regression.
Regarding the instrument's factorial structure, we performed EFA using principal component analysis with the varimax rotation. As the model was verified before, our analysis was based upon the assumption that all items will be reduced to 6 factors, having Eigen values greater than 1, which showed to be valid. We performed the KMO test in order to establish the adequacy of the sampling, indicating a consistent value of .913 and a significant Barlett's test of Sphericity with *p*-value of .000< .05. All six factors explained a total 59.066% of variance, while factor 5 and 6 explained 2.896% and 2.162% of variance. The rotated component matrix was used, with a cut off point for factor loading of .4.

- *Reliability analysis*

Later on, we performed a reliability test in order to diagnose the internal consistency among each factor's specific items. Applying the criterions proposed by Nunnally (1978), we were interested to discover if Cronbach's α values ranged between the acceptable internal

consistency ($0.7 \leq \alpha \leq 0.9$) and realised that only four out of the six factors could be considered adequate, the last two factors having a poor and unacceptable internal cosistency. Even if some questions were deleted, the internal consitency was not considerably changing. Hence, we decided to perform another EFA, this time with a set of five factors to extract which explained a total 56.114% of variance. Reliability was again carried out, this time Cronbach's α values ranged from .653 to .869, the fifth factor being the only one with a value less than .7. Sharing the prior opinions of similar studies (Cohen, Manion & Morrison, 2000), we considered the internal consistency of the fifth factor loading acceptable. The new number of items (questions) from the second part of our survey, according to EFA and reliability was reduced from 37 to 26, composing a total of 5 principal factors: learning values, attitude, learning environment, self-efficacy and achievement goals.

In order to find out if our five factors have a significant and positive effect towards student's motivation of getting involved into R&D-related activities we performed a multiple linear regression test using standard regression method. Taken as a set, the aforementioned 5 factors account for 70.1% (R^2= .701) in the variance of students' motivation towards getting actively involved into R&D-related activities. According to ANOVA, the overall regression model proved to be statistically significant F (5,297) = 139.233, p<.001, R^2= .701, all five factors influence motivation towards the analyzed activities significantly. Regarding the correlation level between motivation and the five independent variables, according to Table no. 1 we determined that motivation is significant correlated with all the variables p<.05, learning values, self-efficacy, learning environment and achievement goals having p <.001 while attitude had a p<.029. Furthermore, in order to confirm the hypothesis, we need to determine if all of the independent variables are highly important in explaining the variance of our output variable.

Table no. 1. Coefficients

Model	Standardized Coefficients	t	Sig.	Collinearity Statistics	
	Beta (β)			Tolerance	VIF
(Constant)		.094	.925		
Learning Values	.512	12.728	.000	.621	1.609
Attitude	.108	2.996	.003	.772	1.295
Learning Environment	.123	3.408	.001	.771	1.296
Self-efficacy	.232	6.185	.000	.717	1.395
Achievement goals	.307	8.880	.000	.841	1.190

Note: Dependent Variable: Motivation

Source: Authors' own research

Table no.1 showed that learning values proved to exert a significant and strong influence on the motivation towards getting involved into R&D-related activities (p=.000 and β=.512), hence proving the first hypothesis. The relationship between the independent variable attitude and motivation was also found to be significant and positive, but weaker than the prior mentioned (p=.003 and β=.108), proving partially the second hypothesis. The same situation can be found with the third factor of our model, learning environment, which exerts a significant, positive and slightly high influence over motivation towards getting involved into R&D-related activities (p=.001 and β=.123) confirming the third hypothesis. Our last two independent variables, self-efficacy and achievement goals are significantly,

positively and highly influencing motivation having p=.000, β=.232 and p=.000, β=.307, therefore confirming the last two hypotheses.

Conclusions

According to the European Innovation Scoreboard (2018), Romania has been the EU most modest innovator, having firm investments and general innovations as the weakest innovation dimensions, with human resources involvement into R&D activities below the EU's average (EIS, 2018). Taking into consideration this disquieting situation, we were interested to apply and develop a reliable tool in order to investigate the main factors that lie behind students' motivation towards getting involved into R&D-related activities and into becoming knowledge-oriented professionals.

Our analysis started as an application of Tuan's et al. (2005a) SMTSL questionnaire in Romanian language, with certain alterations according to our goals, and a further test of content and construct validity of the model by the means of EFA and reliability analysis.

Even though we started from the assumption that all the six independent variables will prove to be internal consistent, only five of them revealed the hypothesis having consistent values of factor loadings. Therefore, in order to improve the new model (with alterations) we based our study on five hypotheses which later on, proved to be valid. However, after processing the results, in order to increase the internal consistency of the five scales, some questions were eliminated in order to improve the alpha coefficient. After performing multiple linear regression, our findings suggested that students' motivation towards getting involved into R&D-related activities is positively influenced by the following variables: learning environment, learning values, self-efficacy, achievement goals and attitude.

The first variable, learning values, displayed a strong, positive and significant correlation with motivation towards getting actively involved into R&D-related activities, detailing the fact that learning R&D, applying the information in both professional and daily life, cultivating new skills and becoming capable of solving different problems represent highly motivating variables for the future professionals. The second hypothesis regarding attitude's level of significance and importance towards motivation, reflected a significant, positive but weaker influence than all the other four variables. In this case, attitude portrayed the individual's intent regarding his/her ability to cope, understand and apply R&D-related information or techniques, and the willingness to make efforts when needed. Hence, in this case, attitude reflected a reduced impact than predicted. The learning environment, which in our case was defined by the built relationships between fellow students, with teachers and even with the university, reflected a significant and positive association with motivation. Hence, student's group membership, the relationships built inside that group and mostly information exchange, will motivate him/her to become more involved into R&D-related activities. Also, professor's attitude regarding facilitating and helping a student on the research process will also reflect onto student's motivation (Beswick, 2006). Self-efficacy, as a variable which illustrates the inner confidence of a young researcher to perform well and be comfortable with R&D-related subjects and activities, was significant and highly correlated to motivation, which means that a future professional is willing to get involved into R&D-related activities if he/she is certain about the knowledge he/she possesses. The last independent variable of the study, achievement goals, illustrated in our scenario, details the goals a student engaged in R&D-related activities is pursuing, like university appreciation, better grades or even competition prizes. Moreover, if student's efforts are being formally recognized by the university, he will be actively involved and will considerably increase his willingness into getting more involved in such activities. Therefore, the fifth hypothesis is confirmed by a significant, positive and strong effect over motivation towards participating into R&D-related activities.

With regard to the existing internal correlations between the five variables, we observed

high correlations between learning values with achievement goals and self-efficacy, which could make sense if we are considering that a student's goal regarding R&D involvement could only be achieved by having a concrete outlined perspective and knowledge about itself capabilities.

As far as students' general perceptions about career and R&D-related activities go, almost half of the respondents considered that acknowledging R&D information from activities performed at university will not contribute to their professional training for jobs or other professions of the future, most of them feeling that the information they are getting is, unfortunately, not up to date. Moreover, when asked about their participation to R&D-related activities, 170 of the respondents did not have experience at all and were not interested to find more about participation to a research, a conference or even a small study group. This result showed that, even though they had different academic background, their overall attitude and perception was quite similar. In the end, according to EIS (2018), since 2007 the number of Romanian students interested in doctoral studies has decreased by 50%, a worrying situation being illustrated by our respondents whom showed only a 3% interest in becoming skilled professionals by the means of the aforementioned studies.

To conclude, this study could be considered as an adjuvant for prior SMSTL-related studies, illustrating that motivation towards getting involved into R&D-related activities is influenced by specific variables, but also, the small found discrepancies may reveal that different cultures, ages and even academic background could interfere with the model's structure (Pintrich, 2003). Future researches could explore student's motivation towards getting involved into R&D in relation to their university affiliation, gender or even academic background. Investigating the variables that affect students' motivation in a specific area of expertise might be the resource of effective information to both university teachers and business managers or entrepreneurs, in order to create adequate strategies for increasing the professionals' (students or employees) competencies and stimulation of interest into absorbing new information according to their majors or activity fields. Hence, according to specific strategies, investments into human capital might break all our national innovation barriers and become a mandatory input in the new knowledge economy.

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GLOBAL BUSINESS ENVIRONMENT ISSUES IN THE DIGITAL ERA

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Abstract
The last decades have been followed by technological development cycles, which have affected in different ways the evolution of the business environment, the way that companies operate and the entire society. The current environment in which companies engage and concretize business has become increasingly complex and ambiguous, facilitating the emergence of new challenges for business practices, interests and business initiatives.
The digital transformation that takes place globally, adapted to current realities, is based on disruptive technologies that support it: Big Data, The Internet of Things, Mobile Internet, Cloud Technology, Automation of Knowledge Work. Although the business environment and companies are working to adapt and conform to ongoing digital transformations, there are a number of challenges and barriers that slow their progress.
The purpose of this paper is to highlight the challenges that the business environment and the companies encounter in the Digital Era, which appeared against the backdrop of the development of disruptive technologies.

Keywords: *Digital Era, Business Environment, Globalization, Disruptive Technologies.*

JEL Classification: F23, F62, O33

Introduction

The last decades have been followed by technological development cycles, which have affected in different ways the evolution of the business environment, the way that companies operate and the entire society . The 1990s have been characterized by the progress of the means of communication which was available for organizations. Through the development of the Internet and the access of the general public, an impetus has been generated in the field of technology, representing an advancement, which implied a series of changes in applications, operating systems, etc.
Digital transformation, also known as digitization, is a versatile concept, interpreted differently by professionals and academics. Digital Transformation implies both the adaptation and the use of the technologies (Internet of Things, Big Data, Cloud Technology, Automation of knowledge work), but also the modification of some business elements, including the model, strategy, processes Business, culture and organizational structures (V. Arribas, J.A. Alfaro, 2018). Some authors describe it as "the changes that digital technology

causes or influences in all aspects of human life" (Stolterman & Fors, 2004), but professionals believe that "digital transformation is the radical development of the opportunities of the Internet "(Ludovic Cinquin, CEO of Octo France, a company specialized in supporting companies in their digital transformation). Digitalisation also implies "the use of technology to radically improve performance or reach of enterprises" (Westerman et al, 2011).
The magnitude and speed of this transformation , followed by ICT (Information and Communication Technologies), has led some authors to use the term "acceluction" (Bounfour, 2016). It highlights the massive expansion of value creation by business and companies, as well as digital acceleration that produces immediate and visible changes, within the company . In this process, business and present companies need to reevaluate their processes and their way of interacting with stakeholders as a result of high pressure from changing consumer behavior, from entering new competitors, and capitalizing technological tools in the areas of productivity and innovation.
The purpose of this paper is to highlight the challenges that the business environment and the companies encounter in the Digital Era, which appeared against the backdrop of the development of disruptive technologies. It is necessary that the actors of the business environment understand the nature of these transformations (to what extend the companies are affected, the budge that should be allocated) in order to find the best strategies to counteract the negative effects of the digital transformations.

Main issues of the global business environment in the digital era
In order to accomplish the article, the method of research used was that of the theoretical research of specialized articles, using quantitative analysis. I have presented the process of digital transformation and analyzed the main disruptive technologies to see the level of technological development and the main technological trends. Subsequently, the main challenges facing the business environment were presented using the synthesis and the logical research method.

Digital transformation: components and levers in the business environment
The current business environment characterized by volatility, discontinuity, rediscovery of competitive advantages, fierce competition, emphasis on finding sustainable and environmentally friendly solutions. Especially the enormous flow of information, leads companies to find new approaches and solutions to achieve success as well as maintain it. The current environment in which companies engage and concretize business has become increasingly complex and ambiguous, facilitating the emergence of new challenges for business practices, interests and business initiatives. Digitalization has succeeded in making its mark on business, starting with identifying new technological trends and customer profiles, as well as searching for solutions for designing and generating products, marketing methods, informing and satisfying customers. As far as technology is concerned, digitalization reconfigures the framework and conditions needed to achieve business performance and success. Under these conditions of uncertainty, acceleration of transformation and digitization, new challenges arise for the business environment.
In order to maintain their competitiveness and relevance in the markets, companies / organizations need to adapt to the digital age and adopt new technologies. This transformation has become an essential condition for the development of any business, which can lead to increased revenue and productivity, as well as customer satisfaction. For a better understanding, the process through a company is going in the digital era, Unruh and Kiron in 2017, had made a digitization scheme. Thus, the first stage involves the transformation of services / products into a digital format, as well as the concomitant inventions resulting from the digitization process. The second stage is closely related to the

first stage because the digitized products are used, but includes the step in which new processes and business models develop. The last step, digital transformation is to restructure economies through new processes and digital models, technology being integrated into the social life of citizens.

The phenomenon of digital transformation consists of three components: automation, dematerialization and restructuring of intermediation models (E. Baudoin et al, 2016). These three components are intimate and work together, as follows: *the process of automation* - this process is built on the effects of increasing performance derived from the use of production factors: capital and labor productivity, raw material and energy productivity; *the dematerialization process* - involves the emergence of new channels of distribution and communication that transform or replace physical networks, shops, offices, so that transaction costs and marginal production costs are reduced and *the re-intermediation process* which involves the reorganization of effects on the value chains.

The entry of new competitors requires the remodeling of business and brokerage models, especially in the aspirations of the role of new assets and people derived from data.

The digital transformation that takes place globally, adapted to current realities, is based on several key levers that support it: Big Data, The Internet of Things, Mobile Internet, Cloud Technology, Automation of Knowledge Work, etc. **Big Data** represents the large amount of unstructured and structured data, that are captured and process at a high speed (Lanei, 2001) provided to a business on a daily basis. Big Data constitute "the mother lode of disruptive change in a networked business environment"(Baesens et al., 2014). Their importance is not in the volume of data, but how the organization uses the data relevant to it, so that, properly analyzed, can lead to the right decisions about the direction and orientation of the business, as well as to the determination of strategic moves. In this business environment, performance is guided by the ability to properly and continuously use existing and new data sources, facilitating the identification of new opportunities and modeled business.

Automation of knowledge work represents intelligent software systems that can perform knowledge work tasks involving unstructured commands and subtle judgments (McKinsey Institute, Disruptive Technologies, 2013). Progress in artificial intelligence and mechanical learning helped to automate tasks of knowledge workers, functionalism being considered impossible by the engineers. **The Internet of Things** –represent a global network (Aggarwal, R., Lal Das, M. 2012) which spreads in an accelerated way, involves the integration of drive devices and sensors into cars or other physical objects (environmental monitoring, automation of close contacts - human-machine interactions and car-machine interaction) to be connected businesses, allowing organizations and companies, especially in the public sector, to optimize performance, manage assets, and create new business models. This allows automation of tasks, making possible innovation based on new processing methods and measurements. So, the Internet of Things can "create an economic impact of $ 2.7 trillion to $ 6.2 trillion annually by 2025" (McKensey Institute MGI-Disruptive technologies, 2013). **Mobile Internet.** Mobile Internet technology has advanced rapidly in recent years, adapting its interfaces and new formats to market requirements, including portable devices. Its applications are widespread in the enterprise as well as in the public sector, which allows efficient service delivery as well as opportunities to increase labor productivity. In the case of developing countries, the Mobile Internet allows people to get in the connected world. **Cloud Technology** - Through cloud technology, any service or application can be delivered via a network or on the Internet without local storage. The Cloud stores information (from simple media streaming searches to online storage of personal data and information - books, music, photos) as well as improving the IT economy for governments, companies to ensure greater flexibility and fast response capability, to be able to create new business models(McKensey Institute, MGI-Disruptive technologies, 2013).

Blockchain via distributed ledger technology is a database independently updated by each user within a network, and the recordings are made in an independent manner, so the security and integrity of the data in the record chain is protected by using mathematical algorithms. This way is kept a complete record of operations included in the dataset (European Central Bank, 2017). Blockchain is defined as: "a public ledger containing information on every transaction made within a P2P system" (Nakamoto, 2008). The underlying blockchain criteria (Leloup, 2017, p.15) are: Decentralization and disintermediation: The blockchain is not controlled by any central authority; Consensus: The transactions are rejected or accepted as a result of the outcome of the blockchain consensus and do not represent a decision of a central institution; Immutability: the information in the system cannot be deleted or modified and Trust and transparency: transactions are shared operations.

Issues in the Digital Era

Although the business environment and companies are working to adapt and conform to ongoing digital transformations, there are a number of challenges and barriers that slow their progress. The challenges we encounter are not necessarily new, but require adaptation based on studies both inside the company and at the business level. Thus, companies face difficulties from the perspective of business participants and from the perspective of the business environment. In the first category we identify technological and human issues, the lack of budget required for the digitalization process, passive risk attitude, reduced agility and the deficit of abilities and talent required in this era.

The Technological issues. Digital technologies contribute to the process of transforming operating and organizational methods across companies, businesses, automating processes and changing professional and project practices. The main factors that ensure success or , on the contrary, can represent real challenges in the digital age are the ability to align their technologies and uses with the company strategy, identify the main algorithms that can give meaning to the information gathered, and access to the skill needed to achieve a coordinated activities, as well as the mastering of external and internal data sources. The issue has been represented by the information technology governance concept that approves the organization of IT and can support and develop the organization's strategies and objectives. The central aim is that these digital technologies optimize "value chain processes, while taking into account risk management and performance techniques" (Bounfour & Fernandez, 2015). There are also questions about the impact of technologies on the organization and the business environment, how digital transformations should be dealt with and how the security of computer systems that are progressing in digital transformations can be guaranteed.

Human issues. Human activities, both in factories and companies, will become more dependent on digital mechanisms in the future, and in this context, people's problems will need to be reconsidered(Emmanuel Baudoin, et al, 2016). It is necessary to identify the allocation factors of the digital technology in order to work on the implementation strategy. But there are situations where many projects are not endorsed or successful because employees, managers are not familiar with these technological trends, are afraid to use a new system or do not have digital capacity or skills. All of these factors hinder business activity and create problems of adaptation in the digital age. To address these issues, it is necessary to balance the factors such as:

- using and acclimating digital technology;
- company / organization staff will transfer skills and knowledge to their younger colleagues who will turn those skills into digital technology, and continuing innovation remains competitive.

Lack of budget required. In the current context, companies need to devote time and material resources to the process of innovation and infrastructure upgrading to keep them at the desired level. There are studies showing that organizations that allocate a small amount are in the process of adapting to the new business environment and the digital age, hampers their development and notoriety in the markets they operate (ZK Research White Paper, 2017).

Passive risk attitude. Companies, organizations, businesses in the global business environment need to adapt to digital transformation to develop or survive in this era. However, this adaptation can become intimidating, as well as the allocation of material resources on new technologies and uncertainty about return on investment (ROI). This situation is encountered in cases where a database and process analysis capabilities are not available before and after implementation. Thus, this lack of knowledge increases the level of risk that organizations encounter in the process of digital transformation.

Reduced agility - is a constant concern for organizations and companies because they need to experiment quickly and introduce new services so they can maintain their position and competition. In order to achieve the level of agility desired, attention should be focused on the upgrading of the underlying infrastructure, as IT and legacy infrastructure processes are too inflexible in achieving the appropriate level of dynamism needed by businesses in the digital age.

Deficit of abilities and talent. There are numerous reports showing that over half of the companies do not have trained staff or the right technologies needed to develop. A real danger is the accelerated pace of technological innovation, which emphasizes the complexity of this process.

From the point of view of the business environment, we identified the economic issues, social responsibility, legal and cyber-security issues.

Economic issues. Digital technologies have transformed in depth the economic models of the industrial revolution and the positioning of the consumer or user, promoting new organizational methods. In the current economy, based on knowledge, companies identify, define and develop digital assets. A problem intervened when an organization has to identify the digital assets it owns and to properly improve them. **Social responsibility issues** are closely related to digital transformation, as there are voices warning that risks can be major, especially if it is about destroying jobs (McAfee, 2012) or transforming the web that can create entropy at the company level, the business environment and the environment.

Legal issues. Establishing a safe and trustworthy environment in the online sector is an essential requirement for the economic development of organizations and the business environment so that personal data of customers and company data are protected. In the European Union there are regulatory procedures for the business environment in order to protect and develop harmoniously in relation to market trends and new technologies (Digital Economy and society)(EU, 2016):

• introducing rules covering all electronic communications networks & services
• ensuring basic broadband for everyone in the EU
• encouraging competition by preventing old national telecom monopolies from maintaining a dominant position with regard to high-speed internet access services.

The two Payments Service Directives (PSD2) and The General Data Protection Directive also aim at creating a secure business environment, fostering fair competition and ensuring security against fraud and cyber-attacks.

Cyber-security Issues. Cyber-security represents the collection of tools, policies, security concepts, security safeguards, guidelines, risk management approaches, actions, training, best practices, assurance and technologies that can be used to protect the cyber environment and organization and user's assets." (ITU, 2009). In the global business environment, new threats to digital security have arisen because current digital technologies - iCloud, Internet

of Things - create new opportunities for hackers to exploit company vulnerabilities. There is also a lack of coordination in companies regarding the infrastructure and the security, which results in technological stagnation and increased vulnerability to cyber attacks (Messmer, 2013) Thus, the need to create a secure digital space and data protection (GDPR) (EU Parliament, 2016) must represent the main objective organizations, even if it is a recent problem, but with real implications for all participants. Today, electronic payments have become the new system of payment systems and payment instruments that perform the electronic value transfer. The efficiency and ease with these values are transferred creates a number of benefits for business and businesses, but there are many challenges in terms of safety and law enforcement. There are technologies that allow such systems to make transactions quickly with bank transfer systems and under anonymous title. However, there are many weaknesses that need to be addressed and resolved so as to prevent, detect and combat money laundering and illegal financial transactions, and the vulnerability of systems to cyber-attacks.

Cyber-attacks can have major consequences for a company as they will affect the image of the organization from the perspective of consumers and partners, generating financial, legal and reputational difficulties.

companies are not aware of the major risks they are through the cyber attacks, and there is concern regarding the proper security of information (M. Uma and G. Padmavathi , 2013). From a financial point of view, substantial losses can be caused by: money theft, financial information (bank details) and corporate information, interrupted transactions, loss of contracts and last but not least, costs related to repair of devices, networks and affected systems. The current legislation governing privacy and data protection requires that each organization / company properly manages the security of personal data, both to customers and partners and employees. When these data are deliberately or accidentally compromised without a system of security measures tailored to these issues, there will be regulatory sanctions and fines. In terms of reputation, companies may suffer, as these attacks will affect the trust they have built with customers and with their customers and partners, causing major sales, customer losses and a drop in profits(Jason West et al, 2018).

Cyber-laundering. The Internet offers a wealth of possibilities and conveniences for individuals, companies, in carrying out current activities, but also facilitates the occurrence of illegal activities. As a result, money laundering has typically adapted to technological realities, acquiring the name of cyber-laundering. This operation involves laundering money in cyberspace through online transactions. In practice, cyber-laundering is the conventional practice of money-laundering in three stages: placement, layering and integration. Compared to the traditional money-laundering method which represents the process by which a person hides or conceals the identity or the illegal origin of income so that it appears to have come from other sources,,(Report IMF, UNODC, 2005), cyber-laundering offers a wide variety of tools for offenders: (cost reductions, quickness, ease of use) that can carry out these transactions from anywhere as long as they have a computer and a connection at the Internet. This phenomenon affects the business environment, especially from the first lack of concrete legislative and applied legal regulations, so that these offenses are stopped.

Conclusions

Digital transformation and innovation imply a change in the functioning of society and of the economic, business, industrial, technological, etc. environment. These transformations are visible in the way companies are organized according to their field of activity, products, services and uses. This phenomenon is in the process of developing and adapting to current realities, such as: the spatial dimension (the omnipresence of mobile technologies), access to

people / groups of people / society (the Internet removes the restrictions on audiences) and the amount of time Internet cancels temporary / temporary barriers).
The Merger of the digital and physical world suposes major implications for privacy, security and the way companies are organized and work. The global business environment will become more and more unpredictable and challenging for companies, and it is necessary to strike a balance in terms of concrete legislative and applied regulations in the field of personal data (both for citizens and businesses) and security of the digital environment, in order to reduce cyber-laundering, anonymous financing of terrorism and other illegal activities that can have major consequences for society.
The progress of the new technologies will continue to transform the business environment and the leaders, policymakers from the political environment and individuals must understand these changes and adapt to them in order to behave and make decisions accordingly. The pressures in the business environment will grow and intensify as a result of the evolution of technology, the demands of consumers generated by access to information. As mentioned previously, the enumeration technologies have a major potential in the process of improving citizens globally, but at the same time there may be undesirable side effects. For example, Cloud computing and Mobile Internet generates risks regarding security and privacy violations, and in the case of The Internet of Things, cars and controlled objects on computers can be broken, exposing refineries, factory, Supply chains, transmission networks and power stations.
It is also necessary to carry out impact studies on human activity in the digital age and to what extent it is affected with digital transformation, Human issues, along with the allocation of a reduced budget to the innovation and modernization process and the ignorance of technical problems will make it harder to adapt and develop in the digital age.
The result of our study presents the challenges with the greatest impact in the global business environment, to what extend are the companies affected and correctly identified according to each company and the field of activity they operate in. These problems can become real opportunities. Business Leaders, stakeholder and policy makers need to be prepared, because technology evolves in an accelerated way, and the world turns to Internet speed.

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TELEWORKING – A NEW FORM OF WORK DEVELOPED IN THE CONTEXT OF GLOBALIZATION

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Abstract

The complex process of globalization has been expanded globally it did not run out of effects either the sphere of individual work relationships, especially regarding the classical structure of organizing work.

The rapid changes in the field of production caused by all automatic processes and methods allow reducing cost and time of data storage. European countries have been forced to cope with the high level of unemployment and with the imbalance which has been created on the labor market by spreading the technological means of communication, thus economies could not generate full-time jobs for all employees. In the work field, the democratization of technology culminated in major changes in the organization of work and human resources management.

The changes in the way of organizing the production and the management of human resources have determined resulting in various employment choices either in the form of atypical contractual arrangements or in the form of ways specific to outsourcing work. The Mechanism of globalization brought the development of a new "networking", work being carried out under the computer assistance system, increasing the possibility for the employer to implement work programmes without any geographic barriers.

We are witnessing a fundamental change in the paradigm of the standard employment contract, the structure of employment relationships evolving to a different typology. The purpose of this paper is to present not only content, notion, specific European regulation, dissemination area, but also some comparative law elements to identify how European states perceive telework programs.

Keywords

Teleworking, Globalization, Labour market, Labour law, Technology

JEL Classification

F62, F66, E24, J41

Introduction

The complex process of globalization has been expanded globally is characterized by important changes in the economic, social, political, technological environment, but also by trends for upgrading, knowledge, broad contacts between people (Intelligence SRI, 2019), with implications for all aspects of human life – it did not run out of effects either the sphere

of individual work relationships, especially regarding the classical structure of organizing work.
Referring to the major tendency of the contemporary development of computed technologies, big European companies have been interacted with various situations.
Thus, the rapid changes in the field of production caused by all automatic processes and methods allow reducing cost and time of data storage, aspects that were undoubtedly reflected on the basic components of the labor market - supply and demand for work. As a result, European countries have been forced to cope with the high level of unemployment and with the imbalance which has been created on the labor market by spreading the technological means of communication, thus economies could not generate full-time jobs for all employees.
The perspectives of globalization have also been reflected in the field of competitiveness and of the increased level of insecurity among firms, which faced special challenges related to the organization of work in order to maintain economic efficiency. In reply to the new challenges of everyday life, only companies that have accepted certain strategies for adapting to these global changes, that have become able to remain competitive - for example by providing employees flexible work schedules (Bajzikova et al., 2013) - have managed to survive to the increasing demands of the customers.
Understanding these issues is particularly important as knowledge and skills of various categories of workers are no longer the only competitive advantage of firms. Judicially, it was also found that "knowledge" is a good at the "discretion of the employee" who decides whether and in favor of which employer uses his professional expertise (Bajzikova et al., 2013). Nowadays, it is not unusual for employers to invest constantly in training and professional qualifications for the benefit of employees, thus increasing career development opportunities and strengthening this "knowledge".

Globalization - an important factor that has influenced the use of flexible work schedules

As we have already mentioned, the system of globalization, tackled through the many levels of the society, inevitably reaches the field of labor markets. The worldwide development of information technology is perhaps the most vivid way in which globalization is manifesting in modern society. This "democratization of technology" (Catalin Turliuc, 2008) has opened the way for the liberalization of services and goods, the free circulation of information in all spheres of society, so that people can communicate freely without constraints, anywhere, anytime.
In the work field, the democratization of technology culminated in major changes in the organization of work and human resources management. From this point of view, it is clear to some authors (Dimitriu, 2016) that the changes in the way of organizing the production and the management of human resources have determined "the activity through small, flexible and decentralized units, rather than by large and bureaucratic units", resulting in various employment choices either in the form of atypical contractual arrangements (fixed-term employment contracts, part-time employment contracts, temporary work contract, job sharing contract, etc.), or in the form of ways specific to outsourcing work (teleworking, voucher based work, on call, etc.).
The Mechanism of globalization brought the development of a new "networking" (Blanpain, 1998) phenomenon in the work relationship, work being carried out under the computer assistance system, thus increasing the possibility for the employer to implement work programmes without any geographic barriers. As stated in the specialized legal literature (Blanpain, 1998) under the spectrum of the notion of "networking", today and tomorrow workers can work in several networks depending on its willingness, within the framework of shorter or longer projects and under a contract. Also in the literature of employment

relations, the thesis was consistently validated that "most modern organizations have started to have a number of full-time, permanent ("an inner core") employees who perform the key functions of the enterprise surrounded by the concentric circle of part-time, occasional, self-employed contractors, distance teleworkers, temporary agency workers, or others who is needed (England, 2000) emphasizing the same perspective of the fundamental change in the structure of the employment relationship, delimiting 2 employee typologies - "an inner core" and those non-standard or atypical (usually assimilated marginal to the company) (Dimitriu, 2016). Starting from such premises, labour/working relations have become increasingly free, less controllable and controlled, as well as less collective (Dimitriu, 2016).
In a brief speech, globalization removes the social partners from the prototype model of employment, from the essence of the traditional way of production. We could say that through the current diversity of the forms of work organization, we are witnessing a fundamental change in the paradigm of the standard employment contract, the structure of employment relationships evolving to a different typology (Marica, 2016).
Under the conditions of globalization, it can be firmly argued that in most economic regions of the world, the standard employment contract deeply associated with industrialization (Supiot, 2001) is gradually being replaced by new non-standard or atypical forms of work (Bercusson, 1996), which have very opposite trends to the reality of the industrial age (ie tendencies towards diversity, renouncing uniformity, splitting working time, providing services from anywhere, lack of permanence and job security, social security rights, etc.) (Supiot, 2001).
All these aspects are part of the features of the new employment system, being practically the most obvious elements of the evolution of globalization. However, we will not insist on all the atypical modes of work that have proliferated in the area of individual work relationships in recent years as a consequence of globalization, precisely because, on the one hand, we are dealing with an inexhaustible list of new practices and on the other hand the present paper aims is to identify some particularities related to the remote telecommunication system. So, we considered an approach that would include not only content, notion, specific European regulation, dissemination area, but also some comparative law elements to identify how European states perceive telework programs.

Teleworking

The most important role in creating and developing the atypical way of organizing work on the teleworking system is precisely the contemporary global context. The Teleworking Individual Contract appears to be an important expression of flexibility in the context of individual labour market relationships. The increased need for flexibility in working relations seems to be supported by both sides of the labour law relationship. On the one hand, from companies that perceive telework programs as a means of reducing space and operating costs, and on the other hand from the perspective of workers, Teleworking programs are important tools to ensure an optimal balance between personal and professional life (Dimitriu, 2011).
Besides the need for flexibility, other elements of social origin have become essential in the development of Teleworking programs. Thus, the proliferation of means of communication through information technology comes in the context that most urban centres in the world are confronted with a congestion of internal traffic not neglected for the business environment. The daily shift to the workplace, which has become a corollary for both companies and employees as a result of crowded traffic and parking space crisis, brings costly time and money. Under these conditions, the technological progress and the development of the informational means of communication allowed the organization of remote ways of working, which contributed to breaking the space-time limitations that the contemporary individual faces, avoiding the need to travel daily for work (Salomon,1984).

It was considered that behind the work options on the teleworking system, there are in fact important changes in lifestyle. And lifestyle changes are major decisions that "are far more profound than a simple change in the workplace (Salomon,1984).
Regarding the concept of teleworking, it must be said that there are fundamental reference standards of the European Framework Agreement on telework concluded in Brussels in 2002.
Starting from this fundamental document, teleworking is defined in Article 2 (1) as "that form of organization and / or achievement of work using information technology in a contract or employment relationship where the work that might be carried out equally in the places of the employer, is done outside them on a regular basis ". Disposals of art. 2 par. (2) of the Teleworking Framework Agreement establishes that the person who performs the work under a teleworking contract is called "teleemployee".
The Teleworking Framework Agreement therefore contains minimum disposals and principles for all other Member States that implement the individual telework contract internally, either by law or through collective labour agreements.
Telework is rather a specific way of providing work, being recognized by legislation in Belgium, the Czech Republic, Hungary, Luxembourg. Other countries have also allowed telematics programs to be implemented through collective labour agreements concluded at national or sector level, such as France, Denmark, Greece, Italy, Spain, Sweden (Dimitriu, 2016*)*.
From the content of the definition, as set out in the Teleworking Framework Agreement, it can be seen that the most plausible telematics space could even be the home of the employee. However, this does not exclude any other place where the employee may have access to the necessary IT and where appropriate conditions for data protection, safety and health of work could be ensured.
Sometimes we are witnessing different take-ups of the concepts used in the Telework Framework Agreement by the Member States. Examples are the Hungarian regulations (Kiss, 2017) which define telework as "that activity performed on a regular basis elsewhere than the employer's headquarters and not belonging to the employer, by computer or other means of information, the work product being sent by electronic means ".
We also find in France an atypical telework program, in the sense that teleworking is a part-time activity, and the employee will divide the working time between the conventional workplace and the telework location, which is also considered as a reference for other systems right (Marica, 2018). A system of private law regarding to telework is also in Slovenia (Marica, 2018) where if the organization of telework is done at home, the employer has the obligation to notify the Labor Inspectorate, which has the power to control the work place where the teleworker is going to perform his activity so that his health is not endangered. We also encounter situations - as in the case of the Netherlands – where legal regulations limit the carrying out of teleworking activity, only in the form of homeworking, and there is no possibility for the teleworker to operate elsewhere than the residence of the teleworker.
Eloquent in terms of the particular features of Teleworking is the regulation in Germany, where tele-employees are sovereigns on the establishment of working time without the employer's interference in any way. However, the content of the service duties and the determination of the software to be used by the tele-employee are the responsibility of the employer (Waas, 2017).
Also, Romania has recently made progress in the field of labor relations through the adoption of Law no. 81/2018 on the regulation of teleworking activity, thus allowing domestic companies to offer employees telework programs. Adopted, however, at a distance of 16 years from the European regulation, Law no. 81/2018 on regulation of teleworking

activity contains ambiguous, restrictive and incomplete provisions in relation to European norms.
Without insisting, we only mention that "the employee, who regularly and voluntarily fulfils his or her specific to his position, activity, or job using information and communications technology at a place other than workplace, at least one day per month, is in the execution of a teleworking activity, according to art. 2 lit. a) of Law no. 81/2018 regarding the regulation of the teleworking activity.
Although the standard does not establish a list of activities where it is possible to conduct teleworking activities, only activities involving the use of computerized technologies are envisaged.
In addition, telework programs in Romania can be materialized only through the agreement of both sides of the legal employment relationship, and only on the basis of the quality of the employee (this kind of activity is not allowed in the public institutions) (Teleoacă Vartolomei, 2018).
In terms of spreading, in Europe, 5% of workers were involved in home telework programs in 2000, which rise to 7% in 2007, with small variations between countries due to cultural factors (Aguilera et al., 2016). For example, in France, less than 6% of the employed workforce is involved in teleworking working contracts (Aguilera et al., 2016).
Domestic and teleworking practices are more widespread in Germany, where 4.7 million employees (nearly 13% of the workforce) worked regularly or sporadically at home in 2012. At the same time, it was reported that 57 % of companies in Germany, active in information and computing technology, offered in 2013 their employees the opportunity to work from home, but only 12% of employees understood to use this privilege (Sârbu, 2015).
A fulminating development in the field of remote work is recorded in the USA, these forms of work being very popular in the labour market. Some studies (Timsal and Awais, 2016) show that the US labour force will increase in the coming years from 96.2 million in 2015 to 105.4 million in 2020, meaning that it will account for almost 72.3% of the total force in 2020 work in the US. Statistical data at European level puts Romania in the European Union's queue for distance work compared to other countries like Finland, Denmark, the UK or Belgium, where more than a quarter of employees opted for remote work alternatives, which reveals that in Romania this phenomenon is poorly developed.

Conclusions

Looking ahead, given the dynamics of the economic, social and informational environment, as well as the positive impact on the flexibility inherent in this specific mode of work, it is also expected that in Europe the distance work contracts will be among the most important forms of atypical employment.
Under these circumstances, regarding to changing the paradigm of the individual labour contract in the sense of encouraging labour-intensive forms of work as diverse and as flexible as possible, the attempt of companies - in Member States where teleworking is still poorly developed - to provide employees with teleworking programs, could become an unknown incursion. This is why there is still a need for extensive studies on telework agreements, articulating the implications that they suppose, from regulatory, comparative and utility studies of teleworking, both in the company's and workers' plans.

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WHAT DO MANAGERS SAY ABOUT CSR? A QUALITATIVE APPROACH

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Abstract
Corporate social responsibility (CSR) is a largely debated, yet often contradictory concept. Important developments in the area of engagement of firms in socially responsible behaviors are driven from practitioners themselves. There are several international organizations promoting CSR standards and good practice models. Consequently some definitions and theories are based on practitioners' opinions. Romanian analyses are limited in providing narratives of managers regarding social responsibility of the firms coordinated by them. In this paper we investigate social responsibility contributions of small and medium enterprises (SME) in Bihor County, Romania. Previous research proved that the intensity of social involvement is explained by a proactive attitude of managers of SMEs towards the role of business sector in providing welfare. We explored further the motivations and attitudes of managers of socially active SMEs in order to provide an in-depth perspective of their profile. For this aim qualitative methods were used, the authors of this paper conducted 10 face-to-face interviews with an average duration of half an hour. Through these 10 interviews we have identified three motivational profiles of managers engaged in CSR: feeling of duty, pragmatic and opportunistic. Such research fills in the gap regarding CSR at the level of SMEs, a level that brings new insight in the understanding of the mechanisms that trigger such behavior. Future research should extend such qualitative approach and integrate more input from different economic sectors and firms of different sizes.

Keywords
CSR, SME, managers, interviews.

JEL Classification
M14

Introduction

Social responsibility of companies, large, medium or small, is a important topic for both practitioners and academics. Even considering the critics of this dimension of actions for firms as fashionable, it is hard to dismiss it entirely. Social pressures from professional organizations, along with the media coverage of "socially involved" companies, increased the awareness regarding CSR (corporate social responsibility) for all firms.
In Romania, as previous studies have showed, social involvement of enterprises was rather imported through multinational companies (Baleanu, 2011; Ilies, 2011). Nonetheless, mimetic or not, the phenomenon grew along with academics attention to it. Bottom-up approaches are still rare, at least as it is reflected in Romanian literature on the topic, and this is a gap we would like to fill with this and consequent research.

It is beyond the scope of this paper to argue for or against CSR in general or specifically in SMEs in Romania. We base our investigation on the premise that SMEs undertake social responsibility actions (Saveanu et al., 2014) and there is a high impact of the understanding of managers regarding the role of businesses in providing social welfare on the propensity of these actions (Saveanu et al., 2019). Starting with this, and based on the literature regarding motivations for CSR, we investigate the motives along with the outcomes (type of actions organized).

Theoretical overview

Corporate social responsibility (CSR) is still an area of study and practice where despite the extensiveness of approaches there is a lot of confusion (McWilliams & Siegel, 2011; Garriga & Melé, 2004). Starting with Carrol (1979), yet not ignoring previous argues for CSR, scholars have focused on: what constitutes CSR, action or strategic approaches of it, why (if at all) companies should be involved in CSR, how CSR can be explained given the diverse forms it can take. More, studies on CSR reflected at different levels: multinational corporations, large enterprises, SMEs, national or international, organizational, link with sources of legitimization of the concept. Extensive literature is also devoted to the limits of CSR in general or some levels.

In our study we acknowledge that this diversity of approaches of CSR concept is also due to its different theoretical paradigms (fig. no. 1). As we show in the following figure, we consider that CSR has developed based on, and in some cases overgrew, distinct approached: business ethics, stakeholder management and sustainable development. There are many overlaps between these approached and consequently aspects such as motivations are common for all. However some misunderstandings and critiques may derive from these overlaps.

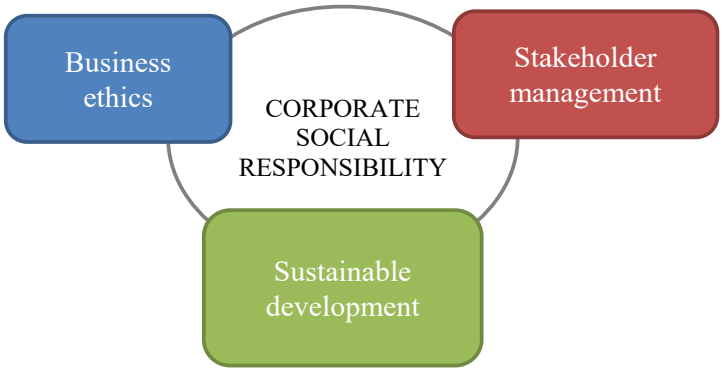

Fig. no. 1. Theoretical approaches to CSR

Source: own contribution

In this paper we will try to focus solely to the motivational level, mostly at the reason for some companies decide to get involved in CSR.

Aguinis and Glavas (2012) systematized theories on CSR by grouping existing studies on four dimensions: predictors, results, mediators (variables explaining the processes and mechanisms that explain why CSR initiatives are related to certain effects), but also moderators (the conditions under which initiatives CSRs produce some results). All of these are pursued in a multi-level manner a previous gap of analyses in this area. The authors define CSR as "context-specific organizational actions and policies that take into account stakeholders' expectations and the triple bottom line of economic, social, and environmental performance" (Aguinis & Glavas, 2012: 933). Although authors refer to organizations'

actions and policies, these are influenced by actors at all levels of analysis (institutional, organizational, and individual). At the individual level, there are the fewest studies, these coming from the micro field of organizational behavioral studies, human resources, industrial and organizational psychology. Individual *predictors* include the commitment of supervisors, their personal values and the congruence between personal values and behavior, awareness of CSR principles, training in the field and participation in conferences on CSR topics, their psychological needs of employees. The *results* observed include, above all, increasing identification with the organization, employee commitment and retention, organizational civic behavior, performance, creative involvement, better employee relations. The *mediators* of this relationship are the managers' accentuation of CSR issues, organizational identity and organizational pride. The main *moderator* effect is given by supervisors.

The importance of the managers' attitudes and motivations was proven also on Romanian data. Along with the age and size of the enterprise (Badulescu et al., 2018), the attitudes of managers have a decisive role in the amplitude of CSR actions at the level of SMEs (Saveanu et al., 2019). Consequently we will focus in this paper on motivations and attitudes of managers, both as an overview of literature on this topic and as qualitative study results and discussion.

Motivations for CSR

Numerous studies emphasize the role of managers in social involvement decisions (Hemingway & Maclagan, 2004, Du et al., 2013). This effect can be mediated through organizational culture (Übius & Alas, 2009; Baumgartner, 2009). Different motivations to engage in social action are found at several social levels, including the incentive for governments to stimulate such initiatives. These motives are systematized by Aguilera et al. (2007) by their type: instrumental, relational and moral

These authors (Aguilera et al., 2007) focus on the motivations and interests for CSR at the levels of employees, managers, as well as national and transnational, highlighting the pressures at every level that have a role in CSR and the success of these initiatives. The authors reveal on each level the instrumental, relational and moral motivations. The conclusions of this theoretical approach are formulated in the form of sentences to be tested in subsequent empirical approaches. They present the analyzes at each level as follows: (P1) The need for control, membership and a significant existence of employees will cause them to put pressure on firms to engage in social change through CSR. (P2) Different internal and external actors of organizations, shareholder interests, interests of stakeholders and stewardship interests determine firms to engage in social change through CSR. A top-down hierarchy of the motivation of the organization's internal actors will lead to stronger pressure on the firm to engage in social change through CSR. A bottom-up hierarchy of the motivation of the external actors of the organization will lead to stronger pressure on the firm to engage in social change through CSR. (P3) Government interests to create a competitive business environment, promoting social cohesion and sustaining collective responsibility for the good of society, will lead to companies being encouraged to engage in social change through CSR. The need for power, collaboration and altruism of NGOs will make them to put pressure on firms to engage in social change through CSR. The interests of international governmental organizations (IGOs) to promote competition and collective responsibility will have the same consequence. The existence of multiplicative relations between motivations among transnational actors will lead to more pressure on firms to engage in social change through CSR, depending on the density and intensity of positive actions of NGOs, IGOs and intergovernmental actors.

Although the systematization of motivations is in itself valuable, it should be noted that for some levels the work generalizes some premises in other contexts (for example moral

motivations at the level of governments, although it is the pressure exerted by them through the interests that has them). Moreover, the authors do not address the issue of the difference between attitudes and behaviors of employees or clients that is one of the main limits of studies in this field - it maintains a relative equivalence between the two, although a customer's CSR attitude is not a an indicator of behavior that penalizes socially irresponsible firms or that prefers socially responsible firms.
It is also considered that the role of managers' personal values, especially those at the organizational level, have an important influence on the social commitment of the companies they manage (Hemingway & Maclagan, 2004). Freedom of action, especially entrepreneurship, moderates the impact that these values have on their involvement in CSR. The same argument is filled empirically with the idea that both values and social actions must come in addition to economic ones (Joyner & Payne, 2002). Managers surveyed in this study report better results of social actions where these actions were a continuation of economic activity of the firms.

Methodological framework
In this paper we present the results of an investigation regarding the motivations and attitude of managers of socially active companies. This analysis was constructed opportunistically; we have conducted semi-structured interviews with ten managers with whom we have previous collaborations and had knowledge of their social involvement. We have interviewed 4 female and 6 male managers of small enterprises (between 1 and 49 employees; the average of 15 employees), all aged between 30 and 45 years old. They all graduated higher education, in the field of their activity or business. All of them are with the business from the beginning, eight of them being founders of the enterprise.
Nonetheless for our aim of understanding the motives of their participation we consider that sampling is not a requirement. We acknowledge that the profiles that could be developed based on these discussions may not be exhaustive; other motivational types may be drawn. More, we cannot state how many Romanian socially active SMEs managers' fall into each profile, nor which profile is better in terms of the efficiency of the CSR activities undertaken. These limits should be considered guidelines for future studies in this field.

Discussion
As our previous work shows, in explaining CSR at SME level there is a high incidence of a proactive attitude of the managers and owners of these firms (Saveanu et al., 2019).
First, we have the profile of managers who are involved as they consider it is their duty. One of the female respondents of our interview declared she acknowledges the help she received as a student and then when she started her business and she feels that she "can and she should give the same help to someone else"(*female, 41*). Consequently the CSR activities provided by her firm is mainly educational, providing internship opportunities for students, scholarships, free training and so on. The same idea could be drawn also from other four interviewers, two male and two female, having in common the thought that they ought to give back to the community some form of support as they feel they got in their youth or at the beginning of professional activity.
Some of them, being part of a network of socially involved companies, they also give support to charities, and however the motivation also falls under the form of duty: "we must help when we can. We support projects of marginalized groups, especially children for whom this help can be decisive towards a normal life path" *(male, 36)*.
In this group one of the male respondents raised also the problem of power: we should help because we can. "Things go badly in so many directions … so I think we need to contribute in doing things better because we can do so" *(female, 41)*. Managing a firm is often accompanied by empowerment which can further be employed in other areas of their life.

Second, there are managers whose involvement is more pragmatic, they see it as an opportunity to create and maintain social relations. This is not to say that they seek immediate returns on their business, however they declare that "we help where we can, because we can and this also allows us to maintain some relations with firms and institutions we can make business with. It's a way of showing them what we do and who we are" *(male, 43)*.

Two of our respondents, both male, fall under this motivational type. One of them is almost always present to events where his firm offered sponsorships provide him with a context of gaining social capital (as defined by Portes, 1998). The second respondent in this regard was even more direct, mentioning "networking is one of the reasons we got involved in these activities in the first place. We acknowledge we can be of help to different groups and continued to get involved in social events in our region" *(male, 41)*. We define this motivation related to social capital building as they seek not only to know more potential business partners, but also to show who they are and build relations based on mutual trust and face to face interactions. It is argued in the literature that bridging social capital can contribute to economic development (Ostrom & Ahn, 2001) but it also can have direct benefits in the business sector (Lin, 2008).

Least, we could identify the opportunistic CSR manager. These are the managers that reply to requests of sponsorship came mainly from people they know and seek no direct benefits from this involvement. In this case the image of the company is scarcely involved, it is more related to the individual prestige of the manager "I help my friends when I can" (*male, 39*). It's however not a duty but the desire to get involved and it's a proximity related help. More, in this case one of the three managers in the group declared he avoids giving help to charities and that he chooses more concrete lines of action. The other two gave money also to charities, one to a monastery for its charities, one "to whom requests help".

The investigation of these profiles should be further developed. First we will continue to organize discussions regarding both the motivations and the profile of social actions undertaken by these managers, until the profiles obtained are redundant. The analysis may be continued by a quantitative study in order to see how many managers can be found in each category. Also it is important to compare the motivation of managers who get involved and those that do not.

Conclusions

In this paper we have investigated social responsibility, as part of sustainable development contributions of small and medium enterprises (SME) in Bihor County, Romania. We have based our analysis on the premise that the intensity of social involvement is explained by a proactive attitude of managers of SMEs towards the role of business sector in providing welfare (Saveanu et al., 2019). Regarding the personal motivations of such involvement, through 10 interviews we have identified three motivational profiles of managers engaged in CSR: feeling of duty, pragmatic and opportunistic.

Such research fills in the gap regarding CSR at the level of SMEs, a level that could bring new insight in the understanding of the mechanisms that trigger such behavior of companies. More, comparing data from different levels of analysis we bring closer differing theories regarding this phenomenon.

Future research should first test these findings on representative samples of SMEs and should continue discussions with managers of socially involved firms regarding the forms, motivations and outcomes of their involvement.

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LEADERSHIP MASTERY - A THREE-DIMENSIONAL FRAMEWORK OF COMPETENCES BASED ON RELATIONSHIPS

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Abstract

The object of the paper was to demonstrate that for a better leadership understanding, a three-dimensional segregation of competences is needed. When looking at the term, leader from an empirical business perspective, we often find the definition to be a person who is being followed by teams and organizations. The term leadership as a competence, can further be classified as a sub-set of competences and values build around the idea of working with people. As working with people is rather a general term, I consider that a three-dimensional leadership framework would help better understand the different competences needed to successfully navigate the business environment in any organization. The three dimensions are: team leadership, upper and peer leadership and finally personal-leadership. we have run a survey in an organization that values leadership development in a unit of around 50 employees that have ranked leadership among the best in class worldwide; this exercise was run in order to verify the theory that different leadership competences need to be developed for each layer of communication (team employees, management-peers and the relationship with self) and to draw different conclusions.

Keywords

Leadership, Competences, Team, Management, Personal Development

JEL Classification

M1, M10, M19

Introduction

There are many different schools of thought and many manuals on what it takes to be a leader such as The Irrefutable Laws of Leadership (John C Maxwell, 1998) , however; if we go deeper, often times the traits and the competences of a leader, one who is generally accepted by the majority as the “right” type, we find that there are more resemblances then differences and often times are a result of superficial changes in terminology or use of words.

The scope of this paper is not dissect the differences between a leader and a manager as we will be using both terminology terms with the same weight; to be more clear we, will be discussing about formal leaders, or leaders that have also leadership positions in their organization charts, typically referred as manager, with different terminologies such as team leader, team coordinator, head of, C-level etc.

From personal experiences managing different teams and people for the last couple of years, we have started to develop a theory based on which, like anything else, leadership is a sum of competences and these competences are different if we look at them from a relationship perspective (Özmen, Sârbu, Săseanu & Toader, 2017). Because personal experience is biased and usually tends to have a greater weight on objective judgement, a survey was sent in a well-established multinational corporation, where we asked both managers who are considered leaders by the majority of their peers, to respond a survey with the aim of ranking the competences they master through the optics of the Three-Dimensional (3D) Leadership Competence Model thus putting it to test.

The Layers of the 3D Leadership Model

Let's start by describing the conceptual 3D Leadership Model:

The 3D Leadership Competence Model identifies three distinguished layers where relational leadership competences can be grouped by. We will categorize the layers from the relational point of view or else, the one the leader has with himself, his team or his peers and upper managers.

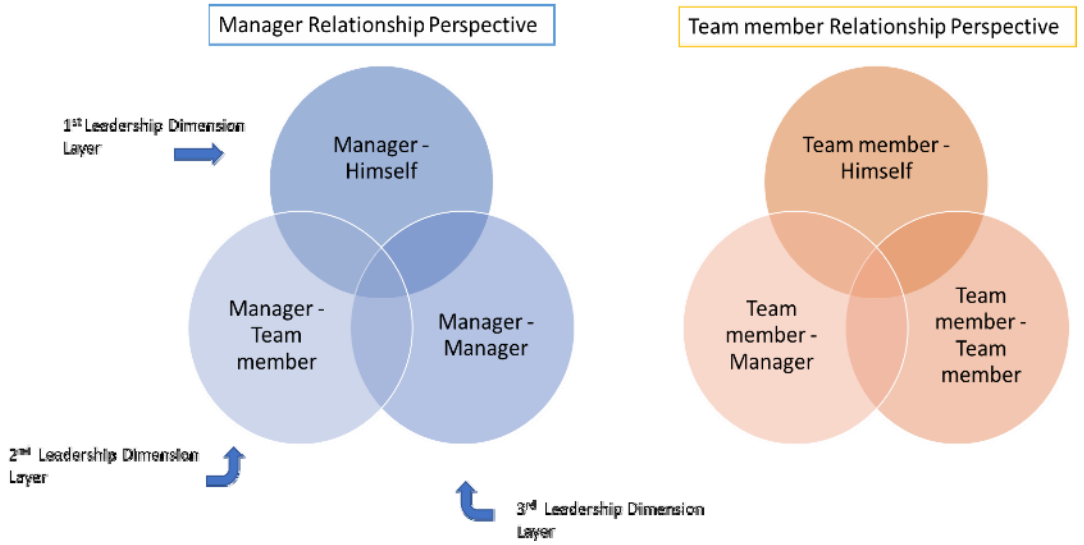

Fig. no. 1 Leadership 3D Model – Manager perspective and Team Member perspective

Source: authors

The First Leadership Layer – The deep-sea level

At this stage we will be looking at the relationship the manager has with himself or self-leadership. The first layer comprises of competences that a leader needs to develop to master his personal leadership. Often, we hear that a leader must be a role model for the people he is leading, he must walk the talk. But which are the competence we need to develop to master this first leadership layer or as I like to call it, the deep-sea level. In the Self-Leadership (Bryant & Kazan, 2012) we find that there are three main focal points: self-awareness or how we are in tune with our intentions and values, self-confidence or the exercise of knowing our strengths and weaknesses, and finally self-efficacy or the belief that we have the control to handle anything. Having this in mind, we can deconstruct several competences that can derive from them which can be generally accepted in as self-competences: wisdom, courage, decision making, expertise, ethics, balance, composure, learner, integrity, confident, creative, innovative, values and principles etc.

From our research we've started with the all-time best seller management books and found that this is usually the most overlooked layer of leadership as in other worlds it implies having the discipline to continue to develop one's skills and competences and the constant checkups. This can be often difficult for managers and formal leaders as when the person identifies with the position, it's very likely that he or she will consider that they are self-sufficient, and this is proven by the organizational position they hold.

The Second Leadership Layer – The offshore level

The second layer comprises of competences that a leader needs to develop in relation with his team, whose members are supposed to follow him. A supposition can be made here that this level is the most important and most well covered layer, considering the level of attention it gets from the specialized books and lectures lately. Starting from the principle that a leader is the person whose main responsibility is to steer a group of people, in our case the team members, to a common goal, then there is no wonder why most of the leadership development and study books out there mainly focus on this layer.
At this stage, we slightly move from the inward leadership development perspective to the outward leadership perspective. From a human relationship perspective, the manager is developing his relationship with each team-member one to one, there can't be any one to many relationship developments as there is no one single team entity, but a team is formed from several individuals thus a sum of one to ones relationships. One of the most prolific recent authors in leadership studies is Simon Sinek, the author of Leaders Eat Last (Sinek, 2014), who has elegantly groups leadership competences, in what we have defined as the second leadership layer, in three big categories: selflessness or in other words caring about people in one's team; empathy is the second one and is about making sense of the other person's feelings, situation and condition and taking them into consideration; and finally grace under fire, or the ability to withstand the pressure, urgency and possible problems and not spread it in the team. Deriving from this model and other source, we can add the following competences mapped at this 2nd Leadership Layer: ability to inspire and motivate, problem solver, results oriented, relationship building, strategic view, develop others, communicates clearly and openly, creates a feeling of teamwork, develops leaders, creates a safety environment for mistakes etc.

The Third Leadership Layer – The high inland level

At this final stage we are looking at the relationship the manager has with other peer or upper managers. Comparing with the previous layer, the manager-team level, and looking at the extent of books and articles that have been researched on what competences a manager needs to successfully navigate the relationships with his management team including the direct manager, we can say that the level of interest is less than on the more covered second leadership layer. This is a bit of a paradox as most of the times most of the time a manager spends, about 1/3 of total time according to some studies, is spent on administration tasks which includes exchange of emails with other leaders or peers and leadership meetings or meetings with other managers, where strategy, results, negotiations and other topics are being discussed and agreed upon. In order to successfully navigate these lands, we see that the relationship still remains outward oriented and one to one but this time, there is no responsibility over the management team and the direct manager, such was the case with the manager and his or her team; the manager is now part of a team of managers and he is responsible with his part of own tasks agreed or given by own manager and peers. If we check the interpretation (Fig. no. 1), we can see at the third leadership layer looking from manager or team members perspectives, the relationship that each needs to build and the

competences both needs to develop can be quite the same, as it looks like the manager is in a team of managers much like the team member in his own team of team members, the only differentiation is that the setup is made at an upper organization chart level.
Based on this, we can nominate the following leadership competences: experience, influencing skills, negotiation, managing change, delivering results, meeting deadlines and commitments, critical thinking, forward-thinking, self-confidence, collaboration, seeing the bigger picture, organizing skills, conflict resolution, delegating, decision making, flexibility etc.
To assess the importance of the competences on each separate leadership layer of the 3D framework, I have run a survey on a unit of 50 people who is well established as leadership driven within the organization. The results are based on the input of the three managers and cross checked with the response of their respected team member, to see whether correlations and conclusions can be drawn. The second figure (Fig. no. 2) represent the which are the top three leadership competences that the manager things are important to focus on, market with the blue color, and which are the top three leadership competences that a team member believes are important for the manager to develop, marked in orange. The importance is weighted from left to right, meaning that a competence on the left side is more important that follows next to the right side and so on.

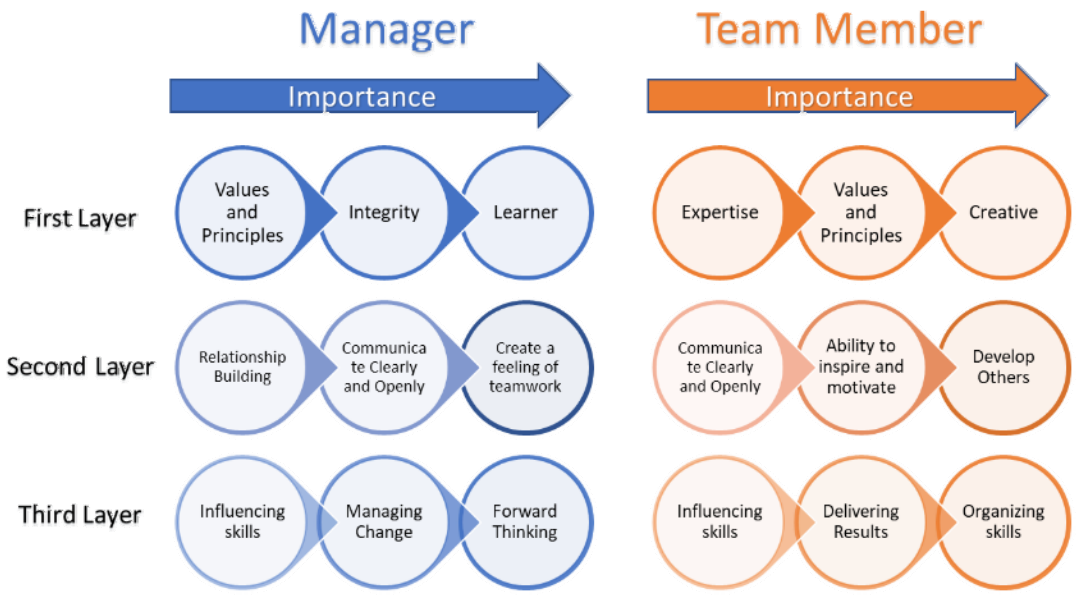

Fig. no. 2 Survey Results – Top 3 key competences from a manager and a team member perspective
Source: authors

Survey and results interpretation
We'll start interpreting the results and putting to the test different hypothesis which could help us better understand if and why there are gaps when it comes to the importance of different leadership competences, when we look throw the eyes of the managers or their team members.
We'll start first with the results given by the managers:

We see in results (Fig. no. 2) that managers believe that the most important competence is knowing and having values and principles. In the best-seller book, The 7 Habits of Highly Effective People (Covey, 1989), the author explains that principles are permanent rules and laws that cannot be challenged thus universal in nature while the values are internal and subjective and sometimes change over time such as personal beliefs or opinions. Based on this we could draw the conclusion that because it is so personal, and it can incorporate a lot of interchangeable skills and competences, the idea of having values and principles has a more holistic approach on leadership, a more idealistic concept then something pragmatical. The second most important competence is integrity which could be explained as the act of being align on what you say, what you feel and what you do, thus showing integrity in relation with yourself and others. This is one of the important pillars of building trust in any relationship. Finally, we have the third most important competence which is being a learner. We go around and reiterate that leadership or the act of leading is a continues process, there is no clearly defined threshold that if someone passes, we can consider him a leader, so continues development through learning is critical.

The second layer is where we investigate what is important in relationship with the team: we find that the most important leadership competence is relationship building, or the ability of the manager to truly connect with each team member. One explanation is because of the importance given to IT changes in any industry and business, the focus on digitalization, on working with software and tools the result becomes a need for human to human relationship building. The second one is communicating clearly and openly; this could be the case especially in the case of the millennials labeled generation where an emphasis is put on self-importance and self-contribution - how each can make a difference, how important his or her voice is, how he or she can contribute and have an impact in the organization. This can only be done through communication on both sides on what the expectation is and how to move it forward. Finally, we have the creation of the feeling of teamwork. Organization are competitive environments that compete with one another for supremacy and survival which also results in competitiveness within the company members, who compete for better organization hierarchical positions. Because of this a key focus and challenge for managers is to keep his or her team members not to compete between themselves or sabotage one another, but to work together for the same win.

The third layer where we look at competences needed to perform in relation with other managers, we find that influencing skills are rated the highest. Because the company's or unit's resources such as employees, budgets, strategic decisions are limited and often shorter than the apparent need, influencing skills comes into play for driving them towards the best outcome. Thus, the more influence a manager carries, the easier he or she will persuade other managers to move in his direction. The second skill is managing change which indeed is picking up increasingly importance due to the everchanging business environment which dictates that quick and bold decisions need to be taken to survive or prosper this highly competitive environment. Since we as humans are reluctant to changes, this is becoming a very important skillset to possess on how to manage change in a positive and with minimum unsettlement way as possible. Lastly, we have forward thinking which can also be defined the ability to see and plan-ahead. In many cases such as a recent article in Harvard Business Review, it is said that tomorrow is already now, as again the speed of business development is reaching new records, the ability to decide now on things that will have a positive repercussion also in the future is something not to be ignored.

Let's continue with the results given by the team members:

In the results (Fig. no. 2) in orange, the team members believe that the most important skill for the first layer of leadership is expertise. The average team member is required to perform different tasks and activities, the majority of which can be repetitive. In this regard, the more experience he has, the better he will perform and be better evaluated for. The second

competence is the mix of values and principles which like in the same case of the manager, can be rephrased as the creation of the individual, and how we do things and take control, based on own set of internal rules. Finally, we have the creative competence. This is in many cases, in many teams and in many companies one of the differentiators. Having the ability to be creative means that can help do things faster or in an innovative way, that in both cases is a value add for the person and ultimately team or company.
The second leadership layer starts with the competence of communicating clearly and openly. Communication is the key for starting to build trust within a team whether it is explaining why we do things in certain way, what is the result of my work, why this decision was taken or simply keeping a transparent view within the organization. The second competence is the ability to inspire and motivate. In other words, the ability to make team members understand and keep on working for the common goal, despite hardships and failures that they may encounter, is something that team members value a lot. The final one is the skill of developing others, or for the manager to develop his team members. Common sense dictates that if a leader has the organization position then he deserves it for his competences and merits. Given the hierarchical structure of any organization and the general concept that employees always want better for themselves, also from a professional perspective, then we can think that he or she can share something with the team member thus helping him succeed professionally as well.
Finally, we have the third leadership layer where we also notice that negotiating skills are the most important when it comes to building relationship on the horizontal scale. This is also how informal leaders appear within teams as they most of the time possess very good influencing skills amongst each other. The second competence is the ability to deliver results. In any organization we might find somewhere stated that at the end it's the results that count and that makes or breaks a team, a unit or an organization. Finally, we have the last competence which is the organizing skills and again we often hear the concept of doing more with less. This is not possible unless team member possesses high organizing skills to prioritize important tasks first that have a higher change of yielding a positive impact and deprioritize low value ones.

Conclusions

We've started this exercise with the scope of structuring the multitude of competencies a leader is believed to have possessed from a relational perspective given that leadership is more or less, the art of communication. By using the Three-Dimensional Leadership Competence Model, managers and team members can focus on specific competences where they would want to fill possible competence gaps or strengthen existing ones thus have higher changes of success in the corporate business or entrepreneur world. All the three layers are needed to become a successful complete manager in the eyes of oneself, his or her team or his or her management peers. We found that the perspectives of the manager and his team member on key competences have both common points and different views, which could mainly be justified by the subjective experiences of each. Naturally, another supposition can be made which is that the importance of competences derived from the study is given either by the lacking or the poor development of competences from the leader's toolkit, thus the increasing want for them to be possessed or, key differentiators or strengths in terms of competences that the leader possess and believes to be the results of his or her success, this by looking in comparison with other leaders. By looking at the common ground of perspectives of leaders and team members we can state that Values and Principles for the First Layer, Communicate Clearly and Openly for the Second Layer and finally Influencing Skills for the Third Layer can be a competence bridge between different layers of organization and an indicator of successful leadership development. Further research is needed to understand to what extent there could be a leadership competence gap between

existing or perceived competences of leaders and the importance it is given to each by them or by their team members.

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ASPECTS ON THE NEED OF REENGINEERING THE ENTITIES ACTIVATING IN THE AGRICULTURAL SECTOR

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Abstract

In order to take pertinent decisions, the Manager of the agricultural entities must analyze and evaluate concrete data on what should be collected on site. This is possible through precision agriculture, which uses the technological development in order to increase the crops yield and to make efficient the managerial activities.

The implementation of such technologies, either software or new equipment or machines requires great investments. Investments have been performed at the Romanian agriculture level, through non-reimbursable financing, but they have not been enough in order to reach an optimum exploitation of the obtained agricultural areas. This paper aims at performing an analysis of the macroeconomic factors from agricultural sector in order to identify the relations which can determine the acceleration of the dynamics of the investments.

By processing the data put at disposal by the National Institute of Statistics through the Economic Accounts for Agriculture, a dashboard presenting the Gross Fixed Capital Formation for machines and machinery was obtained. The variables of the table have been statistically analyzed by using Grelt software in order to fulfill the established objective

Keywords: Precision agriculture, capital, sustainable development, Smart farming technologies

JEL Classification

O13, Q16, Q14

Introduction

Today, a fundamental role is played by the performance of economic entities, as the competition for each market segment of the economic sub-systems has become ever closer, and the mechanisms of globalization eliminate the weakest from the context. The chance of survival in this competition increases considerably for those economic entities that discover and reduce their vulnerabilities very quickly and, moreover, implement certain performance tools that make it easier to locate, explain and solve various management gaps. The increase in competitiveness must not be omitted in this struggle, so that the various impediments that can emerge in the success of the economic entities, such as the imperfect and constantly

changing legislation, the very strong impact of politics on the economic processes, the general instability in the society (all characterizing the business environment in Romania) can be overcome much easier. Climate change manifested on the planet directly affects the agricultural sector (Barnes et al., 2019). According to FAO (2013) studies, the main actions of the agricultural producers against climate changes are the implementation of new agricultural production technologies and practices such as modern efficient irrigation techniques, new plant varieties well adapted to climate change, flexible pest control systems or improved techniques for early warning in critical situations.
The European Agricultural Machinery Industry Association CEMA (2014) draws attention on the importance of the concept of efficient agriculture in the context of world population increase, being absolutely necessary to implement some measures through which to produce more, but with much smaller costs and which would strictly comply with environment protection measures. CEMA also states that the future is represented by the Smart farms and by using smart equipment.
Due to applying new technologies in agriculture, the farmers can obtain high outputs of the crops, varieties with improved strength and grounds which store larger nutritive substances (Warutere and Verkooijen, 2011).
By analyzing the information available at the level of the databases of the National Institute of Statistics of Romania, of the Ministry of Agriculture and Rural Development and of the Ministry of Internal Affairs (vehicle registration database), there is a decrease in the equipment's age in the last 10 years, but in the same time is imperative to increase the major investments for the renewal of the agricultural machine and machinery fleet.
The implementation of efficient agriculture implies both the existence of a modern machine and machinery fleet and their compatibility with the available IT solutions and applications that are absolutely necessary for an efficient management of the companies / entities operating in the agricultural sector.
The objectives of the paper are to analyze the macroeconomic indicators that aim at the dynamics of gross investments in agricultural area. By analyzing these indicators, it is desired to establish a relationship between the factors that influence the tendency of increasing the need of reengineering of the machine and machinery park.

Methodology

The actual global economic environment, through its specific elements, imposes to economic entities new performance standards which exceed the economics area. Taking into consideration the macroeconomic developments, we consider that the neglecting of the various social, technological and environmental aspects can lead to the registration of some losses in the financial statements of the economic entities which activate in agriculture domain and not only.
We plan to analyze the development of Romanian agriculture at a macroeconomic level, dynamic in the period 2008-2017. The analysis was carried out using the following variables: relative gross fixed capital formation for machinery and equipment (MGFCF) in relation to the value of production at branch level (VAP), fixed capital consumption (FCC) and the value of the equipment (EV).
The production of the agricultural branch is determined according to the Eurostat methodology for the Economic Accounts for Agriculture and includes: the value of all agricultural product outputs (including the value of wine production obtained in agricultural units without industrial winemaking facilities) and the value of agricultural services performed by specialized units.
Consumption of fixed capital takes place gradually through its participation in several production cycles. Gross fixed capital formation represents the value of the durable goods acquired by resident units for the purpose of later use in the production process.

Following the application of the stated reasoning will result a useful scoreboard in the opinion of the authors, the managers of the agricultural entities as well as the regional authorities for establishing the future directions for the development and implementation of support measures in the less favored areas, taking into account the sustainable development.
The used and processed data were taken over by the authors from the site of the National Institute of Statistics of Romania, Economic Accounts for Agriculture (EAA) section. EAA represents a system of interconnected accounts which supply a systematic, comparable and as complete as possible image of the economic agricultural activity. EAA have included in their structure the production, operation, income accounts of the enterprise and the capital account.
For this study, the authors have used the capital accounts which include the Gross Fixed Capital Formation and the production accounts comprising the non-finance assets' added value. The processing of the data obtained was performed with the help of Gretl software having as purpose the identification of the statistical links which exist and develop between the variables approached in the study.
The authors had in view the following main objectives for the issuance of the present study:

1. Evaluation of the structure of agricultural development in Romania based on the macroeconomic indicators reported during 2008-2017
2. Identification of the relation between the index that determines the increase of agricultural machinery and equipment and the other gross investment dynamics' indices.

The study's diagram is represented by the 2 level structuring of the performed analysis, distributed as follows:
The first part of the research presents the study of the specialty literature, by identifying some important facts which limit the implementation of efficient agriculture.
The second part consists in the conceptualization of the model, based on the results depicted from the operational study, in the analysis of results and formulation of conclusions.

Factors obstructing/influencing the transfer from traditional to precision agriculture

In accordance with the study performed by Bewley (2010) on a sample of 229 milk producers from Kentucky, USA, the main factors responsible for the low adaptability of producers to the new zoo-technical technologies have been identified: the lack of information on the technologies available on the market (55%), not identifying quickly the cost-benefit ratio (42%), information excess, without farmers knowing how to use it (36%) or shortage on available time in order to learn to use the technology (31%). Starting from this study, Atzori (2013) proved that these factors are closely related to the professional training of the agricultural entity managers and that the level of their education can represent an important factor in the implementation of an efficient agriculture.
The study performed at the level of 227 agricultural entities from Germany (Paustian, 2016) presented the fact that 69% of the farms that hold agricultural areas larger than 500 ha had adapted to the efficient agricultural requirements, as compared with a weight of only 9% in case of farms having agricultural areas between 1 and 99 ha.
Another study, based on the comparison between two German farms from different areas present the impact of implementing efficient agriculture per regions and the changes generated by this factor at the level of company's management (Meyer-Aurich, 2008). One of the farms held a surface of 1560 ha and the second of only 150 ha. The technologies used for the first farm are represented by the cartographic management of crops according to the soil type, based on output maps and on using aerial photographs, and for the second, technologies based on sensors used for the management of nitrogen usage had been implemented. The usage of sensors' technology had a moderate influence on the company's management system, while the system's implementation based on map plotting has led to a significant reorganization of the farm.

At United Kingdom level, the research made by DEFRA (2013) on a sample of around 2.800 agricultural farms found that the main factors for the non-usage of efficient agriculture are similar to the ones met in USA and Germany. The study has revealed that most of the managers of the entities are over 40 years old and that the agricultural farm represents a family business in 77% of the cases.
Within the main technologies used by the British farmers, the greatest weight is held by GPS guiding technology (83%), map plotting on site (GIS) (41%) and usage of images through satellite (51%) (Holland, 2015).
The engineering in agriculture and the technical level of machines and equipment is in close connection to the volume and quality of the agricultural production.
At the Romanian agriculture level, one of the problems that obstruct the engineering and that generally manifests at small farms level is represented by not knowing the development possibilities and the insufficiency of resources in order to develop (Gimbășanu, 2017).

Model presentation
Starting from the need to increase investments in retrofitting, we analyzed dynamically the main indicators of the EAA that concern the equipment park during the period 2008-2017. The results were centralized in table no. 1.

Table no. 1. Segregated analysis

Millions of lei

	Value of agricultural production (VAP)	**FIXED CAPITAL CONSUMPTION** (FCC)	**EQUIPMENT** (EV)	**GFCF OF MACHINES AND OTHER EQUIPMENT** (MGFCF)
2008	66.994	7.590	4.379	1.166
2009	59.928	7.346	3.770	889
2010	64.453	8.251	4.687	1.642
2011	76.509	10.049	6.438	2.046
2012	64.259	11.440	7.539	1.861
2013	78.464	11.940	7.876	2.044
2014	74.524	13.437	9.196	2.411
2015	68.750	12.789	8.485	1.758
2016	69.349	11.160	6.893	1.355
2017	78.494	10.517	6.251	1.455

Source: elaborated by the author

Following to analyzing the date from Table 1 within Gretl statistical software, the following equation for defining the relations between variables resulted:

$$\hat{} \text{ MGFCF} = + 0.0276^* \text{ VAP} + 0.725^* \text{ EV} - 0.482^* \text{ FCC} \quad (1)$$
$$(0.0112) \qquad (0.267) \qquad (0.233)$$

T = 10, R-squared = 0.987
(standard errors in parentheses)

Following to testing the least squares model, it resulted that there is a significant statistical relationship between the variables analyzed.

It is observed within the model that p-value registers values smaller than 0.5, fact which confirms that there is a significant statistical relationship between the analyzed variables. The model's consistency is also proven through the R-squared value which is close to 1.

Model 1: OLS, using observations 2008-2017 (T = 10)
Dependent variable: MGFCF

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
VAP	0.0276489	0.0111682	2.476	0.0425	**
EV	0.725279	0.266820	2.718	0.0298	**
FCC	−0.481648	0.232782	−2.069	0.0773	*

Mean dependent var	1662.755	S.D. dependent var	457.5291
Sum squared resid	377150.1	S.E. of regression	232.1176
Uncentered R-squared	0.987229	Centered R-squared	0.799814
F(3, 7)	180.3709	P-value(F)	5.45e-07
Log-likelihood	−66.87845	Akaike criterion	139.7569
Schwarz criterion	140.6647	Hannan-Quinn	138.7611
rho	0.229106	Durbin-Watson	1.380212

Fig. no. 1. Graphical representation of the confidence interval
Source: elaborated by the author

Discussions

The implications of using Information Technology in agriculture to limit costs by monitoring and optimizing with digital maps and the synergies between them and the agricultural machinery, actions which lead to productivity increase at the same time, become a strategic priority for any agricultural entity.

The decisions of the agricultural managers must include a systematic analysis of all available information, which is only valuable when centralized to present a picture of the

link between decision and effect. The establishment of good management patterns is an advantage of IT systems that cannot be provided by the classic management systems, given the large amount of information that needs to be processed.
The current agricultural management systems used in the domestic market have been adapted to support farmers' work, from providing the necessary analyzes up to the possibility of automatically creating reports that must be done and for comparing the resources used on farms in similar areas. Automatic data processing by means of sensors mounted on agricultural machinery is a solution designed to reduce the time of data processing, the time for their introduction and to reduce both the administrative staff costs and the risk of human error (Panturu, 2014). The monitoring of pesticides and fertilizers used, reported to the crop type, as well as the automatic completion of the Fertilizer Register and of the Phytosanitary Registry prove the usefulness of such an IT solution (Zarco-Tejada, 2014).
The impediment in purchasing this software is the lack of the necessary financial resources and the practical implementation difficulty is due to the sporadic use of computer technology and the difficulty in acquiring IT procedures for farm management by Romanian farmers, far from their comfort zone.
Another important problem among small farms is the lack of a managerial culture that reveals the importance of accurate records. In some farms in Romania there is no centralization of the activities that take place at the farm level or at the level of written evidence, and the reports are made based on the situation memorized by the manager. The level of training of farmers in Romania is mainly represented by practical experience without the implication of the educational factors. According to the study conducted by the European Commission on Farmer Families at European Union level (2016), the number of Romanian farmers aged over 50 is 40%, making it difficult to attract them to modern technology and computerized agriculture.

Conclusion

The necessity of the present study started from the desire to understand and explain the changes occurred at the management style level which must be achieved by the entities from agricultural level in order to resist on the market in competitiveness conditions. We consider that a viable solution is the translation of the Romanian agriculture to an efficient agriculture, as presented also in the durable development policies provided by the European Union. But in order to achieve this endeavor, it is required the reengineering of the machinery and equipment fleet, as well as the adoption of some software integrated solutions which can bring extra value to the managerial activity. In the authors' opinion, the first step would be the reengineering of machinery and equipment which would influence the profitability and agricultural output. The synergy between efficient machinery and managerial softs represent the key precision agriculture implementing equation. The performed analysis presented the potential of the gross investment dynamics in agriculture at macroeconomic level. Gross fixed capital formation for machinery and equipment is statistically influenced by the value of recorded agricultural production, the value of equipment and machinery and the consumption of fixed capital.

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DOES INTRA-EUROPEAN MOBILITY IMPACT YOUTH ENTREPRENEURSHIP?

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Abstract
International mobility is an increasing phenomenon among European youth, mostly after the creation of the Single European Market and the warranty of freedom of movement of goods and peoples within the European Union. Being internationally mobile has positive consequences on personal development and on economic performance on the labor market, including the development of entrepreneurial activities. This paper estimates the impact of international mobility in Europe on youth entrepreneurship, after the individual's returning in the country of origin. The data source for this study is a European survey launched within the Horizon 2020 project MOVE "Mapping mobility – pathways, institutions and structural effects of youth mobility in Europe", resulting in sample of 5499 respondents and covering six countries: Germany, Norway, Spain, Romania, Hungary and Luxembourg. Using the advantage of a large sample that provides information on both mobile and non-mobile respondents and applying Propensity Score Matching, we find that people who had an intra-European mobility experience are more likely to be entrepreneurs after returning in the country of origin. Our results confirm that mobility has a statistically significant positive, but rather moderate impact on entrepreneurship in the case of European youth and also explains the determinants of youth being mobile.

Keywords
Mobility, Entrepreneurship, Youth, Propensity score matching

JEL Classification
J13, J61, L26.

Introduction

Sustainable development in Europe is directly influenced by its economic growth channeled by the growth of enterprises and the internal mobility of labor. Entrepreneurship has a clear contribution to sustainable development, since it creates new companies, generates new jobs, opens up new markets, and nurtures new skills. For policy makers, encouraging and supporting entrepreneurship is more and more a priority.
In the context of sustainable development, entrepreneurship is becoming a popular research topic, and the growing literature emphasizes the increasing role of "sustainable entrepreneurship" (Kardos, 2012). This is an "all-inclusive concept addressing the contribution of entrepreneurial activities to solving societal and environmental problems, to sustainable development in a more comprehensive way" (Kardos, 2012). Sustainable entrepreneurship is described with several features as social responsibility, competitiveness, progressiveness, knowledge creation and usage, innovativeness, dynamism and seeks for

business benefits creating social value (Krisciunas & Greblikaite, 2007). In all societies, youth is a key factor for progress and for innovation, becoming the engine of sustainable entrepreneurship; youth entrepreneurial behavior needs to be understood, studied in order to be better supported and encouraged.

International mobility is an increasing phenomenon among European youth, mostly after the creation of the Single European Market and the warranty of freedom of movement of goods and peoples within the European Union. Labor mobility improves the functioning of the labor markets through the balancing of skill needs, labor-market shortages, and unemployment. Being internationally mobile has positive consequences on personal development and on economic performance on the labor market. However, in spite of its increasing relevance the influence of mobility on the propensity of becoming freelancer or entrepreneur is not much explored in the economic literature. The nexus between migration and entrepreneurship has been mainly explored from the perspective of migrant entrepreneurs or migrants self-employed, as they are perceived as a vector for sustainable development (Naudé, 2012). Using data from Egypt, it was proven that „an overseas returnee is more likely to become an entrepreneur than a non-migrant (...), they accumulate savings and experience overseas that increase their chances of becoming entrepreneurs." (Wahba & Zenou, 2017). At the same time, the determinants of youth entrepreneurship are presented in various papers (Chigunta, 2002; Kojo 2010, Popescu & Roman, 2018) that describe demographic or personal factors, such as financial literacy.

However, the role of international mobility in the particular case of young entrepreneurs is not entirely explored. Therefore, this paper aims to fill this gap and explores the nexus mobility, entrepreneurship and youth, using a very recent dataset representative for six European countries. The main purpose of the study is to explain the role of international mobility in youth successful entrepreneurship in Europe, using a recent dataset, resulted from the MOVE project, financed by the Horizon 2020 Program between 2015 and 2018. MOVE provides a research-informed contribution towards an improvement of the conditions of the mobility of young people in Europe and a reduction of the negative impacts of mobility through the identification of ways of good practice thus fostering sustainable development and wellbeing (Navarrete, L., Lorenzo-Rodriguez, J. et al., 2017).

It should be noticed that most of the related existing literature refers to migration and its interaction with entrepreneurship, and the concept of mobility is less applied. The two concepts, migration and mobility, are used in many cases interchangeably, since there is a certain overlap between them. The concept of mobility differs from migration in at least two dimensions: spatial and temporal. Mobility covers intra-European cross border movement of EU citizens and has a rather short term, temporary character. European mobiles are therefore more difficult to be captured in official statistical data, since their movement is irregular, short term. Therefore, another contribution of the paper is that it is focused on mobile youth, defined as individuals aged between 18 and 29 years who have spent at least two weeks abroad for other purposes than tourism or family reasons. Using a recently produced dataset that includes both mobile and non-mobile youth, our methodological approach mainly relies on propensity score matching, which is a semi-parametric method with increasing popularity in the field of impact studies.

The rest of the papers is structured as follows: section 1 presents the methodology applied, section 2 describes the data set and the variables, while section 3 present the results. Finally, the last section concludes the paper.

Methodological approach

The paper relies on counterfactual impact analysis of mobility, using a quasi-experimental approach in which the mobility experience is associated to a treatment applied to youth European population. Matching involves pairing treatment and comparison units that are

similar in terms of their observable characteristics. According to Dehejia and Wahba (2002) when the relevant differences between any two units are captured in the observable pre-treatment covariates, which occurs when outcomes are independent of assignment to treatment conditional on pre-treatment covariates, matching methods can yield an unbiased estimate of the treatment impact.

As mentioned, in this paper Propensity score matching (PSM) is applied. This is a semi-parametric estimation in three main steps, briefly described in this section. The first step consists in estimating the propensity scores parametrically; the second step involves non-parametric comparison of these propensity scores by applying matching algorithms, while step three involves checking the matching quality. The two most frequent parameters of evaluating policies found in literature are the population average treatment effect (ATE) and the average treatment effect on the treated (ATT). ATE is the average difference in expected outcome between treated and non-treated individuals. ATE is relevant for random assignment to treatment, while ATT is better suited for measures focusing on specific groups in the society.

In the usual binary treatment case of treatment versus non-treatment, the propensity scores are usually estimated by either a probit or a logit model. In the particular case of this study, being mobile is regarded as the treatment and the propensity scores are therefore estimated. According to Caliendo and Kopeinig (2008), the most widely followed tradition in selecting variables into the model estimating propensity score is to include all the variables which simultaneously affect both participation in treatment and outcome variable of interest. We employ a binary logit regression model in order to compute the propensity scores for being mobile. In our study, the binary dependent variable in the model is whether a person was internationally mobile or not. The regression model will be predicting the logit, that is, the natural log of the odds of having made one or the other decision.

There are several matching methods proposed in the literature, out of them the most widely used are: the Nearest-Neighbour Matching (with or without caliper), the Radius Matching, the Stratification Matching and the Kernel Matching. Therefore, in this study all the four algorithms are applied for producing a stronger result and as an instrument for comparing the final results of the matching procedure. For the purpose of a reliable matching, the `psmatch2` command in STATA was used.

Data

The data used in this study are a result from the MOVE project large survey that focuses on cross-border geographic mobility of young people within Europe. The surveys was conducted among young people in order to explore their mindsets, experiences and motivations regarding mobility, and barriers or reasons that hold non-mobile young participants in their countries. The mobility experience was regarded according to the main purpose: work, study, volunteering, entrepreneurship, Vocational Education and Training and pupils' exchange. As previously mentioned, 'mobility' was practically defined as having been abroad for a reason different than tourism or visiting relatives longer, for at least 2 weeks, this 'soft' concept of mobility was set to accommodate for all kinds of mobility types studied such as pupil's exchange (usually weeks), vocational training (in Germany 3 weeks), volunteering, etc. The respondents were young people aged between 18 and 29 from the six countries involved in the project: Germany, Hungary, Luxembourg, Norway, Romania and Spain.

The sample consists of 5499 individuals, both mobile and non-mobile and the national subsamples are representative at country level. A large number of variables were covered by the detailed questionnaire, including demographic characteristics, economic aspects, and perceptions on mobility, future plans and agency. Should be mentioned that at the moment of the interview, all of the respondents were living in the country of origin and therefore the

mobility experience was completed and finished. Those respondents having multiple mobility experiences were given the possibility to describe each experience abroad and to declare the most relevant one. The mobile respondent, as captured by the survey data could therefore be regarded as a returnee. The variables involved in the models are related to age, gender, education, city of residence and European region, but also the number of times the respondent was unemployed. These are detailed in the following section.

Results

The first step in calculating the propensity score is to define the treatment and control group and the relevant outcome variable. The population of interest in this study is defined by those respondents who have declared entrepreneurship as their current occupation. Out of the 5499 respondents, 266 were currently entrepreneurs or freelancers (table no. 1).

Table no. 1 Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Total sample					
Entrepreneur	5499	0,048	0,215	0	1
Age	5499	23,814	3,349	18	29
Male	5499	0,467	0,499	0	1
Size of the place currently live in	5499	4,160	1,607	1	9
Live with a partner	5499	0,411	0,492	0	1
Speaks English	5499	0,869	0,338	0	1
Has secondary education	5499	0,571	0,495	0	1
Father's education:	5160	0,399	0,490	0	1
Number of times in unemployment	5499	2,137	1,400	1	5
Eastern European	5499	0,356	0,479	0	1

Source: own computations using MOVE project data

Table 2 shows the results for the logit regression. The propensity score was estimated through `score` command in STATA, which employs a logit regression model in this regard.

Table no. 2 Logit regression results

	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
Age	0,0552	0,0102	5,43	0,000	0,0353	0,0751
Male	0,1275	0,0601	2,12	0,034	0,0097	0,2453
Size of the place currently live in	0,0431	0,0191	2,26	0,024	0,0057	0,0804
Live with a partner	0,1076	0,0631	1,71	0,088	-0,0160	0,2312
Speaks English	0,4384	0,0949	4,62	0,000	0,2524	0,6245
Has secondary education	-0,6367	0,0652	-9.76	0,000	-0,7645	-0,5089
Father's education	-0,0933	0,0626	-1.49	0,136	-0,2160	0,0294
Number of times in unemployment	0,0921	0,0214	4,29	0,000	0,0501	0,1341
Eastern European	-0,5471	0,0661	-8,28	0,000	-0,6767	-0,4176

Constant	-212	0,29095	-7,29	0,000	2.690.94	-1.550.4
Number of obs		5160				
LR chi2(9)	=	357.21				
Prob > chi2	=	0.0000				
Log likelihood	=	-3.243,6				
Pseudo R2	=	0.0522				

Source: own computations using MOVE project data

The results are highly significant, but the pseudo R2 is modest (5,22%) and it is obvious that more variables are needed to overcome unobserved influences. This number designates how well the included covariates explain the participation probability and this low number speaks for a rather weak specification, which must be kept in mind for the further interpretation.
Different matching methods were used to ensure that the best identification strategy is used. It is noticeable that the applied matching methods produced very similar results: the ATT connotes the individuals with a previous international mobility experience have a higher propensity to become entrepreneur, as compare to persons without a mobility experience (table no. 3)

Table no. 3 Average treatment on treated (ATT) group

Matching methods	No. treat.	No. contr.	**ATT**	Std. Err.	t
Nearest Neighbour	1952	1581	**0.038**	0.008	4.668
Stratifcation method	1952	3200	**0.036**	0.007	5.124
Radius method	1952	3200	**0.035**	0.007	5.300
Kernel method	1952	3200	**0.036**		

Source: own computations using MOVE project data

Conclusions

The paper aims at analyzing the impacts of being a young mobile European individual on the propensity of being an entrepreneur, after returning in the home country. In the context of the need for a sustainable development and for reducing youth unemployment, our results confirm that mobility experience has a positive impact on entrepreneurship, for the case of European youth. Using a large dataset collected in 2017, the results are statistically validated through a quasi-experimental approach, using propensity score matching and applying various matching procedures. The main conclusion of the paper states that mobile individuals have a propensity of being entrepreneur higher by 3,8 % than their non-mobile counterparts.
Also, being mobile is more likely for men, for people speaking English language and for those with a larger number of unemployment stages. On the other hand, being mobile is less likely for young individuals with secondary educations as compared to those with higher education, and also for Easter Europeans.
These results confirm that one of the beneficial effects of intra-European mobility is increasing the propensity for entrepreneurship that positively impacts the labor market outcomes.

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CYBERCRIME IN DIGITAL ERA

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Abstract

In Digital Era, businesses and economy become global easily, helped by innovative technologies. Nowadays, mankind depends on Internet, computer and technology. Trade, services, data flows, have crossed the national borders, transforming into a global market that can be easily accessed.

These new technologies like mobile internet, cloud technology or advanced robotics lead to economic growth, transform our lives, our jobs and the traditional business models, but also have a significant disadvantage: cause the evolution of the new type of crime – cybercrime.

On the global scale, crimes are committed by electronic means, being facilitated by technological progress, considering the speed of data transfer or the number of persons connected globally to the network, anytime.

The aim of this article is to present the challenges of Digital Era, the vulnerability to cybercrime, analysing the influence of digital technologies for cybercrime, including illicit financial flows. Also, it will be presented the newest cybercrime tactics and their costs, for explaining the significance of this phenomenon and for identifying ways of minimize its impact.

Technological advance and globalization impose a fast adjustment to changes of the global business environment for succeed, but also for efficiently control cybercrime. The fight for cybercrime should be global, being absolutely necessary the international cooperation of organizations and countries in order to create and to permanently update the legal framework. Consequently, cybersecurity must represent an important objective offered by corporations and government, which must prevent cybercrimes, using technological advance as a benefit.

Keywords

Cybercrime, Digital Era, Globalization, Cybersecurity

JEL Classification

F60, F63, K24

Introduction

The 21th century could be described by the fast evolution of international trade and finance due to digital flows, which allow the transmission of ideas, information and innovation around the world, in the global economy.

Internet represents a global network which instantly connects people and companies all over the world.

Innovation by digital platforms, impose a new way of doing business globally, reducing the cost of international transactions. It has been created markets and communities at the global scale.

According to McKensey 2016 report, small businesses become "micro-multinationals" through digital platforms like eBay, Facebook, Amazon, for connecting worldwide customers and suppliers.

Individuals are actors in globalization process, using digital platforms for learning, finding jobs or building personal networks. 900 million people connect internationally using social media and 360 million use e-commerce outside the national borders (McKensey, 2016).

The whole human life has changed thanks to technology. There are 4388 billion internet users, representing 57% from total population and 3484 billion active social media users, representing 45% from total population (fig. no.1).

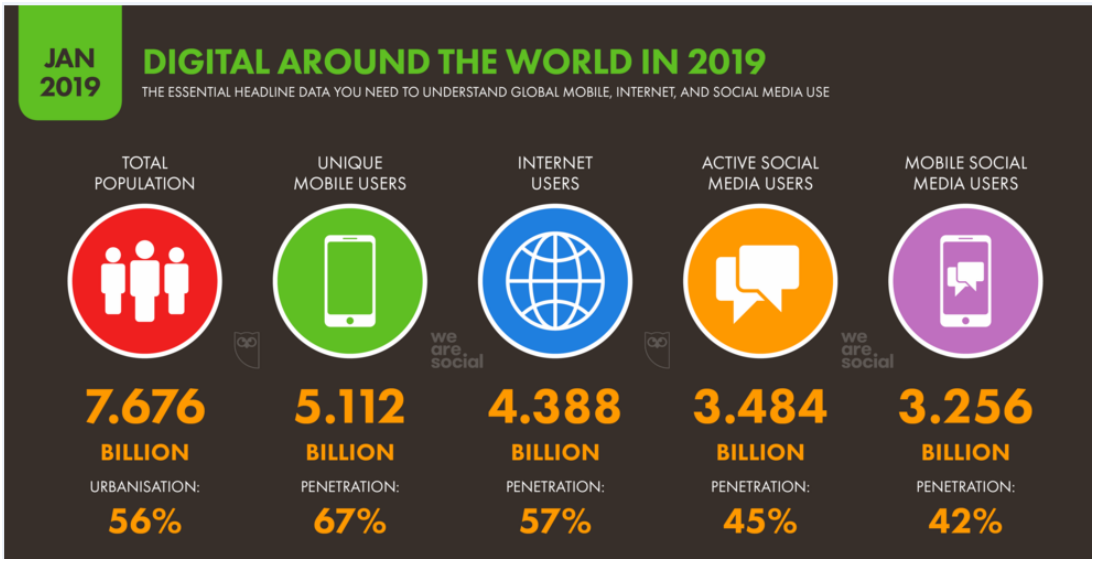

Fig. no. 1 Digital around the world, January 2019
Source: OECDigital 2019. Global Digital Overview.

Over a decade, global GDP raised by 10%, due to global flows which increase productivity. Moreover, countries benefit also from inflows or outflows.

Globalization entered the new Digital Era, defined by data flows which transmit information and innovation. One significant disadvantage of innovation represents the rise of cybercrime, cyber-attacks or cyber espionage.

Digitalization or digital transformation may be described like „the use of technology to radically improve performance of enterprises" (Institute Mines Telecom, 2016). The incomes coming from the digitalization of companies will determine an increase of 3.6% of the GDP by 2020, according to McKinsey predictions.

It has been identified three key ways that technologies could be abused by offenders (Holt, Bossler & Seigfried-Speller, 2015):

1. medium used for communication and for developing subcultures online;
2. mechanism for attracting sensitive resources in order to engage them in crimes;
3. incidental device for facilitating the offense and for providing evidence of criminal activity.

Cybercrime may be define as "a crime committed via Internet, when the target is digital material on a connected device or the aim is to disrupt system or services" (Johnson M., 2016).

The types of cybercrime most discussed in the literature over the last decade are financial theft, hacking, identity fraud, cyberbullying, illicit online networks or markets, child sexual exploitation and the newest ones: digital surveillance and information privacy.
A first objective of this article is to present the concept of Digital Era and its challenges like the increased vulnerability for cybercrime, expanding theoretical frameworks. Secondly, it will be presented the newest cybercrime tactics and its costs for private and public sector in order to highlight the importance of this phenomenon. Another objective of the research is to identify ways of minimizing the impact of cybercrime and preventing it.
Considering the objectives of the article, the research methods used are theoretical research of specialized articles, using quantitative analyse. One step was to understand what implies digitalization in order to identify the challenges of Digital Era.
Also, the concepts cybercrime and cybersecurity and the existing statically data set about these topics were analysed for presenting their importance. Then, the tactics and costs of cybercrime have been explained, using synthesis. Last, using the logical research method, were presented ways of minimizing the impact of cybercrime.

Challenges of Digital Era

According to the 2016 report of Institute Mines-Telecom, due to digitalization, companies must always rethink their business flows, including the interaction with stakeholders in order to face the global competition with new entrants which may use the business model born-global, helping by technology.
Using information technologies, living in "e-everything" world has also disadvantages because crimes committed through electronic means evolve considerable, crossing national or transnational borders, reaching the global scale.
One innovative technology is represented by *big data*. These data are coming from multiple expanding sources, including tracking social media content, website activity or video data. For example, approximately 24000 terabytes is processed every day by Google (Institute Mines Telecom, 2016).
Actually, the key principle of these new technologies is that data are permanently changing. This is the reason why the key success principle for companies is to accept the constant changes and to respond agile as quickly and as efficiently as possible.
Big data creates a network architecture which permanently shares information, allowing companies to identify opportunities, but also offering perspectives for committing cybercrimes using these data.
Likewise, in the Digital Era we are speaking about the *Internet of things*. It refers “to the use of sensors, actuators, and data communications technology built into physical objects—from roadways to pacemakers—that enable those objects to be tracked, coordinated, or controlled across a data network or the Internet” (McKinsey Global Institute, 2013).
Nowadays, devices, machinery or infrastructure have included networked sensors that allow monitoring their environment or reporting their status. Moreover, these devices receive instructions and action responding to the instruction received.
The number of devices which are now connected worldwide to internet exceeds nine billion, including smartphones and computers. In the next decade, it is expected that the number of these devices will reach one trillion.
The estimated impact of the potential of Internet of Things is between $2.7 trillion and $6.2 trillion by 2025 (McKinsey Global Institute, 2013).
The challenges of this innovative technology are about privacy and security. Involving data connection for allowing remote machines to respond, these may be hacked by terrorists or criminals. All data sets collected by monitoring could be abused. Moreover, the home controller applications can be debated concerning autonomy and privacy.

Network reliability and data represent important concerns because it may be the targets of terrorists, criminals or hackers. For example, if the electric system's network and sensors will be controlled by terrorists, the attack will be threatening.
Internet of Things devices represent nowadays "the biggest technology crime driver" (Herjavec Group 2019 Official Annual Cybercrime Report).

Costs and new tactics of cybercrime
The evolution of cybercrime is similar to the evolution of street crime, due to population growth. Nowadays we have an increase of internet users. Cybercrime creates huge damages for private and public sector, costing 6 trillion USD, according to Herjavec Group 2019 Official Annual Cybercrime Report. The global expenses for cybersecurity will cumulatively exceed 1 trillion USD for 2017-2021, citing the same report.
For example, according to Alvarez Technology Group, in US, a hacker tries to attack a computer connected to internet every 39 seconds. Researchers from University of Maryland discovered that one of three Americans has already been target of a cyber-attack.
Concerning the typology of cybercrime, David Wall synthesises four types of cybercrime (Stratton, 2017):

- cyber-trespass which supposes system hacking, malware – malicious software or online attacks through unauthorised access to a network, computer system or data source;
- cyber- theft which includes financial or data thefts, electronic piracy or intellectual property rights thefts, being facilitated through malware, identity fraud or fraudulent scams;
- cyber-porn and obscenity which includes child sexual exploitation and grooming materials;
- cyber-violence, which involves harms like cyberbullying, cyberstalking or acts of terror caused to others (e.g. sharing instructions for manufacture explosives or other weaponry).

A new trend for criminals is to abuse cryptocurrencies for criminal activities. According to Europol, cryptocurrency users or intermediaries represent victims of cybercrimes. The target of traditional cyber-attacks - traditional financial instruments is now replaced by users of cryptocurrencies.
Hacking attack or personal data theft affects currency exchangers, miners and cryptocurrency wallet holders (Europol - Internet Organised Crime Threat Assessment Report, 2018).
Having new Mac and Windows malware, using mining APIs or server-side attacks, criminals continue to try this type of attack (Malware Bytes - Cybercrime tactics and techniques: Q2, 2018).
Cryptojacking represents a cybercrime trend, involving the exploitation of miners who use processing power for mining cryptocurrencies.
Cybercriminals hack websites for exploiting visitor's systems. Like hacking, cryptomining malware has the same effect, crippling the victims system through monopolising the processing power.
This happens by a script running in an website, through the browser of visitor, allowing the website to use the processing power of visitor for mining cryptocurrencies, during his visit.

Also, terrorists use cryptocurrencies for fundraising. According to Europol, in November 2017, the website Akhbar al-Muslimin requested for Bitcoin donations. First, the link redirected to an external payment site in Bitcoin.
Then, the link redirected to a page that created Bitcoin addresses, existing the option to donate outside the page, including malware into the website for mining, fact that confirms technical sophistication.

Cryptocurrencies are used for money laundering, being decentralized and not regulated. For example, small amounts could be traded through more cryptocurrency accounts, owned by the same person or by a network for fraudulent purposes or it could be used multiple transactions of cryptocurrency for cash through individuals, avoiding exchanges which may apply Know Your Customer policy.
Another target for cybercriminals is represented by the global phenomenon of social media networks (e.g. Facebook, Instagram, Twitter). Being free, billions of users communicate through these networks, a part of them being addicted to post a lot of personal information, almost living virtually. Even though social media represents an advantage of Digital Era, these networks has a huge potential for cyber criminals.
First of all, cybercriminals may attack for having access at personal information like name, date of birth, date about family and friends, address, telephone number. LinkedIn was hacked and it has been exposed 6.5 million users and passwords (Johnson, 2016**).**
Another vulnerability of social media is the identity verification. It could be easily created fake accounts, using attractive photos in order to harass or to target potential victims. Criminals could locate, identify and investigate them.
For example, scammers use Twitter for coordinating spam campaigns which promote fake tech support (fig no. 2).

Fig. no. 2 Fake malwarebytes number on Twitter
Source: Malware Bytes - Cybercrime tactics and techniques: Q2 2018

Also, there is a reputational risk that can be quickly affected by a negative message which is massive shared. For example, 'Twitter Storms' which involved the target of a brand and thousands of critical messages written by users and read by a lot of consumers worldwide in few minutes (Johnson, 2016**)**.
Moreover, social media networks are abused by terrorist groups, sharing propaganda photos and videos in order to organise attacks, to fundraise and to recruit, apparently using legitimate the services.
Another important aspect is the fact that children have easily access to social media networks, on their smartphones, being unmonitored and represent potential victims of child sex offenders.
Although tactics for cybercrime evolve with new technologies, according to Europol, social engineering is the most used method. 40% of EU Member States performs investigations for phishing cases. In March 2018, 20 suspects were arrested in Italy and Romania for banking fraud of 1 million euro coming from customers of two important banking institutions, after a

two year cybercrime investigation (Europol - Internet Organised Crime Threat Assessment 2018).
Phishing via email is the most used form, followed by vishing (used via telephone) and by smishing (used via SMS). Social engineering is used by criminals in order to get personal data, to steal identities, to hijack accounts or to initiate payments on the stolen identity account. Also, they may convince victims to transfer money or to share personal data.

Ways of minimizing the cybercrime's impact

The fight against cybercrime should be both at public and private level. For adequate policies regarding cybersecurity and for allocating the right budget, reliable data are necessary for governments in order to have measures cost-effective. More detailed, money allocated for preventing and detecting cybercrime should be compensated by a decrease in losses coming from offences (Armin et al., 2016).
International cooperation for setting directives, conventions and guidelines is absolutely necessary in order to prevent, combat, investigate and fight against cybercrime.
Cybercriminals may be everywhere, and it will be necessary that any jurisdiction may be compliant for locating, preserving evidence, investigating and for judging fair this type of crime, respecting the human rights standards (Casey, 2011).
Companies should invest in the education of the personnel in order to understand the spread of cybercrime and how to protect the cybersecurity of the company. The amount spent globally for the trainings of employees is estimated at $10 billion, until 2027 (Herjavec Group 2019 Official Annual Cybercrime Report). It's essentially that employees of a company should know how to recognize and defend cyber attacks.
Private and public sector should invest for research and for solutions which prevent cyber attacks, because just detecting existing threats is not enough. They should anticipate and respond to the newest threats before the fulfilment.
Top cybersecurity companies innovate by creating products and services which fight against cybercrime. They are known as managed security providers and takes risks for organizations worldwide.
For fighting against social engineering, the most used method by cybercriminals, it should also be invested in the education of technology users through awareness and prevention campaigns. The campaigns may be targeted to the features of potential victims (teenagers or adults).
These kind of campaigns should also be apply to users of cryptocurrencies for avoiding being victims of cryptojacking.
Last, but not least, cybercrime investigators should be specialized in investigating cryptocurrencies.

Conclusions

One important disadvantage of the new Digital Era represents the rise of cybercrime, cyber-attacks or cyber espionage on the global scale, but also through innovation and last technologies, cybersecurity companies should create products and services which successfully fight against cybercrime.
Cybercrime creates huge damages for private and public sector, evolving with new technologies. The target of traditional cyber-attacks - traditional financial instruments is now replaced by users of cryptocurrencies.
Nowadays, companies should accept the constant changes and should respond agile to them as quickly and as efficiently as possible. They should invest in cybersecurity for preventing cybercrimes, including training for employees who should know to recognize and defend cyber-attacks.

States should invest in cybersecurity, including trainings for investigative tools of the newest technology in order to anticipate the cybercriminals' moves or awareness and prevention campaigns for the users of the new technologies products like social media, cryptocurrency or Internet of things.
Moreover, international cooperation for setting directives, conventions and guidelines is absolutely necessary in order to prevent, combat, investigate and fight against cybercrime.
Until countries' criminal laws will be harmonized, new cooperation procedures will be developed, based on advanced technology and advance study of these technologies, cybercrime will mostly win.
Considering the new technologies detailed, the tactics of cybercriminals applied to these technologies explained, some solution for fighting against cybercrime, this research could represent a starting point for the future regulatory framework.

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ROMANIAN FOOD WASTE ANALYSIS

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Abstract

Food waste is a major problem that is concerning modern world and affects all developed countries. Many international organisations tries to implement programs to reduce the food waste because it concerns the environment, social and economic issues.

Romania doesn't have a food waste in the same size as other countries from European Union, but also doesn't have a high standard of living and high income per capita.

In this paper we conduct a qualitative research through structured interview with NGOs that are present in the food waste problem to discover good practice for developing a method of cooperation between companies that are producing and selling food and NGOs that are donating food for poor people or for people that have social care.

Some of the findings suggest developing the concept of food bank in Romania, which is only a beginning, develop information campaigns for population, build canteen near retailer and develop partnership with universities.

The study is limited by small number of NGOs questioned and should be continued with focus group and quantitative research among population.

Keywords

Food, waste, logistics, NOG, consumer behavior

JEL Classification

L66, Q53, M39

Introduction

Food Waste is a problem that affects three areas of development: the environment, the economy and the social. Food Waste is defined as the decrease in the quantity and quality of food in the chain from the manufacturer to the final consumer because it has not been consumed, expired or deteriorated as a result of consumer behaviour, management Stocks or negligence. Food Waste is strongly associated with the protection of the environment and the use of resources in an efficient way, food waste having a negative impact on the environment due to the gas emissions of operators within of the food chain (producers, intermediaries, sellers, consumers) and losses generated by agricultural activities. For a country to be considered safe in terms of nutrition, it is necessary for the citizens of that country to be able to procure the necessary food without making a very large physical, social and economic effort, and the food is healthy and Suitable for the diet. Food Waste is influenced by certain contextual factors such as reasons, financial attitude, routine, surplus food, social relations or even certain religious aspects such as posts (Aktas et al., 2018).

Food Waste has come to be a problem that organisations like the United Nations or the United States Ministry of Agriculture have put on top of the priorities. Among the most polluting countries because of the gas emissions generated by food waste include the United States of America, consuming a quarter of the drinking water and 300 million barrels of oil annually to produce and distribute food, which in the end are wasted. The value of the waste totals over 161 billion U.S. dollars. It is Not only affected by the economy, but also nutrition, because of food waste losing over 1200 calories daily for each person. Research in the area of food waste has concentrated in the area of final sellers (large stores chains) and consumers. Shop Chains have a problem with excessive product stocks, and consumers have a problem with food consumption. Among The partners co-opted in the process of reducing food waste are also universities. They have been co-opted because students can be good ambassadors in educating society to consume food in an efficient way, without wasting, and because in every university there is a food service (student canters), Where consumer behaviour can be observed with regard to food and various experiments can be sought to create effective methods of reducing food waste. Among the methods used to reduce the waste in the student candies were the reduction of the portion of food, the smaller cutlery offered to students to be able to eat and educational messages. The Effect of these methods consisted in reducing by almost 20% the reduction of food waste, mostly because of students were no longer throwing food (Ahmed et al., 2018).

Not only the chains of shops that are responsible for selling the final product to consumers, but there are also producers-sellers, those producers (farmers) who sell their products in local agri-food markets. In such a market in N-V Italy, research has been conducted among 35 farmers to determine what their perception and behaviour is in relation to food waste and to determine a way of managing products that are not sold. The Result of the study showed that farmers are concerned about food waste and are willing to donate food that is not sold, with high ethical thinking in what products are not sold and end up being discarded. Younger Farmers are more willing to donate unsold products but are very little informed about the various associations aimed at donating food. The Authorities need to be more involved in popularizing activities for the donation of non-sold products, with associations that have been established with this purpose (Bonadonna et al., 2018).

Other important participants in the supply and delivery chain are also restaurants. They procure raw materials and provide final consumer with finished products – different dishes. An important aspect in any restaurant is represented by the kitchen. In the kitchen, the finished products are realized, the menus are taken and the raw materials from the suppliers are taken over. The Relationship with suppliers is important because a change in the menu of a restaurant or the demand for certain products requires a correlation with stocks of raw materials and the time when the supply is carried out. Also, the way in which they treat employees, especially the chief chef, the problem of waste will have an influence on the level of food waste. But food waste has more to do with products that have lower caloric intake and less with protein-rich products (Charlebois et al., 2015).

The aim of the present paper is to find good practice, from Romania, regarding logistics for combat food waste from companies (retailers and producers) to beneficiaries (NGOs and people that don’t have what to eat).

Good practice for reducing food waste logistics activities need to be coordinated within the framework of a functional industry system in which manufacturers, distributors and sellers are present. ALL participants in the supply chain must be coordinated among themselves through a unified system within an industry, so that they work in a coordinated way, leading to reduced losses (Liljestrand, 2017). The logistic system and the increasing efficiency of its management can also be complemented by increasing the duration of the product's presence on the shelf. These two combined actions would lead to a reduction in waste (Gadde and Amani, 2016).

1. Food waste in Romania

Worldwide it is estimated that a third of the food products used to feed people are wasted in one form or another. This statistic is transformed into 1.3 billion tones in absolute value. At European Union Level It is estimated that a quantity of 88 million tons of food is wasted each year, with these foods being divided throughout the food chain, from the manufacturer to the final consumer. In other words, a person wastes 173 kilograms per year of food and is consumed 170 million tons of CO2 for this waste, from the manufacturer to the destruction of food by economic operators and the destruction of food thrown by the final consumer. The final consumer represents more than half of these food waste, the second place in which food processing is processed by 19% and 12% food services. At the European Union level Romania is on the penultimate spot in terms of the level of food waste reported in each inhabitant by 76 kilograms. Consumers are still very few informed about food waste and the significance of food labels, so many consumers do not know how to read a product label and often discard the product, although it may have Be consumed (if retained in accordance with the instructions), even if the term stated on the label has been exceeded, if the label is mentioned “best before”. However, that reference must not be confused with the indication on the label “expire date”, which means that after that date it is no longer safe to consume that product (European Parliament, 2017).

The Romanian Parliament adopted a law in 2016, Law No. 217/2016, in which agri-food operators must take well-established measures to reduce as much as possible waste of food but could not be applied due to the absence of the implementing rules. The implementing Rules were adopted at the end of January 2019 by Government Decision. These rules will be able to donate food products to reduce food waste. The economic Agents that will opt for this measure will have tax facilities, i.e. they will be deducted from the profit tax on donated foods. The Food to be donated shall be those which have a validity of up to 10 days until the expiry of the validity of the products. Perishable foods such as vegetable juices and unpasteurized fruit, vegetables and pre-cut fruits, as well as microbiological perishable animal products like the different types of meat (bovine, swine, goats, sheep), may Not be donated, Milk and milk products, fish or eggs. The Donation will also be made to economic operators such as public catering establishments or social canons (Ministry of Agriculture and Rural Development, 2019).

According to the National Waste Management plan, produced by the Ministry of environment, households generate more food waste than the manufacturing industry, retailers and combined hotels, with responsible households for almost 1.7 million tons of food waste, and the sectors mentioned slightly above 1 million tones. In a research conducted by the Foodcare.ro platform, young people under 35 waste food more than any other age groups, and families with children below the legal limit have an increased level of waste. The biggest waste of food is recorded in the urban environment, while rural communities use traditional methods of harvesting food waste in the household. The Money spent by a household on discarded food is about 40 euros/monthly, given that 10% of the food reaches the litter, and average expenditure on food amounts to almost 400 euros monthly/household, three quarters of the level Average income per household (Foodcare, 2017).

2. Methodology

The purpose of the research

The main purpose of the research process was to find good practice, from Romania, regarding logistics for combat food waste from companies (retailers and producers) to beneficiaries (NGOs and people that don’t have what to eat) . Our research question was “Which is the best way (methodology) of taking food (food that is wasting from companies) and giving to the people that are in need (through NGOs)?”

Objectives

One of the main objectives pursued of this work is to improve the food donation process regarding the ways in which associations get in touch with companies (retailers, restaurants and producers) and with the people, both people who help them in this process and people who receive.

Also, one other important objective in this paper is to find (to be familiar) the people opinion about saving waste food in order to change their thoughts and their attitude when they want to throw the food, to find good methods to involve more and more people in this process.

Hypotheses

Starting from the objectives and purpose of our research outlined above, we could formulate the following hypotheses to be tested in this paper.

We said that combat of food waste is not so developed in Romania and need to be done a lot of things, because there is not a law implemented, retailers are not so interested in donating food to NGOs, infrastructure that NGOs have is at low level and they are not so many campaigns about saving food waste.

Research design

Because we didn't know so much things about food waste process in Romania, we wanted to be familiar with this subject and we had to ask questions in order to find answers to detail our study, for that we used explanatory research. The technique used to collect data was the interview, which was structured. Each respondent had a list of open-questions for answering, the purpose was to get descriptive information from individuals. Questions were presented to each participant in the same order. The questions (13) were separated in two parts. First 7 questions refer to ways of reducing waste food, and the second part contains 6 questions regarding recommendations for improving collecting food waste and how to aware the citizens about the food waste problem.

Having questions split in two helped us to answer easily to objectives and to achieve the goal of the research. However, respondents who answered by phone had some extra questions, depending on how discussion where directed or less questions depending of which type NGO represented. As we said before some of the interview were via phone and others where held on internet, via E-mails, Facebook Messenger or Skype.

Population of this research was formed by all NGOs which are working in this type of activity. We sampled using nonprobability method, convenience and snowball sample because the selection of respondent was via internet (we found one file on *Mai mult verde* website that contained some of the most important NGOs fighting against food waste) and after we asked the name of the other representative persons, if they knew (Mai mult verde, 2017).

The sample unit in our research we considered to be on NGOs (an individual person that is representing an NGO).

Respondents

We found eight NGOs, with e-mails and phone numbers, in the document about how food waste can be saved in Romania on *Mai mult verde* (Greener in English) website. We sent e-mails to all NGOs and we didn't receive any answer. After this we contacted persons who represent this NGOs on Facebook, Skype and via phone. We managed to obtain two answer via Facebook, one via Skype and two via phone. Using recommendations from previous respondents we obtained four answers, three via phone and one via Facebook. From our research (on Google) we had one other answer, which was via e-mail.

In conclusion were ten answers: one from e-mail, five from phone calls, one from Skype and three from Facebook Messenger.

We grouped respondents in three type of category:

- NGOs that are donating food to different categories of disadvantages people: these NGOs receive food donations from food bank, companies (retailers or producers) and individuals and give the food to the disadvantage's categories (i.e. poor people, homeless, family with many children) direct to their homes, on the street or canteen;
- Food bank: NGOs that are receiving food donations from companies (retailers and producers) and give the food to different types of NGOs;
- Social store: NGO that is receiving food donations from companies (retailers and producers) and sell the products to poor people (low income, social care beneficiaries) at a very low price;
- Other: one ex-worker from Ministry of Agriculture who was responsible of coordinating group work for the law and presented different materials on website of Ministry of Agriculture about food waste and means of combating it.

Period

The answers were gathered between 17th of December 2018 and 8th of January 2019.

Places

The NGOs, which were questioned, have the activity in three cities: Bucharest, Cluj-Napoca and Aiud (Cluj County).

3. Discussion

In Romania was voted in 2016 a law regarding food waste combating. After 2 years the law suffered some modifications and now companies (retailers and producers) can choose if they want to donate the food that is about to expire. Unfortunately, the norms of law application are not available, so the law cannot be applied, and NGOs have problems in discussion with companies about receiving food donations. Many companies prefer to destroy the food instead of donating to a social cause. NGOs are not satisfied with the law because companies should have an obligation to donate the food and not destroying. In exchange, companies should have free tax on food that is donated.

From the all NGO questioned about food waste food banks are the best structured regarding infrastructure, because they have specialized warehouse and car for transport. The rest of NGO are in partnership with local authorities or with some producer or food retailer, but these partnerships are not very well developed.

Respondents said that the current law should be improved, in the sense of the obligation for economic agents to donate those products that are about to expire and not optional. Companies should also benefit from tax facilities for the fact that they donate and the law to bring predictability, recurrence and cost reduction. There should be more consultation of the associations with all ministries involved such as the Ministry of Agriculture, the Ministry of Finance and the Ministry of Labor the various issues pertaining to each ministry.

The Part of the legislation could also be helped by co-operating management specialists to work free of charge and provide efficient and sustainable solutions both from a legislative and operational point of view (law enforcement).

There is a need for relevant and complete data on the amount of money that is saved because food is donated and not destroyed in order to make it easier for associations to discuss and obtain sponsorships from economic operators.

It would be necessary to redefine the term to be consumed preferably before for different categories of food. And There is a term for sale and a term for consumption. The Term for sales should be prior to consumption.

For products that can no longer be consumed by humans, they should be directed to animals or transformed into fertilizer for agriculture.

Associations responded that pilot projects are needed for economic operators for a limited period in which they donate products to an association, and if the donation is more

economically efficient than the destruction of products, Then the project should be applied globally as regards the trader (all shops in the case of a chain of shops).
Among the modalities most often used to contact the economic operators include the phone, the recommendation, the visit to the premises, the e-mail or the networking.
Some of the respondents said that it would be better if canteen would be developed in social areas, where are more poor people. So, NGOs and companies would be more present in this kind of areas.
One of the solution for developing more projects about food waste and have a better law is to have private experts in management and involved them (pro-bono) among other people from public sector, who could be trained, to know how to deal with any problem that occur and find sustainable solutions. When this kind of solutions would be developed lobby (from retailers and producers) must not interfere with politics.

Conclusions

Food bank should be more developed in Romania. It should be a food bank in each county from Romania. These food banks should be supported by the local authorities and private companies. Each food bank should have an adequate infrastructure (warehouse, cars for transporting) and employees to manage all the food that is received and given to NGOs.
NGOs should be specialized and have volunteers and workers to know how to deal with food (in terms of hygiene food). Besides this, they need to have a minimum infrastructure, which includes warehouse, cars and a place where to give food. Local authorities could support the NGOs by helping in all their activities with list of beneficiaries, canteen where to cook the food and so on.
Restaurant should implement hardware and software solutions (Win-now) to reduce the waste of food. They should have contracts with NGOs to donate the food at the end of the day.
Food can be used also as compost or like food for animals, if the conditions are not proper for people to consume it.
Canteen should be built near retailers and in social areas. Like this, retailers won't have a long distance for transporting the food and it would save time, which is very important for food that have few times till expire.
Law should support more the NGOs and the retailers by encouraging working and collaborating. Central authorities should realize that food waste is an important problem for society, and they should improve the law. Experts should be consulted to have solutions for different kind of problems regarding all the process of food donations, food collecting and infrastructure. Law should regulate terms of consuming and expiring and these terms should have different dates. This way would be easier for companies to donate and for food banks and NGOs to collect the donations. Poor people should have more to gain.
Beneficiaries that are receiving food donations should be encouraged to work (if they are not on pension) and adapt to today's requirements or needed professions.
NGOs should make campaigns to inform people that food waste is not normal, and they lose money. This could be done with media support and by making attractive videos and prints. Another channel to inform and encouraging saving food waste would be developing a mobile app and integrate in that all major stakeholders: companies, intermediaries, media and beneficiaries.
Universities should be taken as partners by NGOs and authorities and developed food waste through students like it happens in other countries and were presented in introduction. They would be encouraged to support and think about food waste and, in the future, we will have important results.

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THE BAKERY SECTOR OF ROMANIA – PRESENT, CHALLENGES AND PERSPECTIVES IN THE CONTEXT OF INCREASING COMPETITIVENESS

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Abstract

Romania has as long tradition in the agricultural sector, managing to produce important quantities of cereal crops each year. The rich and fertile soil and the climate of the country are helping the Romanian agricultural sector, Romania being one of the top ten world exporters of wheat in the world. Although Romania is producing a significant quantity of cereal crops that are able to cover the domestic demand for the country's raw materials for bakery products, the country choses to export a large portion of the cereal production. Meanwhile, our country imports significant quantities of bread, pastry, cakes, biscuits and other bakers' wares each year. The paper presents the state of Romania's bakery sector. The research method was based on analyzing the following indicators: imports and exports of bakery products; the average monthly consumption of bread per person; the trade balance of raw materials for the bakery sector. Even though the agriculture of Romania is prospering, the bakery sector cannot be competitive due to the lack of production materials and facilities.

Keywords

cereals, bread, pastry, bakery products

JEL Classification

O13; Q17

Introduction

The agriculture plays an important part in the Romanian economy, taking into account the size of the population that live in the rural areas and the rate of employment. Approximatively 45.7% of the Romanian population lives in the rural area, compared to 23.6% in the other European member states.

Also, in Romania approximatively 30% of the population works in agriculture, compared to about 2% in the old Member States and 3 to 14% in the new member states (MADR, 2015).

The Agricultural sector is representing one of the main branches of the Romanian economy (MADR, 2018). The geographic conditions of Romania, mainly the favorable climate and the relief of the country are helping to the Romanian agricultural sector to produce significant quantities of cereal crops each year (Angelache & Anghel, 2018).

Romania is one of the main producers of agricultural crops in the European Union and also one of the top ten exporters of wheat and corn, but still, the country has to import significant quantities of bread, pastry, cakes, biscuits and other bakers' wares each year in order to satisfy the people's needs and requests for bakery products.

The physiological requirements of the human body for nutritious substances vary individually and intra-individual. Within a limit below which essential needs are not satisfied or over which a number of nutrients become of necessity, man can live in full health at varying levels of nutrition. While the contribution of different groups of food products for the human physiological requirements is a complex problem, at a wide level, almost 40% of the human body calorie consumption is assured by the consumption of cereal products represented by bakery products or cereals and dried legumes (Diaconescu, 2016). The bakery sector has evolved alongside with the human society, bread being one of the base foods for a large part of the world. Bread, under different forms is representing one of the main foods for daily consumption in almost all the world regions and while being one of the most consumed foods since ancient times, bakery was and it will always be one of the society's main preoccupation (Rubel, 2011).

The popularity of the bread is given by the following attributes: high carbohydrates source; easy to transport; easy to store (Saseanu et al., 2009). The demand for bread and bakery products was and it will remain stable, taking into account that, the world population is in continuous grow. Also, the rise of the household income in the developed and in the developing countries plays an important part in the demand for these kind of products.

While bakery products range from the very simple variants of unleavened bread and vegan bread to the special bakery and pastry products, the bread is the most well-known product with the highest consumption frequency.

Depending on the flour, we can distinguish the following products: white bread; semi-white bread; black/dietetic bread; bread with added potatoes or rye flour and bread with added special products such as milk, oil, eggs, cheese, etc. (Schileru, 2015). Bread is by tradition one of the most popular food products in Romania, however, given the wide variety of products that have become available, the consumers are familiarizing with the foreign cuisine, and therefore their eating habit are changing, especially when we are talking about the people that live in the urban areas. Thus, in the search to buy and consume healthy foods, people tend to reduce the consumption of bread but at the same time, they chose to consume other bakery products such as pasta, biscuits, pie or cake (Nitulescu 2017).

The last two decades have produced a major revival in the market: besides the many traditional formulas, some "import" assortments have been widely claimed their presence. The biggest impact was the generated by the Turkish bread (with very high volume) and the Arabian Pita, which influenced the consumption patterns of many local consumers. (Schileru 2015).

Materials and Methods

In order to highlight the present, challenges and perspectives of the bakery sector of Romania, the following indicators were used: trade balance of cereals; the quantity and value of the bread, pastry, cakes, biscuits and other baker's wares that was imported and exported by Romania; the average bread consumption per month per person expressed in kilograms; the average wage;

The period analyzed in this study was 2013- 2017. The data used for this article is retrieved from the National Institute of Statistics (insse.ro) and from the International Trade Center (trademap.org).

Results and Discussions

Romania is one of the main European grain exporters. In the last five years, due to the continuous evolution of the agricultural sector, the country has managed to export significant quantities of cereals. The following table presents the trade balance of Romania's cereal sector from year 2013 to year 2017.

Table no. 1 Cereal trade balance (USD thousand)

Year	2013	2014	2015	2016	2017
Value $	2216175	2247481	1629073	1666460	1751675

Source: TRADEMAP, n.d. Trade statistics for international business development. [online] Available at: <https://www.trademap.org/Index.aspx> [Accessed 12 November 2018].

If we are to analyze the data from Table 1 regarding the trade balance of cereals from Romania we will see that the values are positive and the registered numbers for each year are high. In 2013 the difference between exports and imports of cereals registered a value of 222,216,175 thousand dollars, 2,247,481 thousand dollars in the year 2014, 1,629,073 thousand dollars in the year 2015, 1,666,460 thousand dollars in 2016 and 1,751,675 thousand dollars in the year 2017.

While the trade balance is positive, the cereal market is struggling with important problems. The lack of storage spaces for cereals combined with the internal prices of cereals has influenced the farmers to export their products, right after harvesting, leaving the milling and the bakery sectors without any source of materials.

The cereal transport system is an unbalanced market, taking into account that each transport route has its advantages and disadvantages. The transporting costs by barges on the Danube While Romania are relatively low but the transporters are facing problems in droughty summers.

The transport by train is safer but more expensive compared to the transport by barge, and, by far, trucks are the easiest way to transport cereals since Port of Constanta is the main way out of Romania.

While Romania managed to produce significant quantities of cereal crops each year, placing the country in the top 10 world producers of cereal and grains, the bakery sector lacks in competitiveness. The bakery sector of Romania is facing multiple problems, from lack of materials to lack of storage spaces, personal, and machinery.

Although Romania is one of the world largest producers of cereals, the import of bakery and pastry products has been significantly rising from one year to another.

For the analyzed period of time, the imports of bread, pastry, cakes, and biscuits were more than double in value and size, compared to the exports. Table 2 presents us the imported and exported quantities and values of bread, pastry, cake, biscuits and other baker's wares as follows:

Table no. 2 Bread, pastry, cakes, biscuits and other bakers' wares

Year	2013	2014	2015	2016	2017
Import values, USD thousand	218329	233380	234479	282643	325974
Import Quantity, tones	93244	100589	109952	127186	140730
Export Value, USD thousand	100361	114645	100167	118712	139898
Export Quantity, tones	44513	51603	53093	57561	59094

Source: TRADEMAP, n.d. Trade statistics for international business development. [online] Available at: <https://www.trademap.org/Index.aspx> [Accessed 12 November 2018].

In the year 2013, the imported quantity of bread and pastry products was approximatively 93,244 tones worth of 218,329 thousand Euros while the exported quantity was approximatively 44,513 tones worth of 100,361 thousand euros.
For the year 2014, the imported quantity of bread and pastry products grew up to 100,589 tons' worth of 233,380 thousand euros while the exported quantity of bread and pastry products was only 51,603 tones worth of 114,645 thousand euros. In the year 2015, it was registered a growth regarding the imports values and quantities, respectively the country imported 109,952 tons of bread and pastry products worth of 234,479 thousand euros why exporting only 53,093 tons of bread and pastry products worth of 100,167 thousand euros.
In the year 2016, the imported quantity of bread and pastry products was made of 127,186 tons' worth of 282,643 thousand euros while the exported quantity of bread and pastry products was only of 57,561 thousand tones worth of 118,712 thousand euros.
The year 2017 registered the highest values regarding the imported quantity of bread and pastry products from the last 5 years, respectively 140,730 tones worth of 325,978 thousand euros while the exported quantity of bread and pastry products was only 59.094 tones worth of 139,898 thousand euro.
While the imported quantities of bread, pastry, cakes, biscuits and other bakers' wares, has increased significantly, over the years, the bread consumption per capita has declined in contrast with the average wage that registered a significant growth (fig. no. 1).

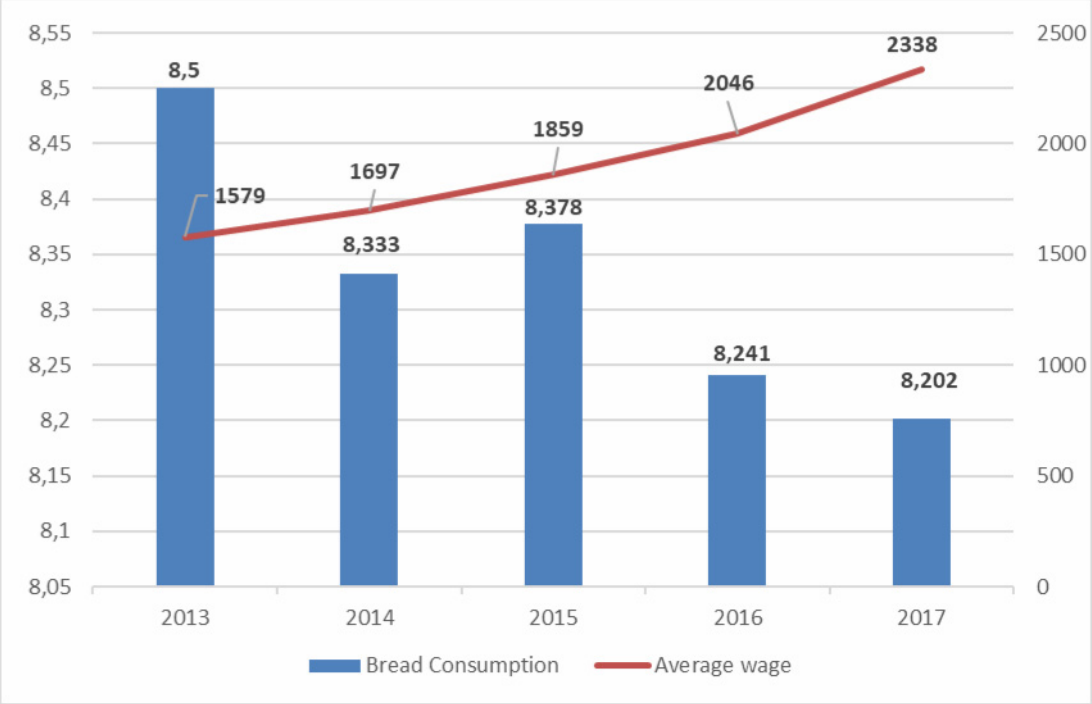

Fig. no. 1. Average Wage and Average bread consumption per month per person
Source: INSSE (www.insse.ro)

While in the year 2013 the average monthly consumption of bread per person was of approximatively 8,5 kilograms, the quantity decreased to 8.333 kilograms in the year 2014, then slightly increased to 8.378 kilograms in the year 2015, but, the next year in 2016, the bread consumption decreased to 8.241 kilograms for then to reached a value of 8,202 kilograms in the year 2017. At the same time, the average wage increased from 1579 lei in

the year 2013 to 1697 lei in the year 2014, 1859 lei in the year 2015, 2046 lei in the year 2016 and 2338 lei in the year 2017.
Over the last 5 years, we can see that the bread consumption per capita has registered a decrease, while the average wage increased significantly.

Conclusions

Romania has been and will be an important actor on the cereal market not only in the European Union but also at global level. It is well known that the country is situated among top ten world producers and exporters of cereals. While at surface, the cereal market is prospering, the other sectors that are dependent of cereals, respectively, the milling and the bakery sectors are facing multiple problems due to lack of materials.
While the cereal sector is facing problems regarding the lack of storage spaces, low internal prices and high transportation costs for the cereal products, the milling sector lacks in milling facilities and equipment, problems that are directly affecting the bakery sector. The fact that the exports of cereals are registering such great values and the bakery sector has to import frozen bakery and pastry is raising some serious questions.
While Romania is producing the raw material for the milling industry and also for the baking industry, the bakery sector needs to import significant quantities of bakery and pastry products to satisfy the internal demand for such products. Another problem that the bakery sector of Romania is facing is the decreasing average bread consumption per capita per year. The decrease of the bread consumption could be linked to the rise in the average wage, which highlights the fact that the population has access to new types of foods and their tastes are evolving. While bread was considered a base food since ancient times, the todays world has evolved not only in technology but also as behavior and taste patterns. It is a well-known fact that people from developed and in development countries tend to consume less bread and more bakery and pastry products such as cake, pie, biscuits and pasta, in the detriment of simple bread.
The Romanian cereal sector should be linked strongly to the milling and bakery sectors. The cereal sector should focus on delivering the raw materials in order to satisfying the people's needs regarding the bakery products, taking into account the high quantities of bakery and pastry products that are being consumed each day.
While the cereal sector of Romania is profitable due to the large agricultural surface and the good climatic conditions of the country, both the governmental and nongovernmental actors should focus on maximizing the potential for both the agricultural and the agrifood sector by encouraging the development of storage facilities for the cereal sector, milling and storage facilities for the milling sector and bread and bakery factories for the bakery sector.

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SOCIO-TECHNOLOGICAL PROCESSES AND SOCIAL MEDIA INTEGRATION ON E-LEARNING

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Abstract

Social media has been used in various ways to influence online users and guide them towards different purposes and goals, be it personal development, e-commerce, relaxation and, recently, more and more towards online education through various technologies such as Virtual Reality, MOOC's, interactive online classes or even instructional videos. As such, the purpose of this paper is to demonstrate the way in which different components of research, like web sciences, e-learning and cognitive computing are part of a whole and, also, that they open up new means of connectivity at a theoretical and practical level between themselves. Furthermore, the article will reveal the importance between these subjects and developing learning analyses. In order to reach these objectives we will be using references and information in regards to mechanic learning, data science and social awareness, either as technologies or as theoretical frameworks, which complete the aforementioned items.

Keywords

social media, e-learning, modern knowledge, innovation, new ways of learning, social process

JEL Classification

O35, O32, O15

Introduction

E-learning is an important sociotechnique phenomenon, referring not only to the learning management system at university level and similar levels of education but also to the generalized activity of technology-mediated learning (Haythornthwaite & Andrews, 2011). Finally, researchers seek to identify socially significant patterns among socially generated data such as Twitter and Facebook, models that denote social phenomena that are not immediately highlighted in the data collected. It is no surprise that the social media (SM) is an everyday element in our lives. Through SM we are constantly connecting organizations, users, customers and the rest of society. More and more in the last decade (and from the emergence of LinkedIn, Skype and Facebook) SM has begun to be used by companies for new ways of connecting, communicating, engaging with a wide range of people interested and learning human resources through e-learning platforms.

Thanks to the SM, a collaborative and innovative environment was born, the study and dynamic capabilities of the company co-evolved so that the transfer and the creation of knowledge become an integrated part of the process (Castellacci & Natera, 2013). In this context, the learners drew the attention on the development of an SM platform that enables companies to connect scattered information sources in an efficient and effective manner (Palacios-Marqués et al., 2015).

E-learning and social machines

The term e-learning includes all forms of teaching and learning with electronic support, including electronic books (ebooks), CD courses, online teaching tools such as e-learning platforms, video tutorials that are made available to different people either through e-learning platforms as a course support, or through other social media tools (Youtube, Facebook, Google+, etc.) that contribute to non-formal learning based on the Internet alone.

E-learning is about connecting people, technologies and services in order to meet the desire to educate. Interested people are: students, teachers, content providers and institutions, professional associations and educational councils; services correspond to learning activities based on pedagogical models (eg open learning and knowledge sharing communities) and training strategies (eg Problem Solving Exercises, Role Playing, Contextualized Instructions) while technologies are the ones that work to facilitate content (cure, access and generation) communication and collaboration.

A special relevance is the learning theory (Bell et al., 2013) in contexts that would not be concretely a learning activity and assimilation of knowledge becomes involuntary in contrast to deliberate. Which means that e-learning services, instead of being centralized, must be available as a general feature so it can generate a learning event amidst the student's desire to learn.

These other activities comprise the "authentic contexts" of learning, as they are the normal situation for proper knowledge. Another important aspect of learning theory, which can be seen as a concomitant necessity of locating the learning event, is its collaborative aspect. The learning event, providing clear content and connecting the student with an expert or teacher, involves them in a community of learning (Brown et al., 1989). Although this joint involvement implies the social construction of knowledge, perhaps the most important aspect of the analysis is the situation / learning event itself as a phenomenon, which indicates the learner's experience. This means that in the end both behavior and knowledge must be taken into account.

Electronic learning, like all augmented social processes, in which a human agent disappears and is represented by a live video or other representation, works to replace real presence with a smaller type of presence: telepresence. This affects the way students take risks and how they develop their relationship with teachers as apprentices, which is particularly important for "acquiring skills" (Dreyfus, 2008). This can be understood as a superior boundary that distinguishes such types of e-learning from traditional learning and is something about which recent learning patterns are based around learning (Garrison, 2011). These models explicitly suggest how a portion of this lack of presence can be mitigated. While e-learning focuses on socio-technological processes with educational goals, web-based science has instead a scope that extends over the overall space of socio-technological processes.

Social machines do not just denote a key phenomenon that makes up the modern internet. Instead, they are radically present in the whole range of modern human life. These were the means to enable sub-cultures of decentralized human activity, which were particularly disruptive and have a particular influence in shaping modern human experience. Social machines are the predominant participatory phenomenon involving billions of users.

These were the means to enable decentralized sub-cultures of human activity that have influenced in a particularly alert fashion the modeling of modern human experience. Social machines are the predominant participatory phenomenon involving billions of users. E-learning situations, we propose along with (Yee- King et al., 2014) are learning machines. These are a subset of social machines with educational objectives that go beyond any social goals that may be present. This concept is not alien to web science because acquiring knowledge is indeed a common goal of social machinery. This section explores some implications of the relationship between web science and e-learning, which is not addressed in other papers. As a sub-type of social machine, a learning machine inherits the properties of general social machinery, while providing additional properties. With regard to the administrative and creative part of a social machine, in an e-learning context, bringing together people and diverse content to serve as an instructive strategy can be understood as the administrative side. as a sequencing of relevant strategies, to design a personalized learning event for a particular learning context. The additional properties of a learning machine along with study methodologies, such as learner analysis (Aljohani & Davis, 2012), can be understood as a type of social machine analysis with respect to educational objectives. This alignment of a social machine learning machine by understanding it as a social machine is particularly suitable due to the trend towards social learning towards e-learning (Zhang et al., 2015), in which social learning is in particular responsible for promoting individual creativity among learners in an online context.
The use of e-learning platforms for vocational training generally presents a set of benefits, of which the most important are the ones in the table no. 1.

Table no.1 Advantages of e-learning platforms

Advantages of using e-learning platforms	
Time	This advantage relates to the fact that the students who are accessing will not have to be present in a specific place, such as a classroom, within a certain timeframe. Another factor contributing to this advantage is due to the course support provided by these platforms, support that comes in either electronic books (ebook, PDF) or audio / video or streaming format.
Location	This advantage is a direct consequence of the fact that e-learning platforms are based on the internet. Students / learners can access e-learning platforms wherever they are by using mobile devices (Tablets, Smartphones etc), laptops, personal computers, public libraries, etc.
Productivity	This advantage only occurs in the case of e-learning platforms that have been created by companies to prepare employees in the context of lifelong learning (LLL). Considering that we are in the age of rapid technology change, it is more cost effective for companies to invest in such methods to prepare their staff and knowledge base than sending them to classical, formal courses.
Cost effectiveness	Due to the fact that e-learning platforms are installed on the servers, which does not require much space compared to the classical teaching methods where the classrooms are necessary, and also because the number of teachers / tutors is low, the costs are substantially reduced . Also, the costs for teaching materials are reduced due to the fact that they are distributed in a digital manner. These aspects are also reflected in students / learners by the fact that

	the only cost they will bear is that of the internet connection and the device it uses to connect (of course this applies only to e-learning platforms free, not for e-learning platforms that have either a cost per course or cost per account)

Social integration in e-learning and social media for qualified human resources

In our research we addressed the dimension of social integration to study the effects of using e-learning platforms and interacting with social media to develop on a non-formal path a much better qualified human resource.

In particular, the adoption of the SM has determined how companies communicate, collaborate and innovate, both through the use of internal and external knowledge sources. At the same time, the absorption of these technologies has influenced organizational processes, and has led to the identification and development of new skills and capabilities. In order to achieve the benefits, researchers have called upon enterprises to adopt a SM strategy with intent (Dutta, 2010; Kietzmann et al., 2011). The evidence highlights the use of SM for strategic awareness (Hill et al., 2006; Trusov et al., 2010), operational awareness of all companies (Benbya & Van Alstyne, 2010) and reconfiguration of innovative ways by redefining the cobra (Mangold & Faulds, 2009; Zwass, 2010) and learning (Peppler and Solomou, 2011). However, what has been discovered has barely managed to break the ice of what may be possible, with significant opportunities in the future for researching, exploring and examining SM interactions and innovation, like the posibility of inserting social media aspects in smart cities through „(...) ensuring interoperability between public administration and business and citizens (...)" (Alpopi & Silvestru, 2016). Essential progress consists in conceptualizing social integration. We consider that social integration involves two dimensions: a link dimension, representing the presence of social connections and social support, and a competitive dimension, representing social statuses in a form of hierarchy that can bring prestige (Tufekci, 2008). We believe that individuals are addressing social media platforms when they are more integrated both in a social and competitive relationship. Even those social experiences that are considered negative, as well as antagonistic interactions with others, are part of what makes the adoption of social media valuable to those who are integrated; social competition and conflict with colleagues are the integral part of community participation, and thus provide an impetus to participate in social media as well as positive feelings and experiences. Application of technology is the most important for those students who are most integrated, both in connection and in competitive terms, and promotes their social integration process (Maier, Sven-Joachim, Fortmüller & Maier, 2017).

Our focus on social integration, both as support and as a competitive one, is drawn from the perspective that participation in a group sometimes involves behaviors that are often considered to be detrimental to social life; confusion and aggression towards other members of the group are features of the groups. A series of theoretical and empirical accounts highlight the integral role of aggression and confrontation in the statutory order of groups (for example, Faris & Felmlee, 2011; Gould, 2003; Martin, 2009). Social competition and social support capture different but equally important aspects of group integration, whether those groups are students in a middle school or scholars in academic disciplines. We know that scientists at the center of academic discipline have taken positions in opposition to colleagues, while encouraging collegiality. The integration idiom we use here, "mixed," involves the desire to "blend" - to engage with others through the forms of support and competition that drive the community to become more dynamic.

Use by the social media as part of the internal communications strategy can transform how employees and experts in the company participate in innovative training courses using e-learning platforms (Sun Microsystems in Barker, 2008). SM features allow you to create

personal profiles that highlight your experience and areas of interest among other menu options. Thus, the use of SM in learning brings together different "voices" to facilitate the generation of ideas and the hosting of conversations as well as intentional. While using SM for e-learning at macro and meso-tide levels to highlight interactions with the company and the end-user, micro-level is often emphasized on the learning communities. Often managed by the company's training manager, learning communities are designed to mobilize sources of internal and external knowledge and to facilitate collaboration between experts, teachers, employees, partners and suppliers.

E-learning systems are universal in this manner, often exhibit lean learning scenarios where they have a significant social influence (Aljohani et al., 2012). We claim that they work to fulfill Illich's ideal of informal education in a rather unprecedented way (Czerkawski, 2016; Goldie, 2016; Illich, 1973). An ideal whose achievement corresponds to a means of combating the partial social inequalities generated by the still dominant dominant institutionalized forms of learning. Consequently, learning machines were the most destructive of all social machines.

Conclusions

As social media and technology keeps advancing into our daily lives, and society becomes more dependent on technological interactivity instead of face-to-face interaction, we consider that this technological aspect should be implemented in educational fields in either a formal manner or an informal/non-formal manner. Thus, as mentioned in this paper, learning and technology complete each other and are used more and more, albeit with limitations in some fields, but we are close to reaching a consensus in regards to how much we should let technology guide and teach future generations and how it should influence social aspects of our lives. Thus we consider that social media should be used more in trying to guide and teach future generations or even older generations, by giving them the opportunity to gain skills and competences through its use. Furthermore, by implementing technology on even deeper levels, we as a society will gradually change from a society that learns how to use technology to one that is thought by and through technology, which in turn will result in further widening our learning spectrum and educational efficiency as a whole. Thus, having social media be implicated in more and more fields in order to help improve skills and competences either through educational platforms, virtual technologies, mobile applications, instructional videos or other variants, is something we as a society should aim for implementing more and more in order to improve our general knowledge as a whole.

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GREEN BONDS - FORM OF ECOLOGICAL PROJECTS FUNDING

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Abstract

In the context of an increased emphasis on climate change and sustainability, the funding of environmentally-friendly projects has become an important alternative to attract funds for responsible entities both in the public and private areas. Globally, green bonds are currently the most developed form of funding for major projects with considerable impact on the environment. The present study aims to present an analysis of the evolution of the global green debt market. Since its inception in 2007, the green bond market has grown rapidly both in terms of scope, average size of issuance and diversity of issuers. The development of the green bond market will be influenced by the diversification of issuers as well as by the value of the issues.

Keywords

green bonds, green investment funding, Green Bond Principles, "Green" Bond Market

JEL Classification

G23, M14, E00, F41

Introduction

Green funding is a phenomenon that combines the world of finance with the business environment. It is an arena for many participants, including for individual and business consumers, manufacturers, investors and financial creditors (Wang & Qiang, 2016). Ecologic funding places more attention on ecological or environmental issues and also on the funding of green investments.

Financial instruments are the most essential tools for green investment funding. Globally, green bonds are currently the most developed form of funding for environmentally-friendly projects.

Considerations on green bonds

Green Bonds are a "simple" fixed income product that gives investors the opportunity to participate in financing green projects, that helps diminishing the effects of climate change and helps countries adapt to the climate change (Reichelt, 2010).

Green bonds are an important financial instrument used to fund projects with a positive impact on the environment and / or society and help issuers having a smooth transition to a more sustainable economy. They have the basic function and characteristics of the usual bonds. The main difference between green bonds and any other type of bond is the destination of funds attracted, which should be used exclusively to fund or refund projects with clear environmental benefits (green projects). Eligible green projects that can be funded by green bonds include renewable energy projects, energy efficiency, pollution

prevention and control, or projects related to products, technologies and production processes, ecological transport, or any other projects meant to conserve the biodiversity of terrestrial and aquatic ecosystems.
According to the International Capital Market Association (ICMA), "Green" bonds represent a type of bond whose funds will be used exclusively to finance or refinance, partially or wholly, new and / or existing Green Projects that comply with the four basic principles (Green Bond Principles).
In order to qualify as green bonds, debt securities issue must follow a set of four core principles - the Green Bond Principles (GBP) issued for the first time in 2014 and updated annually by the International Capital Market Association (ICMA):

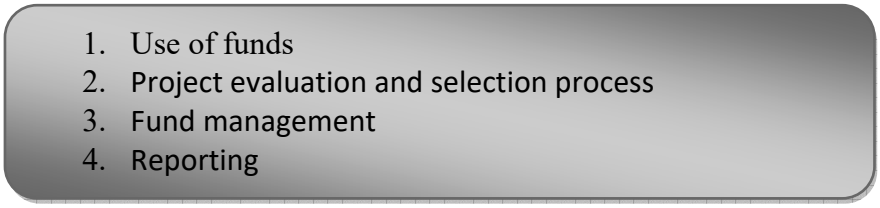

Fig. no. 1. The Green Bond Principles (GBP)
Source: Green Bond Principles (GBP), 2017. Ghidul pentru Emisiunile de Obligatiuni "Verzi". https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/

Even though the principles published by the Climate Bond Initiative also meet in literature, they are less used than those developed by International Capital Market Association (ICMA). The Green Bond Principles are useful to all market participants, either issuers, investors or investment banks because they require a set of values and standards generally accepted by market players. Although there are no mandatory criteria on what is "green" or what type of green shades respect the threshold, these principles catalyzed the issuance and interest of investors (Kochetygova & Jauhari, 2014):
Green bonds bring a number of significant benefits to issuers (Oncu, 2018):

- Issuing green bonds can attract responsible investors interested in supporting sustainable projects;
- The issuer can broadly expand and diversify its investor base;
- Strengthening the brand and image of the issuer concerned, due to the social responsibility actions undertaken through the development of green projects. These advantages, on the other hand, are also a source of challenges for the respective issuers.

A further challenge is the ongoing change in the general legislative framework and the principles governing green bonds as well as the regular occurrence of new valuation criteria that issuers have to pursue to meet investors' requirements.
For investors, in comparison with bank deposits, green bonds tend to provide greater profitability, liquidity and stability, which are responsive to diversification of investors (Wang & Qiang, 2016). There are also opinions of other authors (Paranque & Revelli, 2019)who argue that there are many advantages for investors. Investors who will place funds in such financial instruments will know the exact project where the funds are invested and will therefore be able to analyze the quality of the issuer through the various green bond valuations.
The issuance of green corporate bonds has become more widespread lately, especially in industries where the natural environment influences financial issues. Caroline Flammer analyzed the yields of green corporate bonds and the results of the study indicate that green bonds are effective - companies invest their income in projects that improve the company's environmental conditions and contribute to long-term value creation. At the same time,

research findings show that these bonds are attractive to environmentally sensitive investors who seek to improve them and protect the environment (Flammer, 2018). This finding contributes to literature showing that better environmental, social and governance performance (ESG) improves access to finance (eg Cheng, Ioannou & Serafeim, 2014; El Ghoul et.al., 2011) as well as emerging literature exploring investor preferences for the implementation of ESG factors (eg Barber, 2007; Dimson et.al., 2015; Dyck et.al., 2018; Starks et.al., 2018).

Analysis of the global evolution of the green bond market

The "Green" Bond Market aims to develop the key role that capital markets can play to fund projects that contribute to environmental sustainability.

At present and in the same way as responsible investments, the green bond market is concentrated in the hands of institutional investors and asset management companies.

The first green bonds issue was originally launched in 2007 by the European Investment Bank and World Bank. Since then, the green bond market has world-wide experienced the initial development stage (2007 ~ 2012) and in 2013 the green bond market get involved in a rapid development, as the first private sector companies have begun to issue green bonds starting with 2013 (fig. no. 2). In 2016, the first issue of sovereign green bonds (GB) launched by Poland, followed by other countries in Europe (France, Belgium, Ireland) or the world (Fiji, Nigeria).

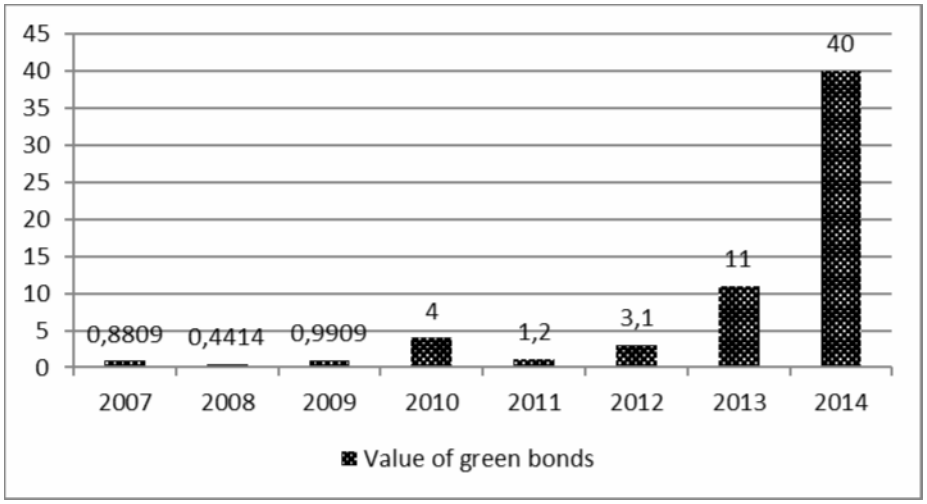

Fig. no. 2. The evolution of the green bond market value 2007-2014

Source: Kochetygova, J. and Jauhari, A., 2014. Climate Change, Green Bonds and Index Investing: The New Frontier. http://asia-first.s3.amazonaws.com/researches/web_link/5a4dc41ddd1a74ae782d8900f5a3a63c.pdf.

The green bond market grew rapidly and first surpassed the $ 100 billion threshold in 2017, reaching $ 170 billion in 2017 and over $ 200 billion in 2018 (fig. no. 3). Early in 2017, France announced its own launch of the green bonds, the first "green" bond issue in France (Oncu, 2018).

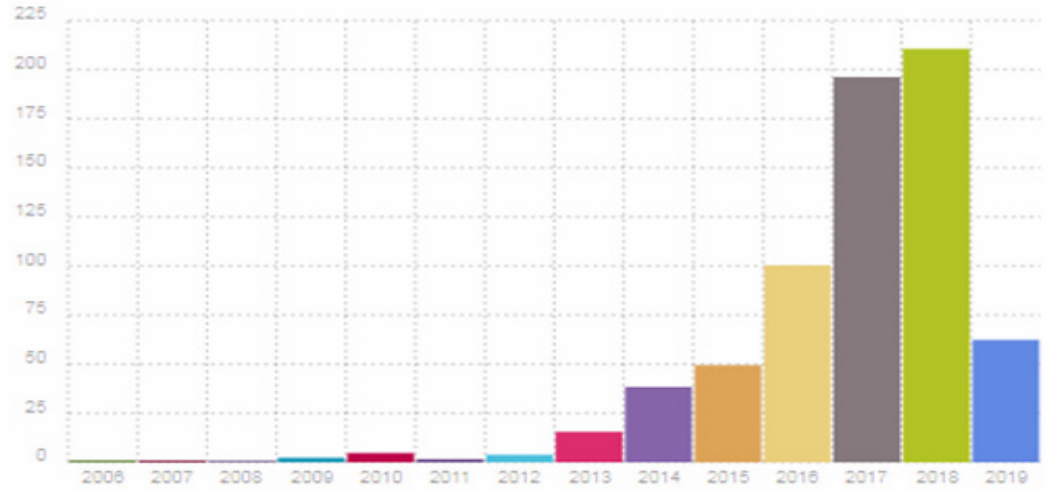

Fig. no. 3. The evolution of the green bond market value 2007-2019
Source: www.bonddata.org

The interest of investors in the World Bank's green bonds captured the attention and imagination of other issuers - including governments - who recognize that green bonds are a compelling way to reach private capital to support their own efforts to mitigate and adapt to climate change. Private capital can be concentrated if green bond products would be designed to respond to the risk / profitability ratio, would provide portfolio diversification opportunities, would provide liquidity, and would provide investors with opportunities to benefit from the success of climate change approaching projects (Reichelt, 2010). Green bonds are particularly attractive for investors who incorporate environmental, social and governance factors (ESGs) into their analysis, which is specifically pursuing environmental strategies.

According to a study published by the Climate Bond Initiative in 2018, 145 entities issued green bonds in Europe (about one-third of the global number of issuers) from various sectors of activity, including energy sector, real estate sector, financial institutions, but also municipal and national authorities (Oncu, 2018)

Bernard Paranque & Christophe Revelli (2019) have identified in a recent study that most of the green bonds (GB) are issued by the Chinese market, accounting for almost half of the 2016 issue. Since the Chinese market is reserved for local investors, this does not allow for real market expansion. The authors of the same study show also in their research in 2019 that taxation can create problems for investors. Thus, American bonds will not be attractive to European investors from a fiscal point of view, as they have tax advantages only for US investors. (Paranque & Revelli, 2019).

The following chart shows a distribution of green bond issues on funded sectors. The 30 June 2018 data from the World Bank's Green Bond Report highlights that green bonds have been leveraged to 44% to finance renewable energy and energy efficiency projects, followed by the green transport sector (fig. no. 4).

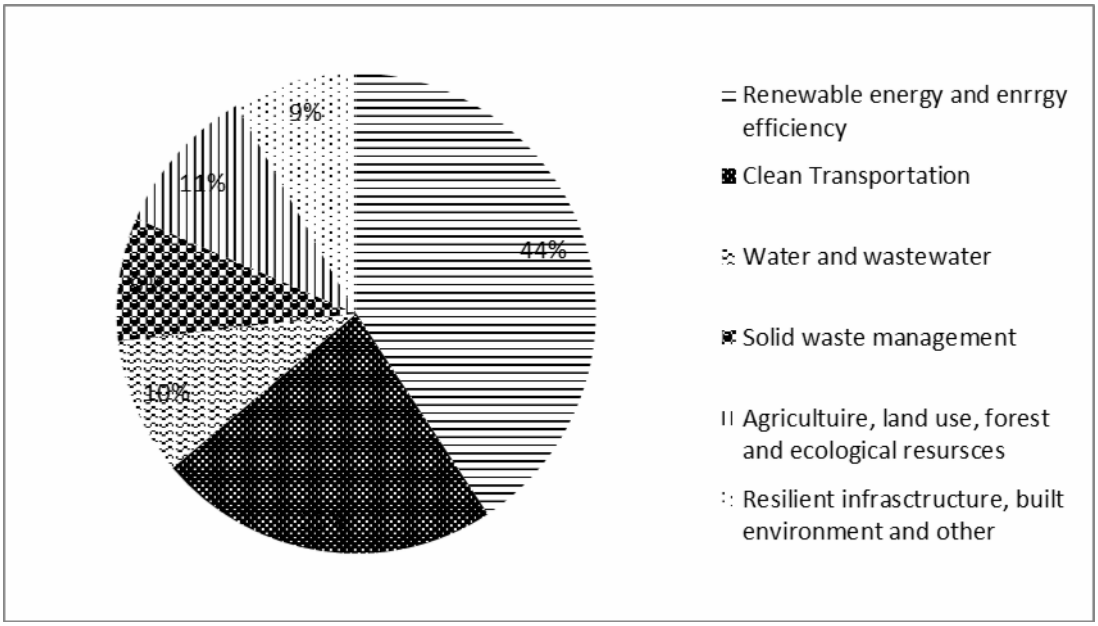

Fig. no. 4. Distribution of green bonds by sectors
Source: World Bank, 2018. Green Bond Impact Report, 2018, Available at: http://pubdocs.worldbank.org/en/632251542641579226/report-impact-green-bond-2018.pdf

Regarding the development of a green bond market in Romania, there are some barriers, such as the fact that Romania is a small global market, the need for financial incentives, strict regulation of institutional investors, European Union funds that compete with the capital privacy and lack of awareness of this product. As a solution, the government and municipalities in Romania should raise awareness through the issue of Green Bonds (Talking of Money Magazine, 2018)
In 2007, no one believed in the viability of green bonds. Romani, EIB Financing Manager, says that this market is one of the most successful in financing climate change (EIB, 2017). The recent rise in the green bond market reflects a series of converging tendencies (Kochetygova & Jauhari, 2014):

- Increasing awareness of climate change by investors and the public area;
- Recognizing that capital markets can offer solutions to meet the huge capital needs of a climate-sensitive infrastructure; and
- Investor demand for fixed income instruments that respects environmental mandates and sustainability without compromising returns.

Conclusions
At its core, the concept of green bonds is a market innovation that allows for efficient capital arbitration between investors and green or climate projects.
Although it is still considered a niche market, the potential for developing the green bond market is huge and has increased in recent years following the conclusion of the Paris Agreement. Since its inception in 2007, the green bond market has grown rapidly both in terms of scope, average size of issuance and diversity of issuers. Although the first issuers were represented by supranational entities such as the World Bank, the European Investment Bank (EIB) and the International Financial Corporation (IFC), the green bond market has matured and expanded globally and now includes corporate bonds, asset backed securities (ABS), active for projects and infrastructure, as well as sub-national and municipal issuers (regional and local governments). These aspects will lead to the expansion

and future change of this market, a welcome change as the market evolves to meet a variety of risk / profitability requirements.
The development of the green bond market will be influenced by the diversification of issuers as well as by the value of the issues. The distribution area is world-wide expanding from Europe to developing countries especially. It is estimated that the green bond market will continue to expand greatly with China's involvement.

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YOUNG ROMANIAN FARMERS' PERCEPTIONS REGARDING SUSTAINABLE AGRICULTURE

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Abstract

Because traditional agricultural practices negatively affect resources, the environment and human health, the need for sustainable agriculture is rapidly emerging. Sustainable agriculture is critical for sustainable development, as agriculture still remains the economic backbone of most countries. This study highlights the perceptions of young Romanian farmers regarding sustainable agriculture. For our research, we used an agribusiness perspective on sustainable development. Results from four focus groups reveal that Romanian farmers do not have a clear understanding of sustainable agriculture. Despite this apparent lack of understanding, young farmers employ sustainable agricultural practices to a certain extent. Most practices related to sustainable agriculture are perceived by young farmers as the "proper" or "traditional way to get things done" in agriculture. From an agribusiness perspective, young farmers are overall more interested in improving profit margins on a short and medium term and are generally reserved towards contributing to environmental conservation due to high perceived costs. Most young farmers also plan the future expansion of their activities, as it is the only survival option in a marketplace where quantity is perceived as more important than quality. However, we identified a group of young farmers who display a proactive attitude towards sustainable development and who are interested in how they can benefit from sustainable agricultural practices in the long term. Finally, the farmers' degree of environmental concern appears to depend on the agricultural domain of activity, as well as on their individual ability to ensure a secure living standard, potentially from other non-agricultural activities.

Keywords

Sustainable agriculture; young farmers; sustainable development; agribusiness perspective; sustainable practices

JEL Classification

M31, Q01

Introduction

Over the last decades, agricultural practices have been affected by dramatic changes, such as newer technologies, mechanization, specialization, the increasing influence of government policies and the increased use of chemicals or genetically modified organisms. All these changes have led to lower food prices, production maximization, increased profit margins and decreased risks in agribusiness (Hobbs et al., 2007). Despite all their positive effects, modern agricultural practices also generate significant costs. Air, water and soil pollution, soil degradation, new threats to human safety caused by unfamiliar pathogens, economic inequality and a diminished quality of life in rural areas can eventually lead to the disintegration of rural communities and even to the depletion of natural resources.

In the new millennia, scholars have questioned the necessity of all the aforementioned costs and have tried to offer sustainable alternatives for agriculture in rural communities. Sustainable agriculture includes a dynamic set of practices and technologies that minimize damage to the environment, while assuring a sufficient level of income to the farmer over time (Conway & Barbier, 2013). In practice, the farmers and villagers should be the ones who ultimately benefit the most from achieving sustainable agriculture goals. However, studies show that the target audience may not be willing to adopt sustainable agricultural practices that may reduce their income (Tatlidil et al., 2009). Young farmers are exceptionally prone towards developing such attitudes due to intergenerational conflicts and a higher desired standard of living. In reality, such perceptions depend from farmer to farmer based on psychographic factors, such as personality, socioeconomic status and social-cultural characteristics.

In this context, we believe that a better understanding of farmers' perceptions related to sustainable agriculture is essential for promoting the benefits of sustainable agricultural practices towards the target audience. By identifying significant perceptions related to agribusiness and sustainable agriculture, we can provide a better insight needed to support the formulation of policies that promote the adoption of sustainable agricultural practices. The purpose of this study is to explore the perception of young Romanian farmers regarding sustainable agriculture. We first explore the cognitive and conative antecedents of these perceptions and interpret them in comparison with the scholarly framework for sustainable agriculture. Secondly, we analyze young farmers' perceptions from an agribusiness perspective. We conclude with some recommendations to increase the awareness rate of sustainable agriculture practices among young farmers.

Theoretical framework

Significant changes are occurring on farms across Europe. Industrial agricultural systems have been used for years for producing our food. However, from a sustainability perspective, there are several key issues with this industrial farming system. First of all, the industrial consumption of water, topsoil and fossil fuel will deplete these resources at an exponential rate (Conway & Barbier, 2013). Secondly, industrial farming causes environmental degradation, such as pollution or soil depletion, and reduces biodiversity (Pimentel, 1999). Moreover, meat production increases pollution due to a high concentration of animal waste. Animal farming also implies a large energy consumption determined by feeding grain to livestock (Wezel et al., 2014).

At its basis, sustainable agriculture embraces some variants of nonconventional agriculture, such as organic agriculture, green agriculture or alternative agriculture (Hobbs et al., 2007). From an economic point of view, it must be noted that a farm cannot be considered sustainable only because it is organic or alternative. From a business point of view, it also must be noted that the terms „green" and "organic" are most often just simple unsubstantiated marketing claims attached to a product, in the context of an increasing

"greenwashing" effect (Feirnstein, 2013). In reality, for a farm to be sustainable it must produce sufficient amounts of high-quality food, while also being profitable and environmentally safe. Sustainable agriculture aims to produce safe and healthy food, ensure economic viability, improve country life in rural areas and conserve natural resources while delivering services to all ecosystems (Hobbs et al., 2007). Therefore, by making a farm ecologically friendly and more economically diverse, the farm can achieve a greater level of resilience and resource self-reliance.

From a business perspective, sustainable agriculture must provide the ability to continuously and permanently feed an overgrowing population. Although global food security has not been significantly affected by the steady increase in population over the past decades, climate change can significantly impact food security in the future (Hanjra & Qureshi, 2010). The rapidly increasing threat of climate change has determined government officials and key stakeholders to rethink the ways in which agriculture can deliver food and services efficiently and sustainably. Therefore, we believe that is a common moral obligation to pursue the goals of sustainable agriculture in the present in order to provide a better future for all of us. In this context, agribusiness must identify and accept past failures in agricultural practices and agricultural supply chains in order to increase the sustainability of the agricultural system.

It must be noted that sustainable agriculture does not only cover environmental issues, but also biodiversity and economic or social aspects, which are not approached in the traditional view of agriculture. In practice, technology and innovation are key factors of sustainable agriculture (Wezel et al., 2014). From an economic perspective, permaculture, hydroponics, aquaponics and biodynamics are holistic systems which increase both agricultural efficiency and sustainability, by respecting the principle of working „smarter rather than harder". From a biodiversity perspective, agroforestry, food forests, growth of heirloom and other varieties ensure biodiversity while retaining a high productivity level. From an environmental perspective, natural animal raising, natural pest management, polycultures, crop rotation, mulching, groundcovers and managed grazing ensure incontestable environmental benefits. From a social perspective, local commerce, together with better water and energy management can significantly improve country life in rural areas, while also preserving natural resources.

Despite the various governmental incentives to increase the use of sustainability practices, farmers' reluctance and resistance to change is significant. As a consequence, even if the efficacy of agriculture systems based on sustainable agriculture models has been proven, the adoption rate of sustainable agriculture practices is quite low (Rodriguez et al., 2009). Previous research has found numerous causes for this phenomenon, but in general sustainable agriculture must be fully compatible with the existing agriculture system in order to overcome farmers' resistance to change (Drost et al., 1996). The main cause of this phenomenon may be the lack of agronomic knowledge or the lack of understanding of how sustainable agriculture practices can yield positive outputs for farmers (Steinmetz et al., 2016). Some studies also suggest that this high degree of resistance towards change is caused by insufficient knowledge regarding the social processes of specialization and differentiation (Noe & Alroe, 2015; Marsden, 2013). Farmers' perceptions can't be changed by better communication methods about desired behaviors, but they can be altered by providing incentives to adopt certain behaviors and practices (Herath & Rao, 2009). Therefore, from an agribusiness standpoint, we advocate for an increased use of practical wisdom and concrete examples in the detriment of scientific language, in order to make information easy to understand and to comply with.

Research methodology

In order to explore the perception of young Romanian farmers regarding sustainable agriculture, we employed four focus groups. As a research method, focus groups offer specific advantages, such as the fact that each participant can reflect on others' viewpoint and thus allows informants to build on the answers of others (Aaker et al., 2016). Narrative content can provide key insights into young farmers' perceptions regarding sustainable agriculture and agribusiness. Therefore, in most cases, it is the most suitable method to study perception formation and its antecedents.

Each focus group consisted of 10 participants from a specific macro region of Romania: Centre - Transylvania, South - Muntenia, South-West - Oltenia, East - Moldova. All participants are active young farmers aged between 19 and 40 years. The male to female ratio across participants is three to one. All participants are active farm managers in small and medium farms, with a ratio of three to one between small and medium farms. Seven participants are beekeepers, nine represent livestock farms, nine manage mixed vegetal/animal farms and fifteen participants are involved in vegetal farms.

Results and discussion

We present our results using a series of illustrative statements about the agribusiness model employed by young farmers that allows us to picture the general context. These statements represent the pattern related to sustainable agriculture emergent from the complete data set. The broader data set offers a good understanding of the issue of sustainable agriculture as perceived by young farmers, while each individual statement provides a more nuanced picture on the issues related to agribusiness practice. We present our findings in Table 1.

An interesting finding of our research is that there are important differences between farmers in terms of their vision of long-term development, in the context of current challenges - environmental, economic or social. The extent to which young farmers embrace the values of sustainable agriculture seems to be significantly influenced by the agricultural branch in which they operate. Thus, beekeepers are strongly interested in preserving the environment and biodiversity and are also concerned with food quality and human health. In opposition, farmers working in the vegetable sector - particularly those who produce greenhouse vegetables - are almost exclusively concerned about their productivity, about obtaining early crops and about short-term profit maximization.

Beekeepers' increased concern about the environment and society could be explained by several factors. Discussions in the focus groups revealed two especially relevant factors. First of all, beekeepers are immediately affected by the changes in the natural environment, such as climate changes, pollution and contamination with pesticides or the use of genetically modified organisms. Also, due to the severe deterioration of the natural environment, beekeeping is endangered in Western Europe (Bouga et al. 2011). These changes frequently lead to bee death or can compromise honey production. Thus, the environmental protection of the bee habitat offers beekeepers direct economic benefits. Secondly, beekeeping is rather a hobby for the vast majority of practitioners (6 out of 7 respondents), unlike for other farmers who consider agriculture "a business that has to provide a decent income".

Another key point of our research was to explore respondents' opinion towards major challenges for agriculture and ask them to propose solutions for the future. The most important challenges, solutions and individual actions can be found in Table 2. Due to obvious differences in perceptions, we held the discussion in subgroups, depending on the sector of activity: plants, beekeeping, animals and mixed.

Table no. 1 Main results from the four focus groups

Conclusion	Individual Statements	Farmer type
Most young farmers (>80%) do not know much about sustainable agriculture.	"I don't know what sustainable agriculture really means". "I have heard about sustainable agriculture, but I can't define it or name specific practices". "It is something related to sustainability, but I do not know how it applies to me".	SM/M (1,2,3,4); SM/M (1,2,3,4); SM/M (1,2,3,4);
Most young farmers apply some sustainability practices without knowing it.	- Crop rotation, natural fertilizers, polycultures, heirloom growth, animal welfare, natural grazing; - Natural pest management, permaculture; - Aquaponics, mulching;	SM/M (1,2,3,4); SM(1,2), M(1); M(1), SM(1,3);
Young farmers are interested in the advantages that can be brought to them by new technologies rather than by agricultural research.	"Technology can help me increase profits, but I do not see a way research can do that for me". "Technology can surpass the workforce deficit and increase productivity". "Technological improvements are better than experimentation for sustainable agriculture".	SM (1,2,3), M (2,4); SM (3,4), M (1,2,3,4); SM (1,3), M (2,3);
Young farmers are interested in protecting the environment to some degree, as long it doesn't affect their profits.	"I do enough to prevent soil erosion and protect biodiversity, so I don't see a reason why I should spend more on protecting the environment". "I am reluctant to spend money for green agriculture without seeing the result first.' "Preserving the environment is important for me because future generations can continue the tradition of farming". "I already implemented some green practices in my farm. Maybe, with enough financial support, I will try to implement more in the future".	SM (2,3), M (2,3,4); SM/M (1,2,3,4); SM (1); SM (1);
Sustainability problems faced by young farmers	- Climatic changes, lack of workforce; - New pests and disease vectors;	SM/M (1,2,3,4); SM (2,3) M (4);
Farmers like the concept of sustainability, but they are afraid it doesn't work.	"I like the concept of sustainability, but does it improve productivity?" "Sustainability sounds good in theory, but things are harder to do and more complicated in practice".	SM (3,4) , M (1,3,4); SM/M (1,2,3,4);
Young farmers rather seek immediate profit.	"I want to substantially increase my profits within the next two years". "In the next two years, I am concerned only about my profitability and productivity". "My goals/concerns, regardless of the period are profitability, resilience, sustainability".	SM (2,3,4), M (3,4); SM (3), M (2,3,4); SM (1), M (1);

Notes: SM - small farms; M - Medium farms; Regions: 1 – Centre (Transylvania); 2 - South West (Oltenia); 3 - South (Muntenia); 4 - East (Moldova);

Table no. 2 Challenges and future solutions for agriculture

Sector	Challenge / threat	Solution	Personal action
Plant	The emergence of new or treatment resistant pests (N=11)	Development of new pesticides (N=11) Creating resistant hybrids (N=6)	No action/ Do not know (N=11)
	Lack of labor force (N=11)	Farm process automation (N=8) Import of Asian workers (N=5)	Investing in new technology (N=6)
	Climate change (expressed in general terms) (N=4)	Pollution reduction (N=3) Agri-environmental practices (N=1)	No action (N=4)
Bees	The widespread use of insecticides (N=7)	Practicing organic farming (N=7) Restricting pesticide use (N=2)	Avoiding tainted crops (N=7)
	Environmental degradation caused by climate change and pollution (N=7)	Reduction of pollution and greenhouse gas emissions (N=7)	Militates to reduce pollution (N=4) Volunteering (N=3)
	Use of GMOs (N=6)	Prohibition of future use of GMOs	No action (N=6)
	Impairment of public health through the poor quality of food obtained in intensive farming / industrial system (N=6)	Supporting organic farming and natural products (N=5) Limiting the consumption of unhealthy products through education (N=4)	Provide quality natural products (N6) Organic certification (N=3)
	Global warming (N=4)	Forest conservation and afforestation (N=4) Reduction of pollution and greenhouse gas emissions (N=4)	Support the education of young people (N=2) Volunteering (N=2)
Animal	Lack of labor force (N=5)	Hiring extra-community workers (N=2)	No action (N=5)
	Vaccination prohibition and the emergence of zoonoses (N=4)	More permissive European legislation (N=4) Prevention measures (N=1)	Compliance with biosecurity rules (N=4)
Mixed	Climate change (expressed in general terms) (N=6)	Pollution reduction (N=5) Adapted animal breeds (N=3)	No action (N=4) Adapting to the new type of climate (N=2)

Note: N represents the number of respondents who mentioned or agreed on a particular idea

Overall, the main challenges for long-term agriculture are 'climate change' (mentioned by 18 respondents) and the 'lack of labor force' (16 mentions). After clarifying challenges and solutions, the discussion was finally directed to future trends. The general consensus was that "the agriculture of the future is comprised of large farms that practice intensive, large scale farming, in which product quality is far less important than productivity".

Conclusions

First of all, most young farmers do not have a clear picture of what sustainable agriculture means. While some focus group participants don't have any relevant knowledge about this subject, others provided several associations regarding sustainable agriculture, such as "environmental protection", "preserving resources", "natural/healthy food" or "using green

energy". Although they can't offer a coherent definition of sustainable development, most young farmers apply some sustainability practices without even knowing it.

Secondly, according to the participants, the most important challenges for agriculture are climatic changes, the lack of workforce, new emerging pests and diseases. If the proposed solutions to these challenges are universal and rather vague, in terms of attitude we identified two categories of farmers, approximately equal in weight. The first category includes farmers who are not interested in getting involved or do not know how they could act in a "sustainable way". The second category is represented by farmers with initiative, willing to contribute to a better future, to implement new technologies, to hire immigrants and to even militate for pollution reduction. The emergence of these two categories of farmers seems to be explained by their activity domain, income levels as well as educational and/or cultural background.

Thus, young farmers in the first category tend to be reluctant about agricultural practices which may reduce their income, although at the same time many of them prefer employing traditional agricultural practices. Focus group participants are generally aware of the problems and long-term threats associated with intensive farming practices, but they are not willing to invest money to mitigate these threats. Moreover, some of them are skeptical about the efficiency of agri-environmental practices. Most respondents from the second category express a certain level of concern about the environment, the health of the end-consumer and the welfare of future generations, as long as it doesn't greatly affect their profits. These attitudes may be caused by the fact that most respondents are small farmers with relatively low incomes, who prefer to maximize their profit and invest it in expanding the farm. Another explanation might be sociocultural and educational, especially as we observed some differences between farmers coming from different geographic regions and social backgrounds.

A special category of farmers is represented by beekeepers, who are extremely concerned about environmental issues, as well as about product quality. First of all, beekeepers seem to be much more aware and concerned about environmental hazards due to being much more vulnerable in the context of intensive farming, the use of GMOs and climate change. Secondly, profit is less important for beekeepers, as they practice this activity mostly as a hobby and passion. Thus, beekeepers appear to be more caring about people's health, more loving of nature and more passionate about their work.

Theoretical and managerial implications

The differences in perceptions between the two categories of farmers can be theoretically explained through Maslow's (1987) hierarchy of needs. It is evident that farmers with lower incomes are primarily concerned about ensuring their survival and their basic economic needs. Thus, they are reluctant to focus on environmental protection. However, farmers who practice beekeeping mostly as a hobby have their financial needs better fulfilled from other sources. Thus, they are much more open to focus on higher-order values, such as sustainability and community well-being. Potentially, they are also more open to learning about sustainable practices, instead of narrowly focusing on raising profits and productivity.

The results of the focus groups offer support for several managerial implications. It is obvious that most participants have a very vague knowledge regarding sustainable agriculture and thus detain a potentially distorted image of the real benefits and disadvantages of sustainable agriculture. In this context, it is essential to address farmers' perceived risks of employing sustainable agricultural practices, such as reduced productivity and financial costs. Therefore, funding should be directed towards mitigating these risks and costs, by providing financial compensations for farmers who employ such sustainable agricultural practices. Moreover, it is essential to raise awareness regarding the personal

benefits of sustainable agricultural practices, such as the farmers' ability to practice premium prices for organic agricultural products and to ensure a healthier living environment for their own families. Finally, Romanian farmers appear willing to learn about and implement sustainable practices which do not encumber financial costs. Therefore, they could be successfully enrolled in informational programs which present practical ways of implementing sustainable and economically viable agricultural practices.

Finally, we identified differences in the environmental awareness and concern of Romanian farmers, differences which may be triggered by their distinct sociocultural and educational backgrounds. As we do not have enough information to support this hypothesis, we propose investigating the role of different geographic regions in determining sociocultural and educational particularities which affect the farmers' level of environmental concern.

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PATTERNS IN YOUTH TOURISM AMONG EU COUNTRIES

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Abstract
Even if there are still wide gaps between European countries, the youth tourism is spread throughout all business in EU market. The main goal of this paper is to determine the main characteristics of youth tourism (15-34 years people with at least one overnight stay in a tourist accommodation establishment) in European Union countries, based on Eurostat indicators for 2012-2017. Patterns like overall status, earning & spending, individual interest for tourism and dynamics are revealed and explain almost 70% of total variability. Moreover, Romania seems to be one of the biggest youth tourism industries in Southeastern Europe due to its size mostly, but the performance of the sector is still quite low.

Keywords
Country profile, Principal Component Analysis, Regression model, Tourism.

JEL Classification
C38, C52, L83

Introduction

Due to the increasing role of tourism activity in enhancing new economic opportunities, researchers all over the world have tried to identify its determinants and to find the best ways to maximize its efficiency. Youth tourism represents a specific market segment within tourism. Its importance is constantly increasing as the segment is rapidly developping based on its characteristics of an early adopter.

Khoshpakyants and Vidishcheva (2010) prospected this new, fast-growing sector. They provided basic definitions of the essence of youth tourism, and statistics for the sector over the last decade as well as the most popular destinations

Horak & Weber (2014) elaborated the concept of youth tourism, describe its characteristics, and then analyse the mobility and expenditure of this dynamic tourism market in more detail. Youth hostel accommodation capacity and travel flows in European countries are analysed and the main features of tourism products intended for young travellers are identified. Moreover, prospects for development of youth tourism in Europe are emphasized based on important key factors.

Bizirgianni & Dionysopoulou (2013) restates that the everyday life of young people is affected by Internet and social media (SM) is increasingly gaining ground in their activities. The importance of youth tourism and SM as a field of interest for policymakers and researchers leads the tourism industry to realize the needs of young people through this change and respond to this challenge with strong presence in social media around the world. Instead of methods of aggressive marketing through products and services sale centers,

tourism market create places for exchange of views, advices, audio-visual material and anything that would attract the traveller and familiarise him with the philosophy of travel. In this way the promotion of tourist products and services becomes smoothly. (Bizirgianni & Dionysopoulou, 2013).
While youth tourism and cultural tourism – two increasingly important segments of tourism activity – have been widely researched, Pansukkum & Swanson (2013) saw the opportunity of further examining the intersection of youth travel demand and cultural tourism supply.
On the basis of existing available sources and knowledge, this paper attempts to elaborate the country profile from youth tourism perspective, describe its characteristics, and then analyses the factors that might influence one of the key aspect in tourism - the expenditure variable.

Data and methodology
The analysis aims at identifying the country profile for tourism of young people (15-34 years old), considering the tourism expenditure, volumes and the dynamic of the latest 5 years (2012-2017) for all 28 countries of European Union. Principal Component Analysis is conducted on EUROSTAT data, covering 28 European Union countries, for 2017 compared to 2012. The analysis covers twenty-nine variables characterizing the tourism environment for 15-34 years old segments as well as socio-economic environment describing other elements influencing the tourism activity in European Union countries.
With approximately 2 million passengers per year, in the period 2012-2017, we see that Romania is on the top 10 UE countries. But if we take into account the total young population in each country, the ranking changes dramatically. Thus, depending on the rate of young tourists, Romania ranked last, with 36% of young people going on a journey for at least one night. In the same situation, with a percentage below 40% there are only 2 countries: Portugal or Greece. In terms of spending/tourist, Romania, alongside Latvia and Czech Republic, is among the last three ranked countries with the lowest amount of expenditure per young tourist below 150 Eur per year.
Considering total number of trips made by the young people, Romania is in the top of the rankings with Austria, with 7 million trips per year in 2017, but taking into account the total expenditure in tourism made by them, young Romanians are sending only 1 billion Euros like those from Slovakia, Croatia and Hungary. The young people from these countries travel on average 3 times per year, 4 nights/trip, during which they spend about 710 €. Both the number of nights/trips and the travel/tourists are lower for these countries than for the other UE countries.
In order to identify significant influence factors on the tourism by youngsters in recent years, as well as various patterns in countries' touristic behavior it is used a principal component analysis (PCA). This method is usually used to reduce the complexity of the data and to present the information on fewer dimensions when all the variables are quantitative. It is mathematically defined as an orthogonal linear transformation that projects the data to a new coordinate system (which is made by principal components) in order to obtain the greatest variance explained by this projection of the data. The variables used in defining patterns of youth tourism are described in Table no.1.

Table no. 1 Youth tourism: KPI set

Variable	KPI	Formula & Significance
Target population 15-34 yo	Participation in tourism for personal purposes by 15-34 yo segment for at least one overnight stay in a tourist accommodation establishment (number of tourists)	Number of tourists 15-34 yo calculated as: -a level for 2017 -difference vs 2012 -percentage vs 2012 -weight in total no of tourists -weight in total population 15-34 yo
Number of trips made by a tourist 15-34 yo for at least one overnight stay in a tourist accommodation establishment [tour_dem_ttage]	2017 Trips 15-34 yo % Domestic of total Trips 2017 vs 2012 % Trips 2017 vs 2012 2017 Trips/person 2017 Trips/tourist	Number of trips made by a tourist 15-34 yo calculated as: -a level for 2017 -difference vs 2012 -percentage vs 2012 -average per person -average per tourist
Number of total nights spent by a tourist 15-34 yo for at least one overnight stay in a tourist accommodation establishment [tour_dem_tnage]	2017 Nights spent % Domestic of total Nights 2017 vs 2012 % Nights 2017 vs 2012 2017 Nights/trip 2017 Nights/tourist	Number of nights spent by a tourist 15-34 yo calculated as: -a level for 2017 -difference vs 2012 -percentage vs 2012 -average per trip -average per tourist
Expenditure made by 15-34 years old segment [tour_dem_exage]	2017 Expenditure by 15-34 yo % Domestic of total Expenditure 2017-2012 % Expenditure 2017 vs 2012 Expenditure/trip/tourist Expenditure/night	Value of total expenditure made by a tourist 15-34yo for a 1 night & over trip calculated as: -a level for 2017 -difference vs 2012 -percentage vs 2012 -average per trip -average per night (Euros or euros per night or per trip or %)
Socio-demographic by 15-34 years old segment	Hourly earnings in industry At-risk-of poverty rate Housing cost overburden rate Self-perceived health-very good	

Source: made by the authors based on EUROSTAT databases accessed on 13th of April 2019

Patterns in youth tourism

By applying PCA the projection of data on the first four principal components preserves 68.2% of the total inertia (27.1% for the first axis, 20.1% for the second axis, 11.1% for the third axis and 9.8% for the fourth axis).

Table no. 2 Rotated Component Matrix

		Component			
		1	2	3	4
Overall status	2017 Nights spent by 15-34 yo	,964	-,006	,060	,031
	2017 Expenditure by 15-34 yo	,960	,100	,128	,120
	2017 Trips 15-34 yo	,944	-,079	,106	,037
	2017 Tourists 15-34 yo	,927	-,079	-,046	-,094
	2017 Estimated population by 15-34 yo	,897	-,140	-,117	-,160
	Expenditure by 15-34 yo 2017 vs 2012	,624	,195	,219	,568
	2017 % tourists 15-34 yo of total tourists over 15 yo	-,420	,147	-,205	-,054
Earning& Spending	2017 Expenditure/trip/tourist 15-34 yo	,120	,834	,112	,223
	2017 Expenditure/night 15-34 yo	,079	,639	,451	,273
	% Domestic nights of total by 15-34 yo	,248	-,881	-,079	-,140
	% Domestic trips of total by 15-34 yo	,270	-,842	,097	-,133
	% Domestic expenditure of total	,320	-,766	-,178	-,088
	2017 Nights/trip by 15-34 yo	,147	,577	-,555	-,094
	2014 Hourly earnings in industry per less than 30 yo group in Eur	,257	,559	,453	,149
	2017 At-risk-of poverty rate by 15-34 yo	-,137	-,410	-,480	,303
Individual interest for tourism	2017 Trips/person 15-34 yo	,132	,074	,917	,105
	2017 Trips/tourist 15-34 yo	,177	-,030	,896	,195
	2017 % Personal purposes for 15-34 yo	,089	,345	,688	,188
	2017 Nights/tourist 15-34 yo	,320	,364	,631	,252
	2017 % tourists of population 15-34 yo	,000	,469	,582	-,037
	2017 Self-perceived health- very good by 15-34 yo	-,013	,230	-,541	,006
	2017 Housing cost overburden rate by 15-34 yo	,208	-,254	-,471	,077
Dynamics	Trips by 15-34 yo 2017 vs 2012	,161	,072	,051	,831
	% Nights spent by 15-34 yo 2017 vs 2012	-,042	,411	,138	,730
	% Tourists by 15-34 yo 2017 vs 2012	-,148	,035	-,185	,701
	% Trips by 15-34 yo 2017 vs 2012	-,194	,234	,122	,694
	% Expenditure by 15-34 yo 2017 vs 2012	,017	,153	,350	,693
	Tourists by 15-34 yo 2017 vs 2012	,109	-,161	,037	,673
	Nights spent by 15-34 yo 2017 vs 2012	,345	,378	,049	,492

Source: made by the authors, using SPSS 20, based on EUROSTAT databases accessed on 13th of April 2019. Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 7 iterations.

The first axis is determined positively by the variables regarding the *overall status* of tourism considering 15-34 years old segment: number of total nights spent by a tourist 15-34 yo for at least one overnight stay in a tourist accommodation establishment in 2017, expenditure made by 15-34 years old segment in 2017, number of trips made by a tourist 15-34 yo for at least one overnight stay in a tourist accommodation establishment in 2017, number of tourists 15-34 yo in 2017 and total population 15-34 yo. Moreover this component is determined positively by the changes in expenditure of 15-34 yo tourists in 2017 compared to 2012. On the negative side, this component is determined by the proportion of young tourists (15-34 yo) out of total population of tourists (15 yo and over).
The second axis is related to *earning and spending* because it accounts some of the most important aspects regarding consumption and expenditure issues that individuals might face when visiting. On the positive side there are average expenditure per trip, average expenditure per night, number of nights per trip for the spending area and hourly earnings in industry per less than 30 yo group for earning area. On negative side there are % of domestic area out of total (domestic + outbound) as a strong influencer on total expenditure due to lower cost for domestic tourism and At-risk-of poverty rate by 15-34 yo.
The third axis is related to *individual interest for tourism*: counting for number of trips that a person aged 15-34 years old may have or how many nights a tourist might spend on a trip, or the percentage of tourist in population. On negative side this component is determined by Self-perceived health as very good and Housing cost overburden rate.
The fourth axis is related to *the dynamics* in tourism of youngsters as long as all relative indicators (with one exception) are highly related to this component.
Moreover, we have used Ward Method in order to create some homogenous groups of countries related to the tourism of youngsters. This method is a hierarchical clustering technique used to create homogenous groups with the minimum variance within the groups. By applying this technique on selected data, three clusters were defined. (fig. no. 1)

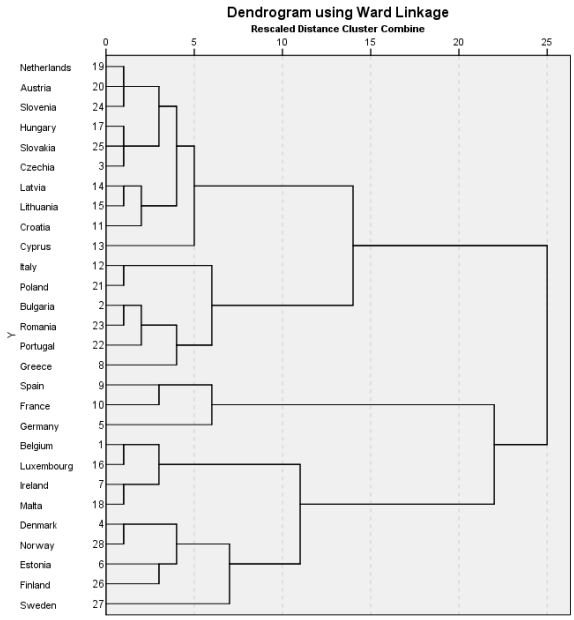

Fig. no. 1 Dendrogram using Ward Linkage
Source: own representation based on Eurostat databases

First cluster contains 9 countries (Belgium, Luxemburg, Ireland, Malta, Denmark, Norway, Estonia, Finland, Sweden) with highest level of tourism among young people: these

countries have the highest number of trips per tourist and highest level of spending per tourist. The second cluster contains 16 countries (Netherlands, Austria, Slovenia, Hungary, Slovakia, Czech Republic, Latvia, Lithuania and Croatia, Italy, Poland, Bulgaria, Romania, Portugal, Greece) with the other extreme, the lowest number of nights spent on a trips by 15-34 years old segment. The third cluster is made up by the largest countries in Europe, Germany, Spain and France, having by far the highest total expenditure on tourism due to the highest number of tourists on youth segment.

By representing the countries on the first four principal components (fig. no. 2), it could be observed that countries such as Germany, Spain and France have the highest values for first component, *Overall status*. In these countries the number of young tourists is the highest in EU. As long as the determinant of the first axis on the negative side is the proportion of young tourists (15-34 yo) out of total population of tourists (15 yo and over), we could say that these countries have the highest number of young tourists because they have the highest number of population, not because the youngsters travel more in these countries compared to the others.

Countries like Cyprus, Luxembourg, Malta and Belgium have highest values of the *Earning & Spending* axis meaning that they have the highest spending among EU countries and the lowest level of domestic tourism. Countries like Romania, Bulgaria, Spain and Portugal have lowest spending per tourist due to highest domestic tourism percentage.

Considering third component, *Individual interest for tourism*, northern countries Finland, Denmark, Sweden and Estonia are the first ones with more than 8 trips per year for 15-34 years old segment with low levels of Self-perceived health as very good and Housing cost overburden rate. On the other side, the Greece is ranking the last in terms of the number of trips per youngster with 1.6 trips per year per tourist and the tourism is mainly domestic.

In terms of the *Dynamics* of tourism among youngsters Italy, Poland and Croatia are scoring last. They have registered the decreases in terms of youngsters' tourism in 2017 compared to 2012. Spain, Sweden, Bulgaria, Belgium, Malta and Ireland are experiencing strong movements toward youth tourism.

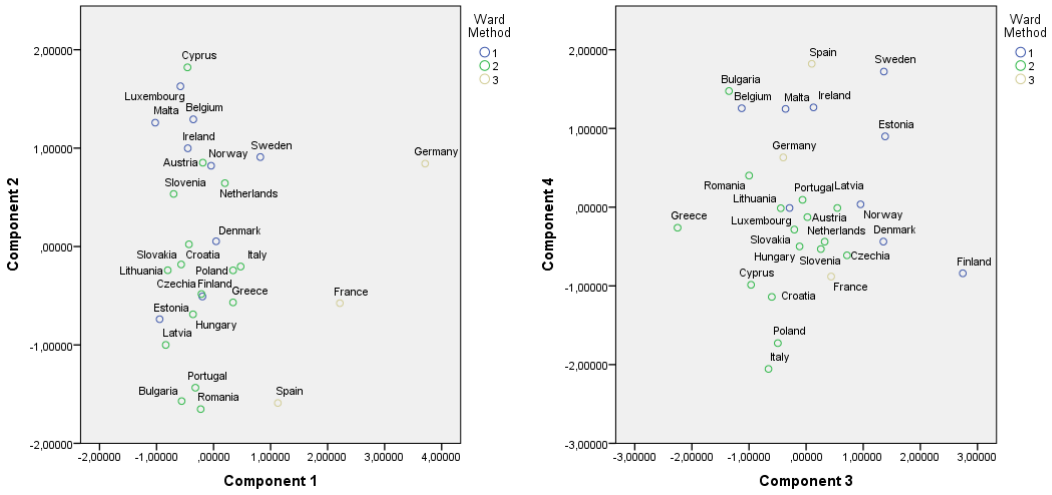

Fig. no. 2 Projection of countries on the first four principal components
Source: own representation based on Eurostat databases

Conclusions

In this paper the Principal Component Analysis and clustering techniques were conducted in order to identify the profile of youth tourism participating countries, using determinants of tourism demand and socio-economic indicators in absolute and relative ways. Four main

components were extracted from the initial data set, concentrating almost 70% of the total variability of the data. Some general patterns are identified. High developed countries (like France, Germany and Spain) with high number of populations have the highest number of young tourists. Countries with low levels of earnings and high risk of poverty (Romania, Bulgaria, Spain and Portugal) register the lowest expenditure levels for travels compared to other EU countries. In countries with low levels of housing cost overburden and high levels of personal purposes (Finland, Denmark, Sweden and Estonia) young people are highly interested in tourism, making more than 8 trips per year. Finally, there are observed some countries like Spain, Sweden, Bulgaria, Belgium, Malta and Ireland which are experiencing strong movements toward youth tourism.

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ROMANIA'S ORGANIC FOOD MARKET. GOOD PRACTICES IN FOOD SAFETY MANAGEMENT

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Abstract

Contemporary global markets face an intensive development that is correlated with higher demands from the modern consumer. This is leading to a new complex approach regarding the food sector and its' niche markets. The simple three-point process that once characterized the food market: "to produce – to sell – to buy" has now evolved into elaborated models based on more determinants that have one common challenge: safety and quality. Thus, the present study aims to highlight the importance of food safety management systems in producing quality food, when their principles are not limited to safety issues only. In this context, producers' accountability in ensuring quality food products can be achieved by implementing standardize methods of production that promote a common approach on safety and quality, and also that promotes transparency, more exactly by informing consumers in a correctly and completely manner in order to set their expectations. In other words, the research focuses on quality management systems as defining instruments that can assure high-quality food products are being delivered at competitive prices to domestic and international markets. Another key aspect aims to identify a set of good practices from Romanian companies that activated in the organic food industry and use HACCP to control both food safety and organic requirements and that can represent motivation for other businesses to adopt the food safety management system in accordance with the organic legislation.

Keywords

Food safety, quality management system, HACCP principles, organic food market, food quality systems.

JEL Classification

L15, L660, Q550, M11

Introduction

Nowadays, knowledge of commodities is becoming more and more important as a result of the enhance of international trade, that requires mercheological knowledge, government-developed laws and rules based on merceological arguments (for example, regulations on what must be written on labels goods, composition standardization, clear specification on ingredients that must be avoided or permitted in food, cosmetics, in packaging, regulations on the effects of production and use of goods on the environment, etc.).

Moreover, media coverage (newspapers, magazines, radio, television) of a series of incomplete information regarding products, transform the advertising role by aiming for a

direct and rapid orientation of consumers towards certain acquisitions, without a proper selection.

Quality management and food safety management systems are essential to reinforces the argument that food industry is a solid support for communities for which it works. In order to meet the needs and global expectations of consumers, there must be an integrated, uniform and imperative approach for industry organizations, namely to have quality standards and tools such as ISO 9000, Codex Hygiene (GMP / GHP and HACCP) and ISO 22000.

The requirements and processes needed for each standard have been successfully initiated and implemented worldwide by companies that activated in the food industry for a long period of time. Multiple studies consider also that a positive recovery of investment exists behind the application of HACCP, as companies can reduce the cost of products and distribution. It also reduces the number of products withdrawn from distribution, which can cost the company with up to 90 million dollars or more as well the impact of value for shareholders, market share, and brand reputation. (Kuchinski, 2014).

Taking into account the fact that many countries do not have adequate infrastructure to ensures food control, so as to protect the health of consumers against the dangers they might pose and the fraud, Codex Alimentarius Commission adopted at its 13th session (December 1985), the Code of Ethics for International Trade in Food. In drafting the Code, the Codex Alimentarius Commission started from several key premises, food safety being the result of several factors: legislation that should set minimum hygiene requirements; official controls that should be carried out to identify to what extent the food business operators comply with these requirements and food business operators must establish and implement food safety programs and procedures based on HACCP principles.

Organic farming is the result of the same quality food systems and in this context food safety and organic performance go hand in hand (Epuran et al., 2018).

This article aims to provide a general overview of the main directions of implementation for quality management and food safety systems such as HACCP, ISO 22000 and ISO 9000 to control food safety risks as well as to identify a set of good practices from Romanian companies that activated in the organic food industry and use HACCP to control both food safety and organic requirements and that can represent motivation for other businesses to adopt the food safety management system in accordance with the organic legislation. In this sense, key benefits obtained as a result of this approach are highlighted.

Thus, it can be identified that HACCP systems and organic food requirements share highly compatible concepts and principles that, if they are applied together, can determine multiple benefits to both consumer and producer in terms of food safety and quality.

1. Food Safety Management: Defining a control system for the global food supply chain

As a result of intensive development and multiple mutations of the modern food market, food safety management is constantly promoted by important global organizations (like Food and Agriculture Organization, International Organization for Standardization or the European Union) that act as leading parties in creating an adequate infrastructure to ensures traceability in terms of food control. In general, this upward trend has determined an increasing public awareness regarding food safety and food security, one of the biggest challenges of the food market today being to assure availability for a wider public to superior quality food, in terms of a cleaner environment (Chia-Lin, 2014).

From a notional point of view, quality management and its principles have served as a starting point for the development of food safety systems.

Thus, in the context of all the activities that an organization carries on in order to plan, control, coordinate and improve quality as a main determinant of any product, food safety

deepens the concept of quality, focusing on the food segment, ensuring that the food product will not cause an adverse health effect for the consumer when it is prepared and/or consumed in accordance with its intended use (ISO 22000: 2005).
In this context, the industry has rapidly adapted and developed, food companies being able to choose today from a wide range of management tools in order to be able to better understand, develop, improve and control quality and safety matters (Pamfilie et al, 2016). According to Peter Overbosch (2014), there are multiple food safety initiatives promoted around the globe, but the biggest impact in the food industry is brought by the following:

- GFSI - The Global Food Safety Initiative
- HACCP - Hazard Analysis and Critical Control Points
- ISO 22000 Food safety management
- ISO 9001 Quality Management Systems
- 6 Sigma – quality focused methodology

Pursuing this goal, the Food and Agriculture Organization (FAO) together with the World Health Organization (WHO) have set up in 1961 the Codex Alimentarius Commission as an international body responsible with adopting a series of food standards that regulate international food trade, promoting fair practices and consumers' health.
One of the most important document in terms of food safety management, issued by the Codex Alimentarius Commission, that involves traceability of the food chain, following from primary production through to final consumption and highlighting the key hygiene controls at each stage, is the General Principles of Food Hygiene Codex. Its principles recommend food companies to adopt a HACCP-based approach by implementing a Hazard Analysis and Critical Control Point (HACCP) System in order to improve food safety and develop specialized management systems.
The HACCP system is a result of the increasing market trend in the food industry to maintain an even stricter control on manufacturers, in order to offer consumers high-end quality products, but also safer products from a microbiological and bacteriological point of view. A HACCP-based approach considers production, packaging, transport, storage and selling of food products as processes that involve health risks for the final consumer. Thus, HACCP, as an internationally recognized food safety system, consists of a systematic and preventive analysis of each production and commercial phase, in order to identify critical points in these processes and prove that the related food safety risks (biological, chemical and physical) are identified, evaluated and kept under control.
According to the Codex Alimentarius Commission there are seven HACCP principles, that food companies must apply in implementing food safety management systems. These principles are presented below along with some authors' key notes (Stanley et al, 2011):

- Principle 1: *Conduct a hazard analysis* - prepare a flow diagram of the steps in the process. Identify and list the hazards together with their causes/sources, conduct a hazard analysis to determine if the hazards are significant for food safety and specify the control measures.
- Principle 2: *Determine the critical control points (CCPs)* - a decision tree can be used.
- Principle 3: *Establish critical limit(s)* that must be met to ensure that each CCP is under control.
- Principle 4: *Establish a system to monitor control of the CCP* by scheduled testing or observations.
- Principle 5: *Establish the corrective action to be taken when monitoring indicates that a particular CCP is not under control* or is moving out of control.
- Principle 6: *Establish procedures for verification to confirm that the HACCP system is working effectively*; this should also include validation and review activities.

- Principle 7*: Establish documentation concerning all procedures and records appropriate to these principles and their application*.

These principles of a HACCP system guide food organizations towards respecting all rules necessary in obtaining quality products and continuously improving their performances (both organisational and safety). These principles have a

In this context, quality in the food industry does not refer only to the end-product, but also means process hygiene (without being limited to technological flow) (Rabontiu, 2010).

Nowadays, HACCP has become the main reference for international food safety. Its importance is highlighted, for example, in the European Union, where systems based on HACCP principles are mandatory required to be implemented for all food operators involved in a stage of production, processing and distribution of food products, except for primary production. Thus, the HACCP principles have been integrated into the EC Regulation no 852/2004 on Food Hygiene and also in animal feed legislation.

It is recommended for food companies to use HACCP systems in parallel other good practices regarding production, traceability and hygiene which forms the necessary elements in sustaining food safety, alongside with Quality Management Systems. This involves a further recognition of the importance of food safety management that resulted in the development of International Standard ISO 22000. This standard combines the quality assurance requirements found in ISO 9000 (Quality management systems) and the food safety focused components found in a HACCP plan (Stanley et al, 2011).

The International Organization for Standardization (ISO) is an independent, non-governmental organization, having more than 160 members from different countries around the globe, its main role resuming to the establishment of multiple specifications for products, services and systems, in order to ensure quality, safety and efficiency. These specifications result as an instrument in facilitating international trade.

According to the latest version of ISO 22000 standard (Food safety management systems - Requirements for any organization in the food chain), that was issued in 2018, and that will slowly take the place of ISO 22000:2015, the adoption of a food safety management system (FSMS) is a strategic decision for an organization that can help to improve its overall performance in food safety. bringing potential benefits like:

- the ability to consistently provide safe foods and products and services that meet customer and applicable statutory and regulatory requirements;
- addressing risks associated with its objectives;
- the ability to demonstrate conformity to specified FSMS requirements.

ISO 22000:2018 standard represents the most important ISO material regarding food safety, that promotes process approaches, Plan-Do-Check-Act (PDCA) cycles and risk-based strategies. In order to incorporate valuable information from HACCP principles the 2018 version of ISO 22000 answers a series of questions like: what is an occurrence of contamination? What do an “acceptable hazard level” and a “significant hazard” mean?

But despite HACCP control systems, ISO 22000:2018 is a voluntary standard, that intends to include sufficient applications in order to provide the mandatory quality guarantees required by regulations, through HACCP and others, by establishing common terminology that can be used from one country to another, in order contribute to its main objectives: providing safe food products to consumers and facilitating international trade. Moreover, the standard focuses in harmonizing control measures and definitions like operational prerequisite programs (OPRPs), critical control points (CCPs). Mainly, for an organisation to grow in terms of food safety standards, it must focus on multiple layers, each having different implications (mandatory or optional) and each being relevant for the other (fig no. 1).

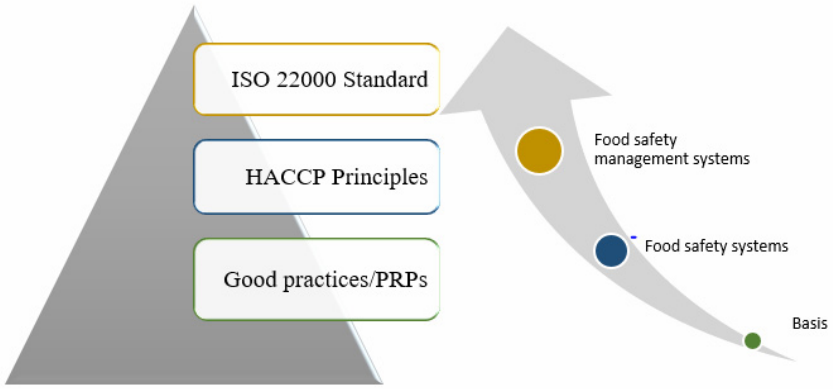

Fig. no. 1 ISO 22000 pyramid – main structure for food companies
Source: own source

Thus, the development of a sustainable global food market (from an economic, social and ethical point of view) is based on a long-term relationship between industrial production and consumption needs, taking into consideration safety and preventive measures that can be easily harmonized through mandatory standards and voluntarily guarantees, which represent today main quality indicators in terms of food safety management.

2. Romania's organic food market – food safety and the organic food industry

An organic food product, as the main element of the organic food market, is generally positioned as a proceeding of classic food products (in terms of added value to the food sector) and not as a distinct food product. In other words, organic food completes and enriches the concept of "quality food products" in its classical sense; therefore a "conventional" (prescribed) characteristic is overlapped by superior quality characteristics that add environmental performance (Olaru, 2005).
In this context, organic markets tend to be considered superior markets taking into account the requirements imposed by the organic food legislation, while its products can be considered quality products as their characteristics are constantly kept under control by specialized certification bodies.
Different studies highlight that only in USA an average of 76 million diseases, 325.000 hospitalizations and 5.000 deaths per year are caused by food related disease (Cooperhouse et al, 2004), as more than 200 known diseases are transmitted by different viruses, bacteria, metals or toxins throughout food.
In this context, an efficient but strict monitoring process can represent an important tool in the food industry, where hazards and food contamination risks can be identified on all production, processing or commercial chains. Thus, food safety represents a vital component for any modern food company as organizations along the food chain need to demonstrate their ability to ensure and keep under control possible dangers that can influence the end result of food consumption.
Starting with the food safety managed systems that set minimum and mandatory requirements for safety performance, the food industry has continued to develop the safety component, taking extending the notion of safety to multiple levels: environment, animal welfare, clean ingredients, non-GMO products, in other words the organic food industry.
From a chemical point of view, organic farming enhances the food safety because of three prominent reasons (Gupta, 2017):

- lower nitrogen application (which reduce nitrate concentrations);
- avoidance of pesticide use (which results in virtually no pesticide residues);
- no use of chemical fertilizers (to ensure low concentrations of chemical

residues).

Taking into consideration that HACCP principles have been transposed and implemented by multiple regional legislations, in the context of organic farming expansion, it can be acknowledged that some countries have the bassline instruments so that food producers, processors and suppliers can monitor and keep under control their safety performance, in order to be able to adopt organic compliance in the conversion period.

As an example, the European Union has rapidly embraced the Codex Alimentarius guidelines, prompting them throughout legislation on food safety subjects, one of the most important acts in this domain being the Council Directive 93/43/EEC on the Hygiene of Food stuffs, that sets mandatory directives regarding the implementation of HACCP principles. From this point of view, all EU countries must adapt by transposing the guidelines into their national legislation.

For example, upon acceding the European Union, Romania, as an eastern European country has aligned with the European rules in force, the number one priority for all food organizations being to ensure safety for their products, without compromising the food chain. According to the national Romanian law this can be done throughout implementing and certifying a Food Safety Management System. At a deeper analysis, organic food principles can be considered similar to HACCP plans, as both require a well-done documentation and analyses the production/processing process, step by step.

In Romania, more than 8000 food organisations activate under an organic label. Certainly, all companies must apply both organic and food safety legislation, in terms of production, processing distribution, but not all of them use HACCP as an instrument that integrates the organic requirements in the hazard control processes. Therefore, by analysing multiple HACCP documentations of Romanian food producers, a set of good practices have been identified:

- an HACCP plan can be used in outlining procedures that monitor the risk of mixture between organic and non-organic materials, including non-approved ingredients or prohibited substances that can compromise the organic quality of the end food product;
- for processed food, am HACCP plan will include attributes like: minimum or maximum processing temperature, minimum or maximum processing time period, characteristics that are required in order to eliminate and keep under control harmful bacteria or microbes;
- for a better understanding of the food production process, organic monitoring procedures must be implemented in order for all employees and other interested parties to easily identify each process, what it involves, where it takes place, the timing of the activities, the main method of production and the responsible person for the specific process;
- an HACCP plan must provide a well-documented procedure regarding disposal or reprocessing of a certain food product in case the organic performance is not achieved (for example, in terms of cooking temperature);
- HACCP can be used as an assessment plan for external factors in order to create and maintain a list of inputs used by the production unit that can influence organic quality: fertilizers, insecticides, rodenticides, herbicides, technological additives and auxiliaries used, feed additives and supplements, animal treatment products, seeds and vegetative propagation material, hygienic substances;
- HACCP can be used as an ingredient assessment plan in the organic food industry, so that each food production process will have a complex substance list as an input, that contains multiple information regarding the product, information that is mandatory for organic food labelling;
- HACCP can be a useful instrument in term of traceability of food products, its

record keeping and documentation system establishing all stages of the food circuit. This is a very important aspect for the organic food industry as complex systems for collecting logistic chain information can involve higher costs and by using HACCP documentation system in this context the organisation can able to identify all sources that provided a food component or that provided multiple ingredients;

Generally speaking, the main objective and outcome of HACCP systems represent food safety while organic food industry focuses on the compliance with the organic legislation and standards

But, for an organic producer to streamline the production process and keep under control multiple risks that appear in the organic sector, HACCP should be used as an important tool for implementing and maintaining organic standards and the system's objectives should not be limited to food safety issues, as food safety represent a main component/principle of organic agriculture.

Thus, HACCP offers a number of advantages to the food industry, and especially to the organic processor because the system (Cooperhouse et al, 2004):

- Focuses on identifying and preventing hazards from contaminating food;
- Has scientific based approaches;
- Permits more efficient and effective government oversight, primarily because the recordkeeping allows investigators to see how well a company is complying with food safety laws over a period rather than how well it is doing on any given day
- Places responsibility for ensuring food safety appropriately on the food manufacturer or distributor (Figure no 2).
- Helps food companies compete more effectively in the world market
- Reduces barriers to international trade

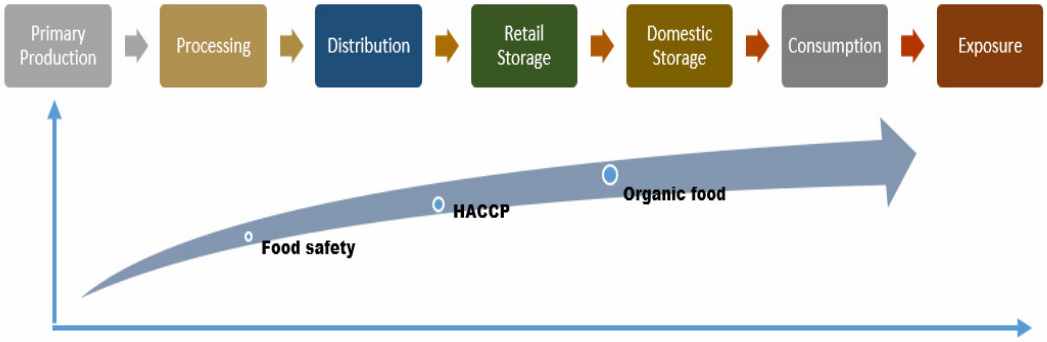

Fig. no. 2 Modern food logistics chain - A modern overview
Source: own source

Quality throughout an organic performance and safety in food should be analysed and considered together, as their main objectives share multiple common principles, especially from a management perspective.

Conclusions

Developing a food safety management system that can prevent potential risks and threats as well as positively impact the business processes must be a key objective of each organization that operates in the food chain.

Speaking of today's economic diversity, methods and materials will differ when analysing organic and nonorganic operations, but the main outcome is the same: developing a

systematic approach that can easily control all processes and maintain traceability of the logistic system. Thus, organic agriculture goes hand in hand with systematic preventive approaches used in the food industry, like HACCP.

In Romania, following multiple regional examples, the national food industry legislation has introduced as mandatory the application of food safety management system based on risk assessment and prevention principles - HACCP system, for all units involved in the food chain (from primary producers to the sale process - transportation, storage and trade in food). Thus, it can be said that a niche market that clearly addresses the innocuity and quality of food is that of organic or premium products. Even if organic agriculture has recently become a nice market in Romania (official regulated with the role of EU membership) the national producers have adopted organic principles and with the help of HACCP systems a series of good practices have been identified and analysed.

Nevertheless, safe food represents quality food from multiple points of view, and by carefully implementing a management program based on HACCP principles, an organic food producer can control both safe production conditions and compliance with national organic standards.

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INCREASING THE PERFORMANCE OF THE ORGANIC FOOD SECTOR IN THE EUROPEAN UNION BY USING INNOVATIVE INSTRUMENTS

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Abstract

For the last decades, organic agriculture and the organic food market represent main sectors that have constantly grown across Europe. Developing from a niche market to a global standalone sector, the organic food market has reached more than 80 billion euros worldwide.

The sector's fast evolution is closely linked to the notion of quality and the growing interest that consumers have in food safety and security requirements. In terms of perception, nowadays, quality represents more than the food product itself and its sensory features, the concept being enlarged and applied to production processes, environment and social aspects. In this context, consumers tend to identify a quality product based on multiple factors that are not always easy to recognize. So, how can consumers identify organic food products based on their quality characteristics that are not so easy to identify, even after consumption?

Thus, the present study aims to highlight the importance of innovative instruments in ensuring consumer guarantees, especially for organic food products that involve higher prices in exchange of quality values that cannot be identified only by a visual analysis of the product.

In other words, the research focuses on guarantees and quality-assurance programs as defining innovative instruments that can help consumers in their buying decision. Starting with a literature review regarding the consumer's perception on organic food, the present paper analysis different labelling regulations in the European Union and databases models created to help consumers be informed and be able to identify original products.

Keywords

Organic food, consumer's trust, innovative instruments, organic database, food guarantees

JEL Classification: Q13, Q18, Q52, O13,

Introduction

Organic farming along with organic food products are considered to be one of the most important directions of developing for the global food market and supply chains (Dima, 2005). Thus, unlike large-scale conventional farming, which is considered today to be an energy-intensive system, that involves high costs for the society and potential risks for both the environment and human health, the concepts of organic agriculture and organic food represent a sustainable solution that comes to meet the negative effects caused by the industrialization of the food sector over the years.

Organic agriculture is a growing sector, that by 2016 was practiced in 178 countries spread over all five continents on an agricultural area of about 57.8 million hectares, by more than 7.8 million producers (FiBL, 2018). In this context, the European Union represents one of the pioneers of organic agriculture and one of the main promoters of the organic food market.

In order to build a common market, the European Union has created a set of regulations on organic farming that aim to provide well documented procedures for the production of organic food, procedures that must be embraced by all member states. Among the main roles of these rules and regulations EU encourages high standards for animal welfare, requires farmers to meet the specific quality standards and satisfies consumers' demand for trustworthy organic products whilst providing a fair marketplace for producers, distributors and marketers (European Commission, 2019).

But despite the growing perspectives of the organic food market in the near future, how innovative is this sector? For 2020, the European Union has as a main objective the creation of bioeconomy, a concept that involves smart, sustainable and inclusive growth, in order t turn innovative ideas into final products and services, by creating new jobs, in terms of sustainability for both the economic sector and the environment.

From the perspective of the organic food market, a constant and sustainable growth cannot be met as the demand of such products on EU territory faces an unequal distribution in terms of consumption, this leading to different hypotheses, from the organic potential of the region, to the climate conditions, but also to the consumer behaviour, that, due to different perspectives or beliefs, does not embrace organic food as a consumption habit (Bobe et al, 2018).

Given these directions, the main objective of the present paper is to identify how can modern innovative instruments influence the consumer's buying decision for food products that conventional consumers do not trust, due to their prescribed quality characteristics that are not identifiable at a first glance, but for which additional costs are required. Therefore, the research is divided into two main parts that provide a better understanding of the subject. The starting point is represented by identifying the current position of organic food in the European Unions policy, but also in the European consumer's perception, based on different contemporary literature perspectives. Thus, the research methodology is based on a literature review that highlights the way in which organic food products are promoted by the EU and seen by consumers, in terms of quality characteristics, guarantees and assurances.

Different studies (Bobe et al, 2016; Toma et al, 2017; Popa et al, 2019) indicate multiple patterns regarding the consumer's perception on organic food. One of the main determinant in this context is the level information that consumers have access to: misinformed consumers tend to display higher levels of scepticism, while informed consumers usually buy organic food on a regular basis, due to its benefits (high nutrient levels, environmental benefits etc.).

The study uses the models and resources that EU has already provided to consumers in order to their trust towards certain quality products, which are distinguished by their specific nutritional characteristics and which add value to the nutrition act. For example, for EU geographical indications food products have a new database, that aims to increase transparency and simplify search, so that consumers can easily identify a certified food product and have a guarantee that the designation has not been used fraudulently.

Also, different visual resources are projected and analysed in order to better understand how innovative instruments, like labelling logos can influence the consumer's behaviour regarding organic food products. The analysis will take into consideration modern consumers' perspectives and emerging demands, like the existence of reliable sources of information, easily access to computerized resources that can ease buying decisions, usage

of modern technologies, like mobile applications or QR code scanning etc. so that the need of understanding the product's destination can be met.

1. Organic food products and consumer's perception. A literature review

Organic food represents the final result of the organic agricultural sector, these food products being obtained by applying specific methods that promote the usage of natural substances and processes. In other words, organic food and its production methods encourage a responsible approach towards the use of energy and natural resources, biodiversity preservation, maintenance of regional ecological balances, water quality and soil fertility, by having a limited impact on the environment.

The organic food market is one of the most important growing sectors at a global level, having a significant impact from both an economic and social point of view because of its increase by almost 90 billion dollars in just two decades, whit future growing perspectives still available. In this context, the global demand has also doubled since 2000, but in terms of specific challenges like demand concentration (90% of organic food sales being related to North America and Europe). At a deeper analysis, this demand is by no means proportionately divided among national markets within the European region as well (Jensen, 2011).

The segmentation of the organic food market within the European Union is created by cross-cultural differences. Mainly, different national markets are facing acceptance issues from both producers' and consumers' perspective. The main issue raised involves a compromise and its acceptance: more rigid production standards (from a producer's perspective) and higher prices (form a consumer's perspective) in contrast with faster methods of production and cheaper food products (Bobe et al, 2016).

But the European Union is trying to counteract these trends, so that farmers can understand the benefits that organic farming methods can bring for a sustainable business and consumers can trust that the farmers follow the specific rules on organic production. In this context, the EU uses different resources to maintain a strict control over the productive sector, like legislation, certification processed, labelling requirements, traceability systems etc. Also, in terms of traceability, as the organic sector represents a complex supply food chain, that combines processing stages, distribution and commercial sectors, all phases of the logistic link are subject to multiple checks and EU organic regulations.

In order to build trust in organic farming and organic food products, the European Union follows a four points checklist (European Commission, 2019):

- each EU member appoints 'control bodies or authorities' to inspect operators in the organics food chain. Producers, distributors and marketers of organic products must register with their local control body before they are allowed to market their food as organic;
- after they have been inspected and checked, they will be awarded a certificate to confirm that their products meet organic standards;
- all operators are checked at least once a year to make sure that they are continuing to follow the rules;
- imported organic food is also subject to control procedures to guarantee that they have also been produced and shipped in accordance with organic principles.

Also, in order to help consumers identify more easily an organic food product, specific labelling rules have been adopted. since July 2010. More exactly, all prepacked organic products produced and sold in the European Union must be labelled with the mandatory EU logo (Regulation (EC) No. 834/2007). Besides the EU logo, in many European countries promotes its own organic certification logo, that can be applied voluntary on the food products obtain in a specific country, based on the national legislation requirements (Table no 1). Thus, it can be observed that the EU promotes a series of sustained efforts in order to

provide an effective legal framework that will help build further consumer confidence in the EU organic food agriculture and system and that will satisfy consumer demand for informational resources and trustworthy organic food products.

Table no. 1 – The mandatory EU organic food logo and examples of national voluntary organic certification logos

Country	Organic food logo	Country	Organic food logo	Country	Organic food logo
EU		France		Belgium	
Austria		Germany		Romania	

Source: FiBL country reports, https://www.organic-europe.net/country-info.html

Taking into consideration this organizational context, it is important to identify different consumers' perceptions, from different European markets on organic food products, in order to understand the effectiveness of the EU organic food systems (in terms of informational resources, accessibility) in promoting guarantees and assurances for the potential consumers.

Thus, for German consumers organic food is perceived as being environmentally friendly by promoting animal welfare, as being healthier than conventional food because of the production methods used, tastes better and does not contain pesticides (Gottschalk & Leistner, 2013). In terms of price perspectives, Polish consumers are willing to pay 17.4% more for organic products than for their conventional counterparts, while the main barriers in buying organic food in Poland include: limited availability, insufficient knowledge of both retailers and producers and the lack of trust of consumers (Bryła, 2016).

Part of Romanian consumer lack basic knowledge on organic food and on the principles, that determine organic food prices, even if they auto characterize themselves as being familiarized with the concepts related to the organic sector (Bobe et al, 2016). Also, Schleenbecker and Hamm (2013) highlights that European consumers have limited knowledge regarding the organic food labels and their distinctive logos in contrast with the USA, where a label is seen as the main instrument of identifying an organic food product.

Different studies highlight that part of the European consumers do not think perceive organic food as being any better than conventional food from a sensory point of view, so why bother paying more for a food product that they can obtain at a cheaper price (Shafie, 2012). In terms of consumer profiles, the literature review highlights that western EU countries have a better perception on organic food products and are willing to pay more for the added value that they bring, while certain central and eastern EU countries register a low demand regarding organic food, the main barrier in buying organic being consumer's trust and knowledge.

Nevertheless, despite that a limited number of studies have compared the nutritional quality of organic vs conventional food, there are reasons to favour organic food consumption such as less exposure to antibiotic; natural pesticides defence (plant's own phytochemicals); avoiding loss of nutritional value of fresh fruits and vegetables because of a lower shelf life

compared to conventional ones; rigorous standards of certification, reasons that should determine consumers to be interested in and buy organic food (Popa et al, 2019).

2. Innovative instruments used to increase the performance of the organic food sector

Organic farming can be considered itself an innovation in the agricultural sector, as it responds to multiple modern issued like food safety and security, environmental risks, biodiversity etc. But in the context of new ideas and concepts, innovation in the organic food sector depends on the functioning of the system as a whole, from both consumers' and producers' perspective, and in this sense, the organic food sector should start by becoming more widespread within the EU, so that consumers and producers can be better informed.

As multiple studies suggest, the low organic food consuming rates within EU are determined by the consumers' lack of knowledge regarding the organic food sector, that stands as a hypothesis for the disproportional division of the EU organic food market in terms of consumption and production. For example, the organic food productive system represents a dynamic sector in Romania, registering in the past years a fast-ascending evolution, while the internal demand of such products is underdeveloped and Romania is seen as a highly export-oriented country, most of its organic production being sent to other European countries.

Thus, given these general directions, EU must solve one of the major issue that the consumers are facing with: information access and knowledge deficiencies. By having well informed consumers EU can combat other issues like fraud in organic food market and prevent the improper use of the organic logo. Informational resources play an important part for the modern consumer that can have access to multiple platforms via internet and mobile devices.

Even if there is a general EU legislation framework in place, which involves strict rules of certification for organic food products, this aspect is not known by a large number of EU consumers and should be promoted so that any potential consumer can have a guarantee that the product that he is buying is organic and superior from multiple points of view. Also, a very important aspect is represented by the organic food labels and learning how to read them.

Taking as an example the quality schemes promoted by EU in order to protect geographical indications and help consumers better identify these products, the organic sector can learn from these EU policies on how to increase transparency and how to simplify consumer's search. Beside the specific logos (a visual resource already been implemented in the organic food sector) the traditional food sector benefits of a meta-database that contains all traditional food products, in correspondence with their certified designation and much more useful information for the consumer. Thus, with just an internet search away, any consumer can check if a particular food product is listed as a traditional food product within the EU. Moreover, due to the success of the usage of this database, starting 1st of April 2019 a new public database called "eAmbrosia - the EU Geographical Indications registers" will give consumers easy access to information on all EU Geographical Indications, including their status (applied, published or registered), their product specification, and a direct link to the legal basis when they are officially protected.

A meta-database for the organic food sector can represent a useful resource for the European consumer as each organic food product can be labelled and identified by using a specific certification code, provided by the certification body that authorized the commercialization of the product under an organic label. Using modern technologies like QR scanning codes and mobile applications, consumer could check in just a few second that a food product is or is not organic and that the information mentioned on the label is correct.

Also, well-structured informational programs can be addressed to all consumers in order to help them better understand the organic market's role in both their personal health and

environmental protection, by meeting certain consumers' needs regarding (Bobe et al, 2018):

1. general information that can help consumers acknowledge organic food products cost and benefits and the certification and labelling matrix;
2. database check – the possibility to check any organic food products if it's authentic or not (by adding one of its identification items in search area – product name, producer name, certification body cod) or by scanning a QR code listed on the products label;
3. organic food product information – after confirming that the product is genuine, consumers can have access to all the information from the label plus extra information that the producer wasn't able to add on label due to space restrictions;
4. a section where consumers can address questions and queries, where they can highlight problems and add proposals.

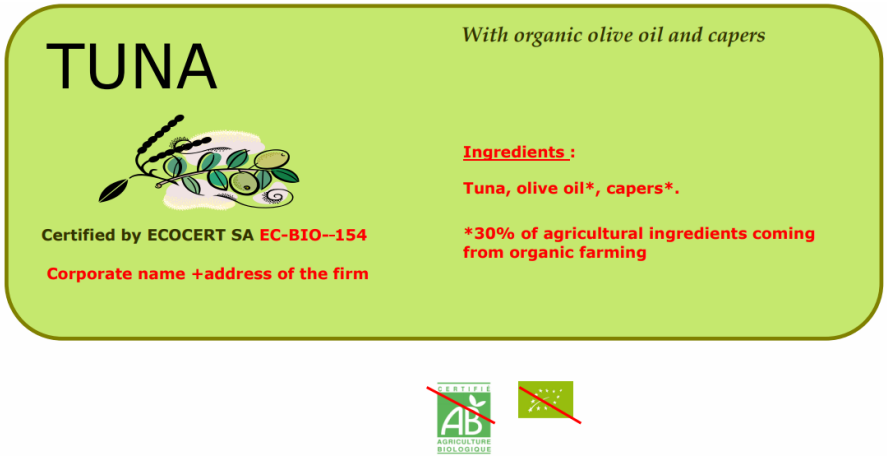
Another important aspect for the consumer is to know how to read an organic food label. There are certain mandatory references that each organic food product must have on its label. In the next section, using a set of labels from Ecocert database, 5 standard examples of labels that can contain the word "organic" are presented with the mandatory information highlighted in red. These examples should be acknowledged and understood by all consumers and also applied when differentiating an organic from a conventional food product.

Example 1 – an organic food product manufactured in the EU (France) with all its ingredients produced in the EU:

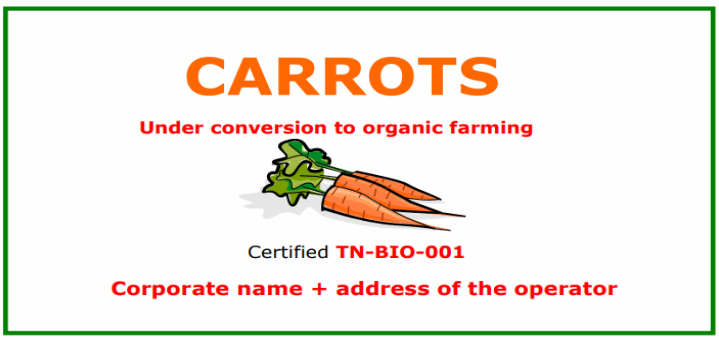
Example 2 – an organic food product manufactured in the EU (France) with ingredients produced both in the EU and a third-party country (Morocco):

Example 3 – a food product having less than 95% organic ingredients, produced in Turkey organic logos are not used as the product contains more than 5% conventional ingredients:

Example 4 – wild fishing products (70%) and other organic ingredients (30%), manufactured in Ecuador; organic logos are not used as the product contains conventional ingredients:



Example 5 –in Tunisia; organic logos are not used as the product has not yet passed the conversion under organic agriculture conversion products, produced and packaged period:



Therefore, consumer's needs and satisfaction transposed to the industrial and safety requirements must also include educational programs and access to informational resources. Transparency should represent a very important aspect for producers and should be in the center of a company's strategy, in order to build sustainable businesses in the food industry. Thus, an informed consumer is a responsible consumer, and emerging markets like the organic food market are need better informed consumers in order to evolve and self-promote its products.

Conclusions

Organic food consumption can bring multiple benefits to both individuals and the environment. Global organic markets tend to be divided as they are driven by the same economic mechanisms as all global good markets, demand and production. Thus, for the organic food sector the biggest demand volumes do not usually come from the same regions that are highly productive in terms of organic agriculture.

The European Union represent a global consumer of organic food products and shares different consumers patterns from country to country. Multiple studies highlight that lack of information regarding the strict rules that regulates the organic food sector results in a general mistrust from consumers' perspective. Therefore, additional guarantees are needed and these can be met only by assuring that the consumers are correctly informed. In this context, innovative resources, like logos, easy to access databases, mobile applications play a very important role, in increasing consumers' knowledge. Nevertheless, the most important resource when identifying an organic food product is the product's label. Reading and understanding correctly label information still represents a barrier for many consumers, although there are 5 basic scenarios that regulate the organic products market in Europe.

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TRENDS IN AIRLINE BUSINESS MODELS

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Abstract
The strategies adopted by both legacy and low-cost airlines have met substantial transformations, adjusting some of the important features of their business models, reflected in a continuous process of mutual influence. Factors like the liberalization of air traffic, the rescission of government policies, abandonment of state aid, the privatization of some airlines, etc. have produced important changes in the companies' strategies. The converging evolution of business models of LCC and legacy airlines, the partnerships and alliances between companies represent the cornerstone for the authors' research. Thus, the paper emphasizes the main features and the impact of low-cost carriers on the market dynamics and on the development of regional airports or on route development for improved connectivity. Also, the changes in consumer behaviours and a social network analysis will be researched. A long term strategy for airlines, competitively sustainable planning, consisting on diversification and flexibility of tariffs and services will create a stable bridge between low-cost and traditional carriers, and will meet the requirements of a good airline-airport relationship, the demands for economic and tourism growth, which will implicitly led to the development of new jobs.

Keywords
Legacy airlines, low-cost carrier, business models, airline strategies analysis, market share

JEL Classification
C61, D40, E30, L11, L21, L22, L93, R40

Introduction

The paper presents a research concerning the development of air transport services and the changes that took place in the aeronautical industry due to the deployment of low-cost carriers. The specifics and strategies of different airlines will be analyzed, having as basis the evolution of air traffic and market share at national and European level, but also analyzes on customer satisfaction and the airlines impact on airport development.
In addition, a comprehensive documentation regarding new trends in airline strategies defines the authors' research. In this concern, relevant studies were selected and a colection of data from international organizations in the aviation sector was performed. The study was also accomplished by discussions carried at Romanian airports and with airline representatives, which were aimed to help the authors identify the strengths and weaknesses of different airlines and emphasize the evolution of various airlines and the major trends in

LC, LCC or hybrid carrier (HC) development. The modalities to strengthen airlines management and their business models were also considered in the context of increasing air transport competition.
In order to better understand the state of development in each category of airline, the study begins with an overview of the current socio-economic situation, an analysis on the evolution of LCCs and legacy carriers based on passenger preferences, load factor and market share.

Multi-criteria analysis of airlines' strategies and business models
After an aggressive market penetration of low-cost carriers in the 90's Europe, nowadays traditional airlines are experiencing a severe crisis, withdrawing from certain routes and making cuts in staff. As a result, the low-cost market-share is in a continuous growth, gaining an average of 1.38% every year (fig. no.1).

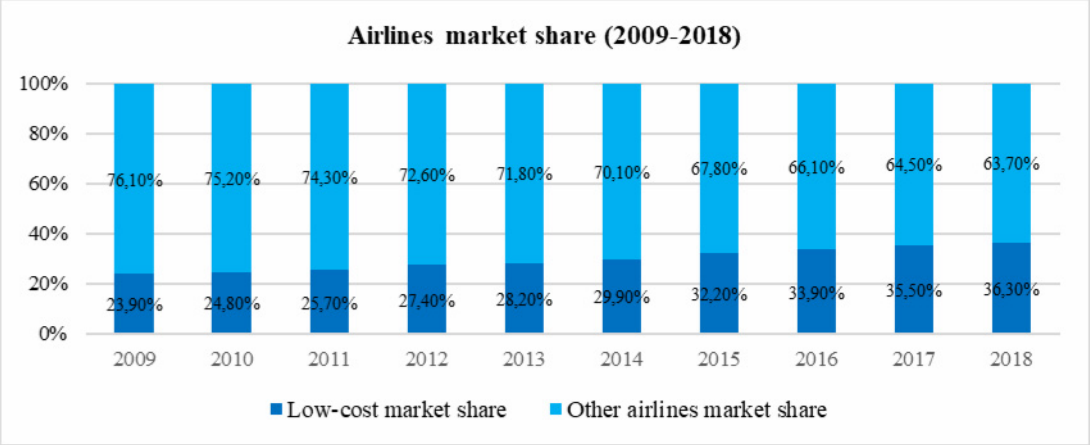

Fig. no. 1 Airlines market share in Europe
Source: based on data from Anna Aero, 2018. LCC capacity in Europe set for half a billion seats in 2018

However, we assist to the collaps and diparition of some LCCs. For example, due to financial difficulties, Germany's second largest airline (i.e. Air Berlin) went into insolvency in 2017 since Etihad Airways has quit to offer support (Hirschfeld, 2018). It is also the case of WOW Air's bankrupcy, on account of rising fuel prices and unfavourable exchange rates (Slotnick, 2019).
The LCCs are relying on a low threshold for ticket prices, but strong auxiliary revenues. For this reason, they are able to stimulate demand growth. The strong competition between low-cost carriers is sustained by the strategy of lowering the unit costs.
In extra-season, for some destinations that are not interesting for the period, the cheapest flights in Romania are practiced by Ryanair, prices starting from 3/5 euros. Thus, national legacy/hybrid carriers (i.e. Tarom and Blue Air) are striving to reduce their unitary cost to offer lower rates. These companies are being forced to adopt low cost-inspired strategies especially in short-term operations, this resulting in the difficulty of differentiating between the two business models.
The following table evaluates airlines' performance, considering criteria such as service quality, operational performance and claim processing (AirHelp, 2018). The analysis (table no. 1) shows that there is still a significant difference in the services offered by LCs and LCCs, but minor or no differences for the two types of business models regarding processing of passenger claims. On the other hand, it seems that low-cost carriers give greater importance to on-time performance than legacy airlines.

Table no. 1 Performance analysis for LC and LCC

Airline	Quality of service	On-time performance	Claim processing	Ranking position
Lufthansa (LH/DLH)	9.5	7.6	8.6	2
Turkish Airlines (TK/THY)	8.0	7.3	8.5	15
Air France (AF/AFR)	7.8	7.5	7,8	34
Tarom (RO/ROT)	6.3	7.8	7.9	49
Wizz Air (W6/WZZ)	6	8.8	9.1	13
Ryanair (FR/RYR)	6.3	8.6	3.3	67
Eurowings (EW/EWG)	6.0	8.0	9.1	31

Source: based on data from AirHelp, 2018. Performance analysis for LC and LCC, Global airline ranking

LCC strategy of lowering costs comes from minimizing ground services, outsourcing a large part of non-flight operations or reductions in turnaround time (Koç & Erkin, 2011). The strategies involve generally short turnaround times, typically from 20 to 40 minutes, with a top of 45 min at main airports (also the case of Henri Coandă airport-see table no.2). So, a 30 min average turn-around time and apx. 12hours/day aircraft usage, represent the targets of a performant airline business model (Wizz Air, 2018).

Table no. 2 WizzAir turnaround time at Henri Coandă and Varna airports

Airport	Airport characteristics	Wizz Air turnaround time
Henri Coandă (OTP/ LROP)	Busiest airport in Romania	45 min
Varna (VAR/LBWN)	3rd largest airport in Bulgaria	25 min

Source: based on WizzAir data, 2018, Turn-around time at Henri Coandă and Varna airports, WizzAir internal data.

These times can also be improved by boarding strategies. Turnaround times are minimized to 25 min, this being possible due to the choice of middle range mono-isle aircrafts. Airlines can rely on the advantage given by single aisle cabin layouts for minimum passenger movement times (Fuchte et. al, 2011). It has been shown that transporting passengers from the boarding gate to the aircraft with busses in the detriment of air bridge embarkation, and the use of both front and rear aircraft entrances has maximum efficiency. This technique eliminates the need for strategies related to placing passengers in the aircraft, such as Wilma, Steffen, Kautzka-3, etc., used for time minimization.

An optimization of the turnaround time implies task assignment minimization, which consists in choosing the values x_{ij} that represent the proportion of time i consumed to achieve the task j, for $i = 1, \dots, n$ and $j = 1, \dots, m$ and the coefficients c_{ij} which represent the value attributed to the time i for the task j. The problem considers the following constraints:

$$\sum_{j=1}^{m} x_{ij} \leq 1, \qquad \sum_{i=1}^{n} x_{ij} \leq 1, \qquad x_{ij} \geq 0 \tag{1}$$

The optimization problem can be written as follows:

$$\min_{x \in R^{nm}} f(x) \ \left(= \sum_{i=1}^{n} \sum_{j=1}^{m} c_{ij} x_{ij}\right) \tag{2}$$

$$\begin{cases} \sum_{j=1}^{m} x_{ij} \leq 1, \forall j = 1, \dots, m \\ \sum_{i=1}^{n} x_{ij} \leq 1, \forall i = 1, \dots, n \\ x_{ij} \geq 0, \forall i, j \end{cases} \quad (3)$$

The optimal repartition of resources for turnaround minimization reflects in the increase of the daily use of aircrafts. (Doganis, 2001) shows that the growth in the number of daily flights was considered one of the main advantages of LCCs over traditional airlines.

The increasing competition between traditional and low-cost airlines leads not only to an augmentation in passenger traffic or lower tariffs, but has an impact on aircraft manufacturers. This has led to a very high demand on the range of middle market aircrafts, with a dominant command for B737 and A320. For example, deliveries have grown with 28% from 2013 to 2018 for Airbus commercial orders, (i.e. up to 800 deliveries in 2018, 626 orders just for A320) (Reid, 2019). Similar figures can be retrieved at Boeing, i.e. 508 aircrafts were delivered last year, this showing a rise in the shares of both maufacturers (Reid, 2019).

In very few cases, a low cost operator decided to replace the fleet with another type of aircraft; for example EasyJet signed in 2002 a contract for 120 Airbus 319 in an attempt to gradually eliminate Boeing 737 aircraft from its fleet (Moores, 2017). It seems that larger corridors (from Airbus 319 for example), keep the turnaround time to a minimum, due to optimized boarding time (Kolukısa, 2009).

For the development of a competition framework, the professional relationships between airlines imply tariffs harmonization, schedules coordination and revenue sharing agreements, which are based on analysis of fares and capacity data. Regarding the annual seat capacity of top airlines (see fig. 2), in 2018, Ryanair maintained its leading position in the european low-cost market, and the 3rd place in Romania regarding the number of passengers transported.

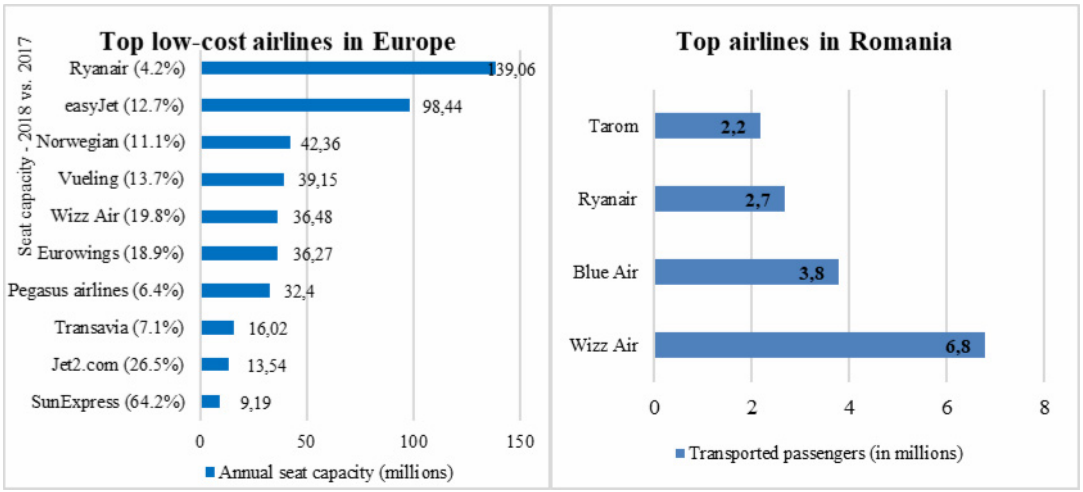

Fig. no. 2 Top low-cost carriers in Europe/top airlines in Romania

Source: Anna Aero, 2018. Top LCC in Europe /Imperator Travel, 2018. Romanian aviation market

With an average net post-tax profit of 7.58$/pax and a load factor of 74%, the airlines in Europe have a unit labour cost of 0.123$/ATK (IATA, 2018). The labour cost as a percentage of the airlines' revenues indicate the figures shown in table no. 3 (CAPA, 2012). In this concern, the data indicates an important difference between the approach of the two business models, that has been kept despite their converging evolution.

Table no. 3 Airlines employee costs

Airline	Lufthansa	Turkish	Air France	Wizz Air	Ryanair
Employee cost (EUR cent/ATK)	17.6	7.56	17.67	2.59	3.62

Source: based on data from CAPA, 2012. European airline labor productivity, CAPA rankings

The figures show a substantial reduction in labor costs, up to 6 to 7 times lower in the case of LCCs, which gives an economic advantage over their main competitors. More so, this mirrors a disparity due to the labor force capture area, since the salary standards in Eastern Europe are lower than those from the Western European countries.

A strategical objective of LCC is to maintain a higher load factor, which represents an important contribution to lowering prices and to the payment of employees. Related to the average LF in Europe (which is 74%), the LCC's LF reflects the continuous struggle to attract higher numbers of passengers. An increased by 1.3ppts in Wizz Air's load factor in 2018, places the airline on the third position (with 91.3% LF), but under its main competitors Ryanair and easyJet's, with LFs of 95%, respectively 93.3% for the same year (CAPA, 2018).

In this concurential context, unlike the LCC case, an essential policy of big airlines for improving RPK and LF, is to create groups (like Air France/KLM Group, Lufthansa Group, SAS Group, etc.).

One of the differentiating elements that has been preserved for the two categories of carriers is given by the use of the hub-and-spoke vs. point-to-point route system.The last system, characteristic to low-cost operators implies single fleet type requirements and no network constraints for asset utilization (Cook & Goodwin, 2008). Also, in this case we can find some exceptions. Already, LCCs are attacking the Hub&Spoke concept through some agreements with smart carriers. For example, Ryanair flights to Madrid from different destinations are continued by Air Europa to South America; having as basis an agreement between the two airlines, founded on the concept of feeder company.

Therefore, LCCs and LCs have become convergent to a new business model: hybrid. Some airlines are totally hybrid, while others have only a fare offer service class assimilated to this model; Lufthansa Group beeing a good example (table no.4).

Table no. 4 Relationship between service classes and fare offers

Airline	Lufthansa/Austrian/Swiss	Brussels Airlines	Eurowings
Service class/ Fare offer	Business Flex	-	-
	Business Saver	Bizz&Class	-
	Economy Flex	Flex&Fast	BEST fare
	Economy Classic	Light&Relax	SMART fare
	Economy Light	Check&Go	BASIC fare

Source: based on data from Lufthansa Group, 2018. IAS site visit May 2018, The Leading Airline Group.

One good example of hybrid carrier is Blue Air, the second airline in terms of passengers transported (3.8 millions in 2018 and a market share of 21% in Romania), whose smart flying concept presumes services specific to traditional carriers at prices specific to LCCs. As expected, the Romanian market was taken over by low-cost companies (fig no. 2), but in this context Blue Air's personalized serviced placed him on a well-deserved second position in the passengers choice. Targeting high competitivity, this model takes over elements from both business models analyzed above. The major competitiveness is on short and middle distance routes.

Analysis of the impact of low-cost carriers on the development of regional airports

The increase in the number of low-cost carriers is due both to the benefits offered to airports and to passengers. Smaller airports are destined to serve regional traffic, but in most cases they have an excess of capacity that LCCs can take advantage of. This situation puts airports in the position to negotiate more with low-cost operators on contract terms, being willing to demand airport taxes lower than wished.

More so, the bankrupt of some airlines (like Malev from Hungary of Carpatair from Romania), has begun to represent a good omen for other companies, which had the oportunity to take over most of their routes. Wizz Air was one of the complainants of the state aid measure when Hungaria was trying to renationalize Malev (Roșca, 2010). In the case of Carpatair, the airline considered that Traian Vuia Timișoara Airport has favored Wizz Air, even applying discriminatory commercial policies, paying four times lower taxes; the argument being that WizzAir flew by larger aircrafts and thus carryed more passengers (Mureșan, 2013). The evolution of aircraft movements began to fluctuate strongly at Timișoara Airport when Carpatair showed signs of weakness in 2011, but passenger traffic values have exceeded expectations when Wizz asumed Carpatair's routes (figures showing an 25.6% increase in pax. numbers in 2015 compared to the previous year). The LCC began to take over categories of passengers who were usually loyal to legacy airlines like Tarom.

Notwithstanding the above noted, the airports can have additional conditions associated with airport taxes, offering discounts reported to the number of movements/passengers. For example, in the case of Traian Vuia Cluj airport, lightening charges can be supplemented with 20% for aircraft tonnage higher than 30 tones, or supplemented as follows for aircrafts under 2-30 tones (AIP, 2015).

$$L = \{\alpha \cdot Charge + [r \cdot (30 - MTOW)]\} \cdot MTOW \quad (4)$$

Where:

α -120%

Charge – 2,55 EURO/tone/landing/take off

30 – average MTOW constant

r – degressive rate of the tonnage, calculated as follows:

$$r = 1/\sqrt{MTOW} \quad (5)$$

For small aircrafts with a low MTOW (for example ATR 42 300-16,900 kg/ATR 42 400-18,200 kg, ATR 42-500/600-8,600 kg), the parking charges are also reduced (AIP, 2015).

$$Pk = \{Charge \cdot h + [r \cdot (30 - MTOW)]\} \cdot MTOW \quad (6)$$

Charge – 0,2 EURO/tone/hour

h –parking hours

The influence of the low-cost model on the Romanian market and the development of regional airports were shown initially by the arrival of Wizz Air in mid 2006, which produced an increase of 2.008.465 passengers by 2007. So, not only low-cost carriers have an impact on the market dynamics and on the development of regional airports, but this situation also reflects in a congestion reduction on main airports.

The integration of LCC into the domestic air transport market assumed an important economic growth especially for regional airports. A good airline-airport relationship complies with the demands for economic/tourism growth, which will implicitly led to air traffic growth at these airports, increasing revenues to the local budget, and development of new jobs.

Also, we assist to a change in the geography of routes because LCC have developed new regional routes, providing a connection with big hubs. For example Romanian cities like Iași, Cluj, Timișoara, etc. have become connected by international destinations due to the low-cost contribution.

The increase in the number of low-cost airlines and their operating frequency especially for tourism purposes creates in the long run a potential for regional airports growth, this

representing a pole of development of living standards at local/regional level (Manasia & Taropa, 2015). Also, this is mirrored in increased investments attracted to the country and region, higher contributions of the airports to the local budget, higher levels of foreign trade, higher potential of transport corporations and increase in the number of employees in the transport/tourism sectors. For example, in Timișoara 10284 jobs were created by 2016 following the development of Traian Vuia International Airport (The World Bank, 2016). In addition, the airport has an intake of approximately 7.05% according to the contribution to the GDP of the region deriving from direct, indirect and induced impact; and a contribution to the total local budget of 98,603,419.23 lei.
In this regard, Airport Council International provides a platform that determines the impact of the activity of an airport on the economic environment, calculating the number of jobs created as direct, indirect, induced and catalytic impact, as a set of macro-influences of the airport's activity (see table no. 5).

Table no. 5 Impact of the activity of Traian Vuia International Airport on the economic environment (2016)

Input data	No. of passengers	Freight (tones)	Passengers in transit	Low-cost passengers
	900000	2500	0%	59%
Output data	Direct impact	Indirect impact	Induced impact	Catalytic impact
	1054 jobs	976 jobs	851 jobs	7403 jobs

Source: ACI Europe, 2016. Economic impact calculator

As it was previously shown, the arrival of low-cost carriers on small airports presumes a change in the air transport dynamics, growing rates of passengers, increases in flight frequencies and route development. But more important, the development of regional airports as a result of LCCs deployment and implication represents a catalyst for economic growth, providing rapid access on the labour market. Therefore, airports and airlines should work together to bring added value regarding joint development operations (Bobon, 2017).

Conclusions

The purpose of this analysis was to show the position and future prospects of LCs and LCCs. The qualitative theoretical framework of airline performance research has been complemented by economic, social and strategically quantitative analyzes.
After emphasizing on a description of the airlines' business models and a comparison of their main features, the impact of airline strategies on consumer behavior, on the development of secondary or regional airports, tourism and new jobs was researched.
Thus, the authors performed a multi-criteria analysis and assessed the range of strategic options available to airlines in order to address the challenges for the future development of air transport.
The authors' research prospects regard airline performance analysis, studies on LCCs practices which are common on certain regions and analyzes on economic, legal, political and socio-cultural aspects that influence airlines' development.

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MEASURING AND REPORTING NON-FINANCIAL PERFORMANCE OF SOCIALLY RESPONSIBLE COMPANIES

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Abstract

We have to admit that the resources that the environment gives us are limited and the time to recover them to the stage of use is very long. Strategic managers are constantly confronted with the decision to allocate limited corporate resources to an increasingly pressing environment. Sustainable development is a concept based on three pillars: economic development, social development and environmental protection. To this macroeconomic concept we can associate various microeconomic concepts, among which we mention global performance, sustainability and social responsibility. Based on these considerations, we have proposed that in this study we deal with a series of issues regarding environmental performance and social performance as attributes related to non-financial performance and their role in maintaining a profitable long-term business. Another important aspect is the measurement and reporting of non-financial performance through attempts to standardize the content and the reporting process in order to provide transparent and comparable information. From our point of view, Romanian societies must gradually develop their own culture of social responsibility and understand that the success of a company is also measured by engaging in actions to protect the environment and society, and this voluntary reporting of social responsibility would should be seen as a key element in achieving long-term success but also as a tool for informing and involving stakeholders.

Keywords

corporate sociaal responsability (CSR,), sustainable development, non-financial performance, social peformance, environmental performance.

JEL Classification

M14, M48, O13, Q01.

Introduction

Protecting the environment must become a priority issue for companies that carry out activities that they have to suffer in terms of both quality and quantity. The global economy requires organizations to define the role more clearly and to reconsider their economic, social and environmental goals, "to transform business models more quickly, more frequently and more broadly than in the past so as to demonstrate through their clearly expressed and transparent strategies the ability to develop sustainable business (Doz & Kosonen, 2010). Business Sustainability Goals have become more and more important to companies, but also to business stakeholders. Such a business attitude, aimed at enhancing fair relations with stakeholders, can meet the following requirements: "respond to the

accusations of international bodies that associate globalization with a cruel, exploitative and unregulated phenomenon, an indifferent attitude of entrepreneurs to the losses caused by responsibility social society and socio-competitive skepticism" (Cismaş & Stan, 2010).
Organizational strategies must be formulated to meet stakeholder requirements. The formulation and implementation of strategies must be of a proactive rather than reactive nature, as an emblem of the organization's consciousness and management. Each organization should pursue the formulation of those long-term winning strategies, "giving equal importance to human resources, the balance of society in which it operates, to the environment" and being aware of the importance of building sustainable business (Lepineux et al., 2010). For a company to prove that it is socially responsible, it must understand the principles of corporate responsibility promoted internationally and, in addition, must periodically report "socially responsible" actions to demonstrate the integration of these principles into its activities.
The Corporate Social Responsibility strategic approach aims to ensure the corporate-company balance, which can be ensured by optimizing economic, social and environmental goals or economic, legal, ethical and philanthropic objectives. Beyond the social dimension, corporate responsibility can be seen as a business strategy, as long as profit can be considered by companies responsible as a reward for community welfare. (Mihalciuc & Apetri, 2017). Thus, Corporate Social Responsibility (CSR) has received particular attention since the 1950s, and the development of the CSR concept has become a supportive point in both the business and the academic environment.

Literature review

The specialized literature attempts in many ways to highlight the importance of corporate social responsibility in business strategy. Some authors even believe that "Corporate Social Responsibility initiatives must be integrated and internalized by the organization so that they are placed at the heart of the organization", to gain benefits such as: improving corporate reputation, gaining customer confidence, increasing employee motivation or quota market (Dey & Sircar, 2012). Businesses need to be aware that the inclusion of social responsibility goals in the organization's strategy should not be driven only by the desire to build a positive image, to increase operational efficiency or to gain competitive advantage but as a condition for business building (Socoliuc et al., 2018). The most elaborate and the most the widely accepted model of corporate social responsibility is the so-called "Quadripartite Model of Corporate Social Responsibility," originally proposed by Carroll (1979) and then perfected by Carroll and Buchholtz (2000). According to them, corporate social responsibility includes what society expects from an economic, legal, ethical and philanthropic organization at a certain point in time". It follows that CSR is a multi-layered concept in which four interrelated pyramid-shaped aspects are distinguished, so that true social responsibility involves reuniting all four levels in the behavior of the corporation.
The concept of Corporate Social Responsibility (CSR) emerged in the US in the 1980s, while its use in Europe is more recent. In the American context, the paternity of the social responsibility concept is attributed to Howard Bowen in 1953, who published the paper "Social Responsibilities of the Businessman"(Bowen, 1953). It defines the concept by a series of obligations that lead to policies, decisions and lines of conduct that are compatible with the objectives and values of society (Avasilcăi, 2001).
Despite the variety of CSR definitions in management and marketing, the generally accepted definition seems to be Carroll's (1979, 1991) definition that is normative and is often used by management and marketing specialists. The reason for accepting this can be that the concept of CSR is really very broad and problematic, especially in terms of building a concrete list of issues that make up CSR. Also, researchers have only addressed certain

aspects of CSR activities such as corporate giving that are not the full spectrum of social responsibility, and provide only a limited view of CSR expectations (Bradu, 2011).
In the literature, there are some empirical studies that highlight some differences in how the corporate social responsibility is perceived and appreciated in different contexts (Gănescu, 2013), as can be seen from Table no.1.

Table no. 1 Significance of social responsibility dimensions in different contexts

Dimensions of social responsibility	American context	European context	African context
Economic Responsibility	Profitability, liabilities for shareholders, corporate policies on good corporate governance, remuneration, consumer protection	Legal framework, coding corporate constitution, observance of the number of weekly working hours, granting minimum wages, developing legislation for the development and testing of pharmaceuticals	Economic contribution, the economic dependence of the government on a single company
Legal Responsibility	Low level of legal business securities	High level of business legislation	Low priority compared with developed countries, low pressure on good behavior, ensuring good relations with government officials
Ethical Responsibility	corporate policies on local communities	high tax rates in relation to the high level of state social assistance provided by public and local services	The smallest influence on the CSR agenda, the gap between the high ethics of multinational companies and widespread corruption, the adoption of codes of ethics and governance
Philanthropic Responsibility	corporate initiatives of funding art, culture, or fundraising	the high level of taxes obliges governments to be the main providers of culture, education	The high level of taxes obliges governments to be the main providers of culture, education.

Source: adapted after Visser, W., 2006, Revisiting Carroll's CSR Pyramid: An African Perspective, in Corporate Citizenship in Developing Countries: new partnership perspectives, eds. E.R. Pedersen & M. Huniche, Copenhagen: Copenhagen Business School Press.

Applying the concept of sustainable development at the company level takes into consideration the corporate responsibility - resulting from the need for companies to adapt to survive in a company a context in which globalization and civic activism are increasingly changing radically. This type of approach has been taken up at the level of large companies around the globe who are committed to sustainable or sustainable development and adopt reporting principles that are based on the concept of the triple balance sheet / objective (Belaşcu, 2003).

The evolution of the concept of social responsibility leads to the emergence of a new notion: corporate social responsiveness. The notion is defined by the ability of a firm to respond to social pressures. It means applying a relationship management that correlates the firm with the various stakeholders, expressing the leaders' attention to the demands of society, thus responding to the flow of social responsibility (Ștahovschi & Mircea-Dafinescu, 2013).

Assessing non-financial performance as part of global performance

Before the performance calculation was achieved strictly from a financial point of view and it is usually calculated over a short period of time, but in the current period there have been changes in the economic thinking and therefore also in relation to the performance evaluation. Thus, at the moment, the management of the company directs all its forces to attract investors, which is why it seeks to put the economic entity in good light in terms of long-term performance. When it comes to performance, not only financial performance is taken into account, but global, where non-financial information about the social side and environmental protection plays an important role.

For the economic entity, global performance implies access to the resources needed to exploit, redistribute them to obtain cash flows to eliminate potential risks, and to track the achievement of objectives. Global performance is neither productivity nor profitability, it has a much broader horizon, it refers to all the economic and non-financial aspects of the activity of an economic entity. Non-financial information is of major importance for the decision-making process and, at the same time, is a complement to the financial statements, being particularly useful in reducing the degree of uncertainty specific to the investment process (Carp, 2015). Some studies confirm that economic entities publish social and environmental information only to be within the limits of legality in the field in which they operate. It has also been found that less performing entities publish performance-related information (Aldaz, et al., 2015). Non-financial performance is increasingly important because the modern consumer simply does not want to pay less on a banal product but claims a product tailored to his needs, and other aspects such as quality, innovation, environmental impact. (Albu & Albu, 2005). At the same time, the capitalist consumer begins to focus his attention "not only on the quality of the products purchased, but also on the behavior of the producing company." (Crăciun, 2003)

Social performance reflects the level of achievement of tasks by an employee, their contribution to the objectives set by decision-makers. It has become a criterion appreciated by investors, because the application of irresponsible policies in this field, are irreproachable to the emergence of economic and financial risk (Diaconu, 2010). In addition, social performance is useful for assessing management activity and results, so it needs to be introduced in all types of organizations, starting with public or private entities and ending with nonprofits. (Iamandi & Filip, 2008) The individual social performance and the achievement of the organization's objectives are achieved with the help of human resources, and the motivating factors are the motivation, the possibility to participate in decision-making, the attitudes, the behavior and their involvement and satisfaction with the human resource (Tănase & Ștefănescu, 2015). In a study conducted by Huselid (1995), it mentions the policies adopted by the human resource entity that influence its behavior and as a domino effect exerts influence on the performance of the whole entity. The same author mentions that investing in this direction can considerably reduce staff replacement rates and increase productivity gains. Marin (2009) which emphasizes the skills and effort of the employees, is indispensable for achieving the objectives of the entity, so this author explains the link between the committed human resource and the performance of the entity.

When discussing the assessment of social performance, it is envisaged to quantify the results obtained by the employees, to establish the objectives for the next period, to draw up a plan to modify the results that will be achieved in the desired sense. Determining social

performance is the basis for decisions that are directly related to human resource training, recruitment and selection, and rewarding. Companies that differ from others by a higher degree of social performance can hope to achieve sustainable financial performance.
This stimulates organizations to improve their social performance management, pays particular attention to transparency and adequate monitoring of social risks, allows comparability with other organizations, enables full stakeholder information and attracts investment (Ștahovschi & Mircea-Dafinescu, 2013)
Environmental performance is the second component of non-financial reporting, but of particular importance, as well as social reporting. At present, there is an increasing emphasis on this aspect of a company's business, but for a considerable time the environment has been seen as a generator of stranded costs. Thus, management has always attempted to diminish these costs, leaving only those mandatory under the legal regulations in this area.
We are witnessing an increasing concern for mankind over the increasingly complex environmental issues. The environment is an essential integral part of any development process and encompasses the links and interdependencies between people and natural resources. As a result, the changes in the environment are not only due to natural events, but also to the practical manifestation of development models, practices and lifestyles. Reciprocally, any change in the physical environment has important socio-economic consequences that influence the quality of life. (Neagu & Neagu, 2015).
The environmental and general performance of a company is interdependent, but in order to benefit from environmental protection, a number of steps have to be pursued: the assessment of the company's state of affairs regarding the existence and quantification of the effectiveness of management tools environmental; setting a set of indicators specific to the company's business; the regular determination of environmental performance and the communication of the results obtained.

Romanian companies applying social responsibility
Lately, there has been a mobilization of companies, non-governmental organizations, institutions and citizens to become actively and responsibly involved in the sustainable development of the community. Companies are looking for the projects they participate to grow indirectly and their performance, as shown in the examples in the table no. 2:

Table no. 2 Probable benefits pursued by companies applying social responsibility

Company	The social domain in which they are involved	Aimed pursuit (personal opinion of the authors)
Kaufland	Culture, sports and healthy life	Increased incomes (The company was launched from a small company, keeping the fruit and vegetables district at the entrance to its own stores, always pursuing the intensive sale of products from this district. People focusing on health and sports generally seeks to prepare their own food using unprocessed products).
BCR	Financial education	Reduced operating costs (correct management of the budget will attract fewer non-performing loans in the future).
GSK	Health	Increased incomes (health care buyers buy more prevention products, some of which will be willing to buy more oral care products).
Samsung	TomorrowME and Trends of Tomorrow	Reduced costs for recruiting and training future employees (determining a particular vocational profile, recommending job matching, and

		providing suggestions about the steps or studies that they must follow to reach their career goal).
Orange Romania	Education in IT programming	Reducing recruitment costs (finding talented young people in programming), reducing operating costs (finding new ways to do) and increasing revenue (discovery of new products, services and needs).
Groupama Inssurance	Proximity, responsibility, solidarity	Reduced costs for damages compensations (responsible and jointly responsible persons contribute to the prevention of incidents that trigger the execution of insurance policies).
Federal-Mogul Motorparts	Partnerships with universities and high schools in Ploiesti and Bucharest	Reducing staff training costs (internships).
Olympus Romania	Special packaging, engraved in the Braille alphabet	Income growth (increased sales among the blind).
Maguay Romania	Environmental certification in IT	Reducing expenses with energy consumption.
Arcelor Mittal Galati	Health, education, development and improvement of employees	Reduction in staff training expenditure (awarding Olympic students, contributing to professional development). Decrease in labor-related costs. (0 deadly accidents in recent years in a heavy industry). Decrease in recruitment costs (few resignations).
Continental Automotive	Dislocation safety and environmental protection	Decrease in environmental expenditure (use of recycling).Increased revenue (sales due to increased wear and braking safety).
Farmec Romania	Constant investment in product quality	Increased income (generated by sales of products made from fruits, native herbs, clay, the ingredients used are not genetically modified).

Source: adapted after http://www.csrmedia.ro/brand/ and https://csrleaders.ro/, [accessed on 20.03.2019]

As can be seen, companies are looking to achieve performance using social responsibility, the result of their actions will not be found strictly in their own results. There is a possibility that part of the benefits may be found in the future results of other companies, including competitors.

Conclusions

The interest in studying sustainable development has arisen because in the context of the actual pattern of economic development, which generates a major environmental impact, a large percentage of the population in this planet is affected. The integration of the Corporate Social Responsibility principle into the business development strategy becomes an important feature of modern companies. Organizations that possess the main financial and human resources have a significant impact on solving the social problems of society and on sustainable development. Corporate Social Responsibility strategies represent opportunities for business development, with a strong emphasis on supporting sustainable development

and ensuring the performance of global companies. Through Corporate Social Responsibility, every company contributes to the development of modern society on the basis of sustainability. Corporate Social Responsibility is a commitment by which every company takes on the responsibility for standardized care of the environment, employees and community.

Environmental performance and social performance is what demonstrates to corporations and their shareholders that profits and share prices will increase if they adopt healthy production methods from the point of view of the environment.

Practically, it starts from some difficult to quantify elements, and together with appropriate social responsibility on a case-by-case basis, we have to find the optimal variant that ensures the sustainability of global performance.

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ASESSMENT OF THE IMPACT OF NEW DISTRIBUTION CAPABILITY ON GDS'S AND TRAVEL AGENCIES

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Abstract
The evolution of the distribution capability in aviation has reached a point where the International Air Transport Association decided to implement a new standard that promises greater benefits for all actors. In the light of the positive aspects of this program, described by its initiators, important facilities for the entities involved/that will benefit from the IATA standard are outlined, but it seems that a large number of the parties directly or indirectly involved, are not fully aware of the conditions, implications or even what this new approach represents. The current research aims to clarify aspects about the new distribution capability that were misunderstood, outline the program's possible drawbacks and assess its impact on the traditional GDSs and the travel agencies, with a focus on Romanian market. In this regard, studies have been conducted on different actors: travel agencies, airlines, handling agents, airports, etc. and on people working in the aeronautical industry in order to discover the behavior of aviation employees in purchasing tickets/ancillary services and to identify aspects related to the awareness and possible implications of the new distribution capability.

Keywords
IATA New Distribution Capability, Global Distribution System, travel agencies, ancillary services, standard.

JEL Classification
L93, M11, M30, O20, O30, Z32, Z38

Introduction

The emergence of a new distribution capability in the aerospace industry has launched a series of controversies among the traditional global distribution systems and travel agencies. The standard developed by IATA was meant to provide an improved distribution system for airlines, including more services; but the concerns that this program will replace the traditional distribution systems turned into a threat for a number of actors in aviation.
The evolution of the distribution capability has gone through several changes, following the scheme: CRS (computer reservation system) vs. GDS (global distribution system) vs. NDC (new distribution capability). Surely, the complex processes of booking a flight ticket and other services prior to the existence of the GDSs have been simplified; and the NDC implementation promises even greater benefits based on uniformity of procedures.
The modern development of distribution capabilities implies new commercial formulas, considering important criteria for product commercialization (table no. 1); and by promoting

various services for the benefit of the passenger, it fulfils the distribution system's significant social function.

Table no. 1 Criteria for product commercialization

Criteria	Product complexity	Product standardization	Number of customers	Information importance	Price
Importance	Direct	Indirect	Indirect	Direct	Direct

Source: the authors work

Since the possible participants in development of the new program have specific roles and interests, the question that arises is whether only the global distribution systems will be affected, or even the travel agencies, as primary clients of the GDSs.
The research will be sustained by various studies: assessment of the passengers' options to buy airline tickets and additional services and on the industry's knowledge about NDC and it's implications. The surveys have been conducted with the help of professionals from the aviation industry, either airlines, ticketing services, airports, departure control system employees, travel agencies, check-in agents, ground handling services, general services administration, APG BSP coordination services, ABCS Consolidators, etc., among which can be listed Tarom, Blue Air, Wizz Air Hungary, Regional Air Suport, Romanian Airport Services, NCBA (the National Company Bucharest Airports: the international Henri Coandă and Băneasa Airports), RCAA (Romanian Civil Aeronautical Authority), Paravion Tour SRL Bucuresti, eSky Search Travel SRL, Pavel Travel SRL, etc.

Implications of implementing the NDC program on the Romanian market
An important aspect of NDC is that all the shopping demands are sent to the airline in real-time in order to be evaluated, which outlines the concept of dynamic pricing (Westermann, 2013). Thus, the shopping experience of purchasing a flight ticket and other services is meant to be accomplished without the intervention of an intermediate link.
IATA provides a direct booking platform for multi-channel retail, which shows airline fares and ancillary options in a dynamic manner (Hoyles et al., 2017). The new-built capability facilitates a quicker standardized shopping experience, by selling airline services to customers through agency channels (Skift Report, 2016).
Starting from 2012, when the NDC standard was launched, information provided to GDSs and travel agencies was limited especially in terms of prices/costs, and even 6 years after the start of the program, a great segment of the mentioned parties is not aware of the conditions, implications or even what this new approach represents. Surely, the NDC program is still under development, so it hasn't reach a final agreement on pricing policies or other conditions.
The next study regarding the impact of the new distribution capability on the Romanian market was accomplished within six months by means of questionnaires sent to a target group consisting of professionals from the aviation industry with direct connections in sales, marketing, promotion or airline representatives and support.
The ensuing two questionnaires helped the authors identify more easily the issues related to the awareness and the possible implications of the IATA NDC program on travel agencies and GDSs operating in Romania. The subjects for this study were asked to provide answers for two forms consisting of a series of questions regarding the knowledge about the new distribution capability and the passengers' behavior for purchasing airline tickets and ancillary services. Prior to completing the questionnaire, those surveyed had to communicate their name, age, gender, city and county of residence, the name and core

activity of the organization they are working for, but also their agreement to use the data provided for statistical analysis.
As ways of administering the questionnaire chosen by the authors were: handing directly the paper form to the participants on both opinion polls and when this manner couldn't be chosen, the questionnaires were send via email. Only in the case of 19 companies, the completion of questionnaires was achieved after being contacted by telephone.
The first research tool represents the product of sending 200 forms to a focus group consisting of exponents of different areas in aviation (mentioned previously). Only 61.5% of the people targeted have chosen to respond to the authors' invitation to complete the form. Three out of the 77 who did not respond (i.e. 3.89% or 1.5% of the targeted group) mentioned not having data about the subject of concern, therefore declined the request; the rest refused to reply.
The limitations of this study mirror the restricted number of entities in Romania dealing directly with airline product sales, distribution platforms or travel agencies.
The qualitative analysis evaluates 4 issues of interest, two questions narrowed at 2, respectively 7 answer options (dichotomous and ordinal-polytomous interrogations) and two open questions (table no. 2). The questionnaire was completed by a group consisting of 123 subjects-representatives of aviation organizations.

Table no. 2 Questionnaire on New Distribution capability knowledge

No.	Question						
1.	Do you have knowledge about the IATA NDC standard?						
	Yes			No			
2.	When did you first learn about this standard?						
	2012	2013	2014	2015	2016	2017	2018
3.	How did you find out about the IATA NDC standard?						
4.	Do you think this standard will influence the activity of the company you are working for? How?						

Source: the authors work

Although the program was launched in 2012, only 76.42% of the respondents (n=94) are aware of the IATA NDC standard, the rest of 23.57% (n=29) responded negative to the first (dichotomous) question. Of the 94 respondents who have knowledge of the NDC, 17.02% (n=16) first learned about the standard in 2012, 12.76% (n=12) in 2013, 2015 or 2016 and 11.70% (n=11) in 2014. In the last two years, the number has increased, 14.89% (n=14) in 2017 and 18.08% (n=17) in 2018, this being directly proportional to the amount of information released in the industry in Romania and that can be found on specialized websites (i.e. iata.org, ndc.developer.iata.org, www.amadeus.com, www.travelmarketreport.com, tnooz.com, https://buyingbusinesstravel.com, etc.)
An interesting aspect considers the approximately equal number of subjects who found out about IATA's standard in 2012 and 2018. Between these years, it seems that there was a lack of interest in the program, but the year it was initiated, the International Air Transport Association launched conferences and bulletins to exhibit NDC's directions of development.
For the following open queries, the subjects were asked to formulate the answers based on their experience and information from work. Regarding the way interviewees found out about the standard in question, the answers indicated notifications via APG Network (30.85%, n=29), ATPCO conferences and bulletins or IATA's information messages (43.61%, n=41), operating systems (6.38%), internet (1.06%) or by participating to a specialized course or to specialized conferences with foreign partners (13.82%). Very few

representatives of the companies surveyed responded (4.25%) they discovered the characteristics of this norm from colleagues in other services (i.e. distribution).
It seems that airlines are less informed than travel/ticketing agencies or other parties questioned, such as distribution platforms. Although they mainly found out about this program from the beginning (i.e. 2012), they do not have a clear image and don't master the directions in which it will develop.
In the latter question, 97.87% (n=92) of the people surveyed during this study considered that the new standard will influence the activity of the company they are working for in a good manner. They think the program will ease the interaction between the company and its partners will optimize reservations and will create a better communication between airlines and ticketing or travel agencies, the latter being able to diversify to some extent the offer and better adapt to the demands of the customers.
Only 2.12% noted they cannot provide an answer, since are not fully informed about the case, but none of the companies reckoned that the implementation of the standard will have a negative influence (agencies have been considered particularly).
Subjects working at implementation and maintenance of departure control system (DCS) (20.21%) consider that NDC will amend product sales, will entail transparency and will lower the costs. Some (21.27%) of the respondents also noted that they do not think GDSs will disappear, but the tendency is to create their own ecosystem. 37.23% of those who agreed to respond to the questions above, admitted that at their company level, the implementation of this system has not yet been discussed, so actions in this regard do not exist at the time. This was mainly the case of airlines. However, both airlines, travel agencies, airports assignees, departure control system staff, check-in agents, general sales agents/administration, noted that in their opinion, NDC will reduce distribution costs, increase sales, change product conception, imply product customization and pricing dynamic, and lastly, will modify standards and distribution channels for the final client.
Since there are no preoccupations or concrete actions at present regarding the implementation of the new capability, this category of subjects opinion is that NDC will mean reorganization (or revision) of working procedures and processes.
As resulted from the inquiry previously developed, one of the reasons airlines support the new distribution platform, is that direct advanced passenger information integration doesn't involve costs or commissions.

NDC impact on travel agencies and analysis of ancillary revenues for legacy and low-cost carriers

As the number of the ancillary services is constantly developing, dynamic packaging and pricing represents a good approach to produce airline revenues (Williams et al., 2011). The module that brings highest value to airlines is represented by air ancillary services (almost 90%), while dynamic pricing is ranked 3rd (i.e. 45%) (Sia Partners, 2019).
Increased revenue is reflected in customer loyalty and long-term value (Von Martens et al., 2011), therefore, criteria for product commercialization must consider dynamic pricing and product complexity, to meet different passenger needs. The constant concern on the quality of passenger ancillary services that meet the requirements and social needs of the beneficiaries implies major changes to information systems and adoption of new type of strategy. (Keynes, 2009) showed that low cost carrier's sources for increasing revenues (i.e. ancillary products) represented 16% of Ryanair's incomes in 2006, and for EasyJet they are reflected in 41.3 % of their earnings.
Unlike other methods used by passengers for buying a flight ticket, purchasing services from an agency is not only about looking for deals in the system. Client counseling by a travel agent about airlines travel conditions, hotels, car rental, etc. cannot be provided by other channels. Lately, agencies have booked 26% of their reservations outside a global

distribution platform, describing this method of booking ancillary products as complex (15%), limited (33%) and time consuming (29%) (Harteveldt, 2015).
In Romania, there are 2639 licensed travel agencies, from which 2065 are different entities, 854 (32,36%) of them have their headquarters in Bucharest (see table no. 3).

Table no. 3 Criteria analyzed for Romanian licensed travel agencies (2017)

Criteria	Evaluation
Total agencies	2639
Number of different agencies	2065 (78.24%)
Number of agencies in Bucharest	854 (23.36%)
1st Travel agency (with most units)	Touring EUROPABUS
Number of travel agency with most units	80 (3.03%)
2nd Travel agency (with most units)	Cristian-Tour
No. of units for the 2nd travel agency (with most units)	34 (1.28%)

Source: based on data from Ministry of Tourism, 2018. http://turism.gov.ro/

Travel agencies concerns are based on a series of changes that they have experienced, going from modifications in fixed commissions which were usually 10%, to lower values and even elimination of commissions. For example, Romania's national airline Tarom commission for agencies is 1%, because the national legislation assumes that since a contract between two parties implies a material benefit, one of the contracting parties must pay a commission (in this case, the lowest percent of 1% has been applied). Thus, travel agencies adaptability presumed cross-selling products and services.
Ancillaries have helped airlines raise their revenues, this sales were evaluated $42.6 Bn in 2013, with an increase of about 20% over the previous year (Balimane, 2014), and this trend is being kept. Surely, low-cost carriers (LCCs) are in top in terms of ancillary products sold, Wizz Air and Ryanair occupying 3rd and 5th places with 36.4%, respectively 24% of total revenues (Sorensen & Lucas, 2016), but for legacy airlines, U.S. airlines is the first one generating most ancillary revenues (i.e. $6,199,000,000) (Johanson, 2013).
A research conducted in 2016 on passenger booking preferences reveled that in the case of Eurowings airline, 45% of the consumers choose to pay for more than basic services (Sorensen, 2016). Smart fares have been chosen in 40% of the cases, which include snack and drink, a bigger luggage and preferred seating; and only in 5% of the bookings, passengers elected more ancillary services provided by Best fare choice.
For this section, the authors collected the opinions of 285 "educated" passengers (working or having studies in aviation) about how they choose to buy airline tickets and other services. The judgment of such passengers is relevant, more so as they have solid knowledge of the range of methods by which aviation services can be purchased. Being aware of the weaknesses or benefits provided by each distribution channel and knowing the conditions on which ticket pricing varies, makes the participants of the study valuable for the author's research.
The form mainly consists of open questions and the authors questioned individuals, not companies. Therefore it can be noted that the 285 subjects were divided between 61.75% men (n=176) and 38.24% women (n=109).
Those surveyed carry out their professional activity in Romania, mainly working for airlines or on airports in different areas, for instance 32.29% in Craiova, Constanța, Bacău, Braşov, Sibiu, Târgu Mureș, Oradea, Satu Mare, Iași and 67.71% of the participants work in Bucharest. The subjects were aged between 21 and 48, with an average age of 34.5. For the

285 respondents, the age analysis reveals the subsequent results: 19 (6.66 %) had ages between 21 to 25, 47 (16.49 %) between 26-30, 96 (33.68%) between 31-35, 75 (26.31 %) between 36-40, 39 (13.68 %) of age 41-45 and only 9 (3.15%) of the subjects were aged in the 46-48 range. Although the opinions of youngsters in the 21-25 range are considered significant for the research, not many of them are employed in aviation at this age, since they usually expect to have a master degree prior to deciding on their career.
All participants elected for this study had high education level (EQF level 5, 6, 7 or 8) and were asked to provide answers to 9 specific questions regarding the type of elections they make when purchasing aeronautical services, based on specialty knowledge with respect to distribution channels and new capabilities in distribution.
The questionnaire is divided into two parts, the first 7 questions are related to the methods/options for buying various services and also, regarding the passengers judgments in conjunction with opting for a distribution channel in the detriment of another. The hindermost inquiries are directed towards the knowledge of several distribution concepts and the new NDC standard (table no. 4).

Table no. 4 Criteria analyzed for Romanian licensed travel agencies (2017)

No.	Question
1.	Have you ever traveled by airplane?
2.	What are the modalities through which you can buy an airplane ticket?
3.	What are the ways you have chosen to buy airplane tickets?
4.	Have you purchased other services besides buying a ticket (e.g. rent-a-car, hotel, etc.)?
5.	Have you ever purchased airline tickets from travel agencies?
6.	Why do you choose a way to purchase a ticket in the detriment of another?
7.	Do you think the price of a flight ticket varies depending on the way/channel through which it is purchased? In what way?
8.	Do you know what a Global Distribution System (GDS) represents?
9.	Do you have knowledge about the IATA NDC standard?

Source: the authors work

The first dichotomous query is decisive for the further completion of the form. Only 3 (1.05%) persons responded negative, it is the case of 2 men (aged 21 and 22) and one woman (aged 21). Next, among the modalities through which passengers can buy airplane tickets, subjects mentioned 2, 3 or 4 choices: airline's web page, the internet (aggregator sites), travel agencies or airport ticketing desks. 31 (10.99%) mentioned 2 choices, 204 (72.34%) mentioned 3, and 47 (16.66%) mentioned 4 ways for buying airline services. However, the preponderant preferences indicated different sites on internet – 69.14% (n=195) or the airline's web page 17.37% (n=49). The last places were occupied by travel agencies or airport ticketing desks (32 and 6 choices, i.e. 11.34%, respectively 2.12%).
Although the respondents outlined the above mentioned channels for purchasing tickets and ancillaries, when asked what were the ways they usually choose, they mainly indicated the Internet (either aggregators or airlines sites). Solely a percentage of 25.17 have turned to travel agency services, but in a great measure, for business purposes (see questions 3 and 5). 40.78 % (115 people) purchased other services besides buying a ticket; and their choices (in the following order) were: hotel (59.13%, n=68), rent-a-car (35.65%, n=41) or transfer airport-hotel-airport and luggage insurance (6 subjects-5.21%).
The answers to the questions number 6 and 7 provide insights on the grounds for selecting a manner to purchase a ticket in the detriment of another. Passengers tend to choose the channel which seems quicker and more convenient. In this respect, they mentioned selecting different sites because these platforms don't involve intermediaries.

One of the characteristic the respondents want to find in a distribution channel is the rapidity to perform different operations. In their opinion, choosing between different travel packages and completing the transaction, seem more comfortable to perform from their desk. Also, financial considerations were mentioned among the first issues taken into account. Almost all of the subjects (96.80%) think the price of a flight ticket varies depending on the way/channel through which it is purchased, in the way that it is cheaper if it's purchased online, earlier than the date of the trip.

Not only that on-line platforms show better prices, but participants think this method is also safer (meaning that the information is provided directly by the airline and there are no confusions or hidden costs). While agencies add a commission for the operations performed, so the ticket would be more expensive, by accessing the internet themselves, passengers can research the market much better and can find offers from which they can choose the best.

Through the last two questions, the initiators of this research intended to check the awareness on global distribution systems and the new distribution capability among aviation professionals. In this matter, 93.61% (n=264) noted they know what a Global Distribution System (GDS) represents, the rest of 18 subjects were for the most part in the 21-15 age range. However, the case was different regarding the new distribution capability awareness, since 159 (i.e. 56.38%) participants to the study know about IATA's standard, while 43.61% (n=123) never heard about NDC.

The author's research has shown that the vast majority of educated passengers between the age of 21 and 48 are not willing to buy travel tickets from agencies, as they consider it more expensive, since agencies apply various commissions. More on, other distribution channels, can give a clear idea of prices and a direct presentation of ancillary services from which the passengers can choose themselves.

Companies usually resort to agencies for purchasing travel services for their employees, in order to minimize time and costs (by not hiring staff dedicated for travel activities). This practice has proven to be somehow abusive in the direct relationship between agencies and clients; costs have raise uncontrollably for the companies without complying with a travel policy, given the agencies commercial interest that is in the detriment of companies business interests (the customer does not get the lowest prices as he wants). Also, research has shown that agencies' flight booking (75-80%) represent a choice between the first two airlines from the displayed flights (Seaton & Bennet, 2004).

Unless accessing NDC connection via GDS, other parties willing to access the reservation system through IATA NDC will have to complete a certification process (British Airways, 2017). Although it requires booking API and trial markets, the results of NDC implementation are reflected in an upsell rate of 15%-25% (Williams, 2016). How long and what it will take for agencies to adapt to this new standard, will have to be clarified soon. But organizations will have to be more manageable in order to improve specific features that conduct performance in the entire system, rather than carrying out independent actions which amend departmental parameters (Zylstra, 2006), in order to optimize the distribution system in aviation and adapt to changes in the industry.

Conclusions

The outgrowth of the paper highlights various aspects regarding the awareness, perception and the complexity of the new distribution capability related issues and its importance among the Romanian aviation professionals and the aeronautical market.

In the context of implementing a new distribution model, the standard must establish the responsibilities of the participants in the distribution channel and must aim at harmonizing the objectives and regulate the relationships between different members. Also, the International Air Transport Association must adjust its program to the needs and critics in the aeronautics sector, taking into account that the managerial concept of distribution must

focus on orientation towards the consumer requirements; therefore it must adapt its strategy to the passenger needs.
On the other hand, assuming the induced risks is not characteristic only to new capability of the distribution program, but also for the involved parties who will need to transform the current threats into business opportunities.
Overcoming the impact on GDSs, travel agencies or other parties, the new program must focus on the implications for the final link in the distribution chain, since considering the buyers needs and preferences represents the fundamental component of the commercialization process.

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TRANSFORMING BUCHAREST INTO A SMART CITY

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Abstract

The increase of urban population raises high challenges to city management policies because of agglomeration, pollution, heritage endangerment and overall welfare of inhabitants. In the same time, urban population is more educated and more prone to using and responding to new technologies; hence Smart solutions may be prove to be efficient means of addressing negative issues of urban living. The paper presents the challenges of adopting Smart technologies, with special focus on Bucharest – one of the most crowded and polluted capitals in Europe. A thorough analysis of Smart projects developed in this capital reveals that some steps in the right direction for a Smart city have been taken. Recommendations for future Smart city development are made after a thorough analyse of the already implemented Smart solutions and their overall effect on the population.

Keywords

Smart City, Smart Technologies, Internet of Things, urban policies, environment, citizens welfare

JEL Classification

R10, O18

Introduction

The rapid growth of urban population forces authorities to find efficient solutions for answering the needs of more and more people, within the boundaries of a limited infrastructure. The crowding within cities threatens all sustainability pillars; orienting local policies towards sustainability and not confusing and disrupting the habits of local population is the highest challenge maybe. In the last decade it can be noticed a growing interest of researchers, business environment and decision making cities authorities for the concept of Smart Cities. According to Anthopoulus et al. (2016), there are eight components that define a Smart City: Smart utilities (energy, water, IoT etc), services (health, education etc), government, planning, management, architecture, data and inhabitants. Other researchers see the concept of Smart City as a continuously evolving one, depending on the interests of large business corporations (Allam and Newman, 2018). Nam and Pardo (2011) consider that an intelligent city has the following essential components: *technology*, *citizens* - here referring to creativity, diversity and education, and *institutions* (government and policies). Connections must exist between all these, a truly Smart City being when investments in human and social capital, as well as ICT infrastructure lead to durable development and life quality enhancement. Other research point out the fact that four components must build a Smart City: 1) a large range of electronic and digital technologies

for creating the cybernetic urbis, knowledge based; 2) using ICT for transforming work and living; 3) integrating ICT in city infrastructure; 4) adjoining human and ICT to enhance innovation, learning and knowledge (Komninos, 2011; Albino et al., 2015).
In the same time, Batty at al. (2012) consider that the spread of ICT in city management must improve each of the areas that contribute to increasing the quality of life. Taking into consideration the various approaches of a Smart City, we can conclude that information, communication and technology must work together for enhancing the various areas related to living, leisure activities and working of city inhabitants. The way a city evolves into a Smart City depends mainly on human involvement, vision and decisional models adopted by business environment and authorities. The many successful models of the already acknowledged Smart Cities (i.e. Vienna, Hong Kong, Barcelona) differ in their approach of making citizens life a better one. Despite the crucial role of technology in Smart development, the particularities of the very city will determine the policies of Smart transformation: the climate, the culture, resources, already built infrastructure with its limitations, the main touristic attractions within city etc. Thus, in the overall Smart city development, various needs must be prioritized. For example, the preoccupation for air quality of a city surrounded by forests and with large green areas inside its boundaries may be less important than it should be for another city situated in an industrial area, lacking vegetation inside and overcrowded with traffic.

Internet of Things and Smart Cities

Internet of Things (IoT) is more and more used to minimize the waste of resources (energy, time, materials, etc) in various sectors such as transportation, air quality, energy consumption, services delivery; however, its success depends on both citizens and various other actors (authorities, academia and business environment) involvement. According to Jiong et al. (2014), if the current trend is maintained, by the year 2050, 70% of global population will live in cities and suburban areas. Billions of devices will communicate one with another generating huge amount of real time data. The analysis of these, based on population needs and choices, will lead to developing ever more intelligent cities. Thus, IoT will emerge from its nowadays incipient status and will transform the traditional network infrastructure in a totally Internet dependent future (Rathore et al., 2016).
There are six main key points to be taken into account when building smart infrastructure (The Royal Academy of Engineering, 2012):

- Smart government – vital for creating the framework for investments in smart infrastructure
- Data quality and its management about infrastructure
- Privacy – restrictions due to security and privacy of data may prevent data usage
- Investments
- Vulnerability – is inevitably linked to ICT systems, hence with any Smart system design
- Lifetime of the designed infrastructure and its components

There is already noticeable impact of IoT upon Smart city management, many mobile applications providing citizens with real time information about public transportation, shared transportation, air quality, parking available, entertainment, neighbouring shops, restaurants, attractions etc. Many of these applications rely on user involvement in order to provide real time data and feedback (i.e. Waze, Google Maps showing congestion in traffic and suggesting alternatives when driving; Moovit for public transportation with suggesting public transportation routes, while indicating the expected arrival time in various stations).

An analysis of Bucharest Smart City projects

A study regarding the status of cities in terms of their preoccupations for becoming smart, shows that, although Bucharest is the capital of Romania, it is the 4th among other Romanian cities aiming to become Smart (table no.1)

Table no 1. Romanian Smart cities ranking according to implemented/ under development projects

Position	City	Number of projects for Smart city
1	Alba Iulia	72
2	Oradea	20
3	Cluj-Napoca	18
4	Bucharest	13
5	Piatra-Neamţ	12
6	Braşov	11
7	Arad	11
8	Sibiu	11
9	Constanţa	10
10	Iaşi	8

Source: Good News, 2018

It can be noticed that there is a very large gap between Bucharest and Alba Iulia in terms of implemented projects, a future benchmarking study being useful in terms of understanding the positive aspects brought by Alba Iulia projects within the socio - economical and political context of our country. Since 2018, Bucharest authorities have officially announced the partnership with business environment in what concerns the creation of a Strategy for the development of Bucharest as Smart City. Areas, such as traffic management, parking, lighting, infrastructure, local governance, public safety, energy, telecommunications, environment and tourism are subject to smart development within this strategy (Good News, 2018).

An analysis of projects already implemented in Bucharest, show that they address important issues for the welfare of the population, such as pollution, public transportation, parking places, energy consumption.

Bucharest is one of the most polluted cities in Europe, according to Pollution Index 2018 Mid-Year, ranking 6th among the 76 cities included in the index (table no.2). Pollution Index is an estimation of the overall pollution in the city. Air pollution weights highest in the calculus of the pollution Index, followed by water pollution and then other types of pollution (NUMBEO, 2019)

Table no. 2. Evolution of pollution index in Bucharest and its ranking among the most polluted European cities

Year	Polution index	Ranking
2012	140.71	2
2013	91.85	3
2014	92.66	1
2015	76.06	11
2016	72.39	7

2017	71.28	9
2018	72.08	6
2019	73.87	7

Source: NUMBEO, 2019

Another report issued by the European Environment Agency (EEA) found that there were over 27,000 premature deaths because of air pollution in Romania in 2015 (Ro Insider, 2018).

Bucharest tackled this negative issue, by using since 2018 the first independent air quality monitoring network in Romania, which checks the air quality in Bucharest and in the nearby city of Ploieşti. A total of 15 sensors record the level of polluting substances in the air, the data being available at Airly.eu/map/en/ or in the Airly mobile app. The sensors also register the temperature, air humidity and atmospheric pressure. This integrated data is used to predict the areas and the hours with the lowest pollution, information essential for people aiming to engage into outdoor activities (walking, cycling, running etc).

Use of fossil fuel means of transportation – both for public and personal transport within city is directly linked to the quality of air. Hence, another project under development refers to providing 300 points for charging electric cars in Bucharest. Users of electric vehicles may charge these and pay charging costs through Polyfazer mobile application. In the same time, authorities have an ongoing project for electric trams and busses procurement – project also design to contributing to the environmental component of a Smart city.

Another Smart project implemented in a pilot area in Bucharest refers to smart street illumination, aiming to reduce the use of electric energy by 70%. The technology involves movement, pollution, temperature and noise sensors incorporated in the lighting poles of the streets.

Managing diligently the public transportation sector is vital for a crowded and polluted city. Another project is design to making public transportation services transparent in terms of busses and trams schedule and their real time availability, providing passengers comfort, while travelling in green means of transportation. Thus, Bucharest authorities launched in 2019 a new mobile application, available for iOS and Android, named InfoSTB (fig. no. 1).

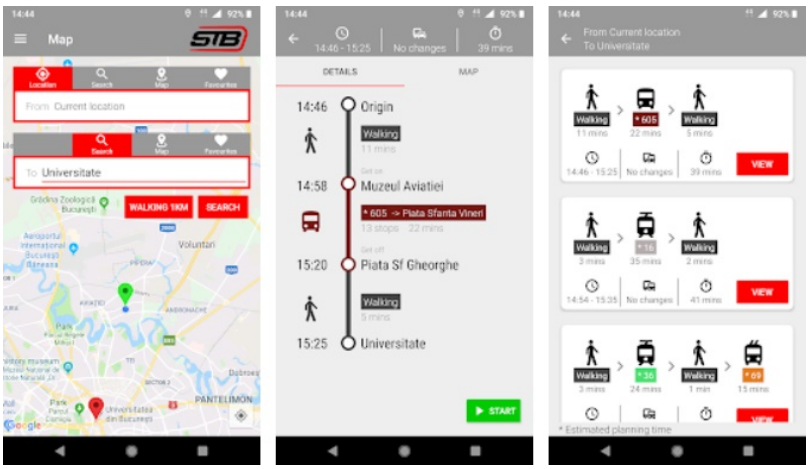

Fig. no. 1. Interface of the InfoSTB application launched by Bucharest authorities in 2019 for smart public transport

Source: Google Play, 2019. https://play.google.com/store/apps/details?id=ro.stbsa

Real time information from traffic about estimated times until arriving to a certain station and intelligent parking are important for traffic decongestion. Indeed, by having an always

updated, real time map of transportation means, Bucharest travellers could see that the public transport alternatives may be just as fast as their travelling with personal cars and, in the same time, much cheaper. Less travelling with personal cars inside Bucharest will determine in time a decrease of daytime parking places need and will diminish chaotic parking that narrow traffic lanes and produce traffic congestion. To support faster communication between citizens and authorities, another application called Traffic Alert (see fig. no. 2) gathers data from users who give real time feedback about various traffic issues (i.e. broken traffic lights, street lanes blocked by cars parked in forbidden areas etc).

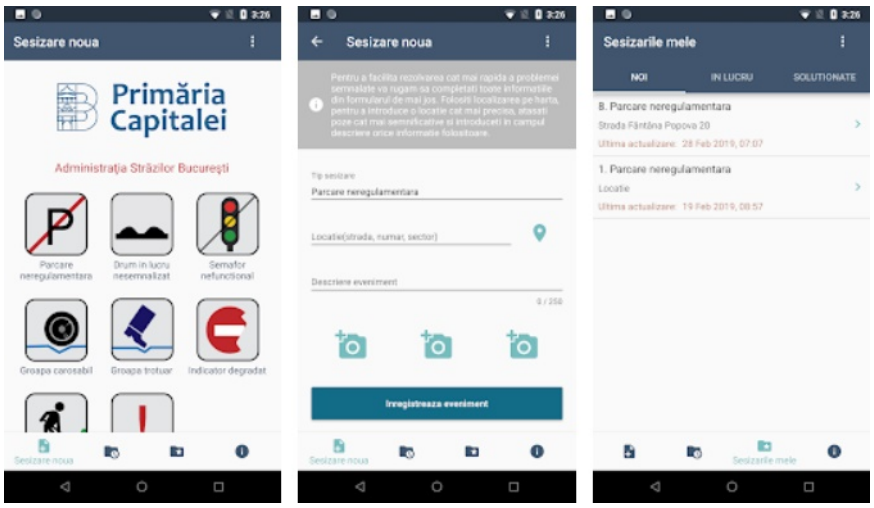

Fig. no. 2. Interface of the application launched by Bucharest authorities in 2019 for communicating with citizens

Source: Google Play, 2019. *https://play.google.com/store/apps/details?id=ro.cmtib.parcare*

Parking places are always a problem in agglomerated traffic areas of Bucharest. Both temporary parking spaces, during day time, and residential parking places during night time or in weekends are issues consuming time, fuel and annoying citizens.

In respect to residential parking places, District 4 of Bucharest provides a Smart application for online residential parking reservation. By mapping and inventorying available parking places and transferring these through Geographical Information System (GIS), citizens can see, reserve and pay parking places for their cars (Primaria Sectorului 4, 2018).

In term of parking areas to be used during day time, a new mobile application, Parking Bucharest, launched in 2019 guides drivers towards real time available parking places, provides information about parking costs and offers various alternatives of payment. As

Proposals for future Smart development of Bucharest City

Gathering citizens' ideas

It is important that people living day by day in a city should be consulted in respect to their annoyances and complaints before starting a long term Smart development strategy. Developing smart city solutions is a complex task, requiring the involvement of citizens to propose solutions for the various needs and problems they face on daily bases. One simple solution is to create an open online platform where people are encouraged to bring in discussion issues they consider important for the quality of their living and working in the city. Of course, a thorough analysis of pertinent opinions is required in order to identify the critical clusters to be translated further on in future development policies. A barrier to implementing this simple solution is finding the right motivation to encourage citizens to be

honest, open minded and creative when providing potential solutions. There is also a risk when documenting development strategies only throughout this kind of platforms, due to the fact that only the opinions of platform users are taken into consideration.

Organizing Hackathons
These events that bring together programmers, hardware specialists and other experts in areas vital to smart city development (i.e. environment, architecture, transportation, chemistry, etc) translate the voice and the needs of population into concrete projects. They are the practical start point in transforming ideas for a smarter city in ICT solutions.

Integrating various smart applications into a single platform
Using too many apps might prove to be uncorfortable for the citizens, especially for those who are not very accustomed with technology (i.e. older people). Hence, a simplified platform integrating in a single map layers of real time information about air quality, traffic conditions, public transport, parking, points of interest would lead to simplified usability.

Testing various applications for Smart city
Some people are more acustomed than others in using technology and mobile applications. The developers should keep in mind that young and skillful people in using mobile applications are citizes with the same rights as older and not so skillful ones. A smart city should be smart enough to provide confort for all its inhabitants.

Conclusions
Although there is no consensus to what exactly a Smart city is, common elements may be noticed in all scientific theories. ICT is the foundation that facilitates Smart development taking into consideration sustainability pillars, governance and prezent welfare of citizens. An analysis of Bucharest Smart projects revealed that they try to address some of the negative attributes of living in this city, like air pollution, very agglomerted traffic, lack of infrastructure etc. The various mobile applications provide useful information to citizens and are good premises for increasing the number of persons that use public transportation, instead of own transportation means. These applications, however, are subject to improvement in terms of usability and features available. A Smart city development should encompass the needs of all citizens and it should take into consideration the need for educating people in becoming Smart citizens.

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EARLY STAGE FINANCIERS IN ROMANIA

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Abstract
This paper deals with entities that are the firsts to provide financing for new companies (start-ups). We called them early stage financiers because they are not banks, but a very particular way of financing in exchange of equity.
The study analyses the two major types of early stage financiers - business angels (BA's) and venture capital funds (VC's). Their importance in the entrepreneurship ecosystem is extremely significant, as they are the only source of financing for just formed companies. We will see how they take their decisions, what criteria they apply and how they manage their portfolio.
The analysis is done having as reference the international literature, but looking in practice at Romanian ecosystem. We will provide also few examples of BA's and VC's from Romania and see how they pioneered the industry.
The authors intend to follow up on this research with a more complex study on Romanian entrepreneurship system.

Keywords:
Entrepreneurship, financing, early stage, business angels, venture capital

JEL Classification:
G23

Introduction

This article aims to analyse the early stage financiers industry. This industry is at a very incipient level in Romania, with just few players that started their activity. As such, there is no literature available at country level, so we consider this study as a first attempt on this field.
At worldwide level, the literature traced back its roots with original papers of Wetzel in the early 80's. His work was followed by several other authors, some of them being cited in this article. Nevertheless, most of authors acknowledge that is difficult to research the industry, since most of the BA's act very "quiet".

Early stage financing

It is worldwide accepted that entrepreneurial activity is the engine of all economies. Most of the things and technologies that we take today for granted are coming from the ideas of visionary entrepreneurs. Moreover, different studies (Sorheim, 2005) showed that new

ventures are the largest creator of new jobs in US and Europe, before they reach corporation status.
However, many entrepreneurs lack the finance required to develop their business, so they have to look for external sources. Given the fact that they are in the earliest stages of their business, they are cannot go to banks or other financial institutions for loans. Instead of this, they offer equity (part of the company) in exchange for cash and other benefits (as we will see later in this study).

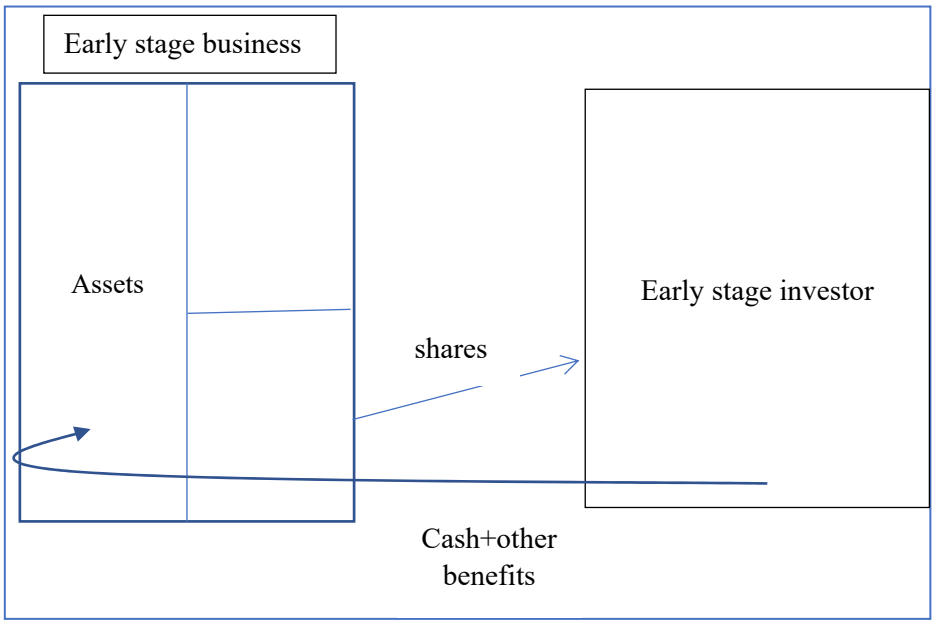

Fig. no. 1 Typical finance process
Source: adapted after SDA Bocconi School of Management, Venture Capital and Private Equity, 2018

Pending on the lifetime, value and sales/profits of a company, the financing of a company can looked as follows:

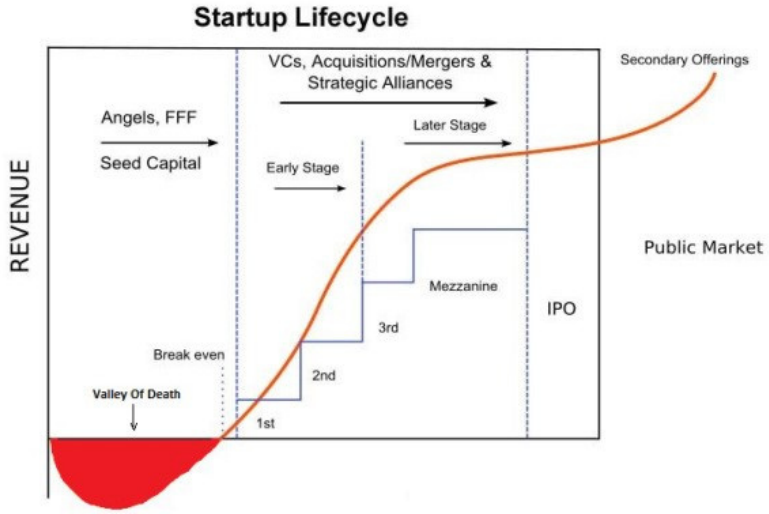

Fig. no. 2 Financing life cycle of a start-up

Source: European Business Angels Network, 2018

As said initially, our focus will on the "valley of death" so we will look into early stage financiers - the ones that are involved in the pre-seed or seed phases. First, we begin with business angels.

Business Angels

If you not consider friends & family (F&F) a business financing, BA's are, usually, the first to get involved in a start-up. As depicted in the above table, as you as an entrepreneur has a validated idea, he/she starts to look for funds to further develop the business. It is important also to understand that a BA investment paves the way for further investments. According to Mason (2008), the business angels are most significant source of financing for early stage ventures.

But what is a business angel? According to The European Trade Association for Business Angels, Seed Funds and Early Stage Market Players (further now referred as EBAN), a business angel has several characteristics. The first and most important a business angel is an individual investor (qualified as defined by some national regulations) that invests directly (or through their personal holding) their own money predominantly in seed or start-up companies with no family relationships. Secondly, business angels make their own (final) investment decisions and are financially independent, i.e. a possible total loss of their business angel investments will not significantly change the economic situation of their assets. Typically, BAs invest with a medium to long term set time-frame and are ready to provide, on top of their individual investment, follow-up strategic support to entrepreneurs from investment to exit. Last, but not the least, they respect a code of ethics including rules for confidentiality and fairness of treatment (vis-à-vis entrepreneurs and other BAs), and compliance to anti-laundering.

Mason (2008) identifies four key characteristics of business angels:

- They are investing their own money
- They are investing in unquoted companies
- They are looking for a commercial return for their investments
- They are making their own decisions
- They are hands-on investors, meaning they provide 'smart money' to start-ups.

A typical business angel is a person usually over 40 (that allowed enough time to build some wealth) and a successful cash-out entrepreneur (that already develop one/many companies that were sold). This was the case also for Romania, with typical examples like Radu Georgescu, Matei Dumitrescu and others. However, in the last period a new category emerged, that is former corporate managers who become business angels, either part time/full time. They can bring to start-ups 'quality' smart money through their expertise and network.

Due to their independent status, decision process is fairly rapid and unstructured. A business angel has no 'board' to report or financial reports to submit. Quite often, the decision to invest is subjective, 'gut feeling', based only what it may seem a future successful business. Nevertheless, there are BA's that prefer a more structured approach; sometimes it's a mind process, sometimes it's put on paper.

Maxwell, Jeffrey and Levesque (2011) identifies 8 critical factors used by business angels in the decision taking process. To each criterion is attached a critical question - a positive answer to it can bring a positive decision towards investing. Of course, the BA can consider some criteria more important than others, pending on each individual business - e.g. Protectability (IP rights) can be very important in innovative businesses.

Table no. 1 Factors affecting business angel decision to invest

Factors	Critical question
Adoption	The question relates to how easily the customers will adopt the product
Product status	Here it refers to the readiness of the product, if it is ready for the market or it needs further work
Protectability	Crucial element, it questions how easy the product can be copied
Customer engagement	It is very important to have at least one paying customer
Route to market	Related to above factor, how we reach more customers
Market potential	The questions address how large is the market
Relevant experience	This refers to founders/managers experience in this particular business
Financial model	The most important question, how profitable is the product. From the investor point of view, it looks also on the amount invested

Source: Maxwell, Jeffrey and Levesque, 2011

After the investment was done, it comes the long process of nurturing and developing the business. As pointed out before, a business angel is a 'hands-on' investor, meaning they are actively involved in the company. Very often, this is the only guarantee of a successful return of the investment. The other way around, many entrepreneurs value more the 'smart money' received vs real money.

The involvement of a business angel differs a lot pending size of the share, his personal competencies, culture of the company etc. After an in-depth literature review, Politis (2008), identifies 4 major roles:

- Sounding board / strategic role - in most of the cases, the angel takes a sit in the board, guiding so the strategy of the company
- Resource acquisition role - due to his/her extensive network and experience, the angel is able to open new doors and equip the start-up with resources usually unavailable to a small company.
- Supervision and monitoring role - being part of the board, the angel not only follow up on the results of the company, but also lay the culture for a structured reporting system.
- Mentoring role - last, but not the least, the angel is the mentor of the entrepreneur, providing advice and counselling.

We can say very briefly that the business angel were two hats - investor and consultant, but a direct stake in the company.

The last point in the discussion about business angels is their role as a facilitator for further finance. Pending a successful development, the start-up will need new and bigger rounds of financing from other investors. According to Sorheim (2005), the business angel act as reference point and a source of trust for a VC. The start-ups that had previously a successful investment from a BA are much more prepared and likely to receive a financing from a VC. Practically, the angel 'hands-over' the company to a much larger and professional financier, the venture capital funds.

Venture capital funds as second level

The venture capital fund (VC) represents the next step in the financing of a start-up. The main difference between BA's and VC's is not done merely by the size of the funds available, but mainly by the fact that VC's are entities that performs early stage investments in a professional way. While business angels are, in the most of the cases, people that have also other activities, VC's are organized as commercial companies, focusing on investment activity.

According to Groh & Wallmeroth (2016), venture capitalists are active investors by monitoring and influencing the strategic decisions of the company in which they invest. Very often, they get a board sit which gave them partial control of the company. However, per Schertler & Tykvova (2012) their presence in the company is limited in time and as participation. In most of the cases, a VC hold no more than 20% of the company equity - enough to have a voice that is listen, but also minimizing the risks of losing the money in case things get wrong.

Andrieu & Stagliano (2016) identifies two types of VC's:

1. Independent Venture Capital fund (IVC) - these are the most common and are usually limited partnerships, whereas limited partners (LP's) put together their money. The fund is administered by one or more general partners (GP's), who are also associated in the fund, but have also management responsibilities. The GP's are motivated to have a good performance since they are entitled to carry interest and portfolio return. Typically, IVC's are formed for longer periods, 6 to 10 years, but with a clear deadline. Since they seek higher returns, IVC's have higher appetite for risks, by investing in early stage companies.
2. Bank Venture Capital fund (BVC) - are investment vehicles formed by banks. Normally they are more conservative, as the banks see them as a complement to their main business. As such, they tend to invest in later stages and not only in start-ups, but also in mature companies. BVC funds have unlimited period of time or at least until there is a market opportunity.

The Venture Capital industry has evolved in US where IVC's are predominant. In Europe, BVC's have long dominated the industry, but that has changed quite a lot in the last period of time. It should be noted also the expansion of Asian VC's, particularly from rich countries of Middle East.

Coming back to Europe, it should be noted also the involvement of EU, through a specialized vehicle, called European Investment Fund (EIF). EIF defines itself as "a specialist provider of risk finance to benefit small and medium-sized enterprises (SME) across Europe". In this capacity EIF has supported over 1 mil SME's throughout Europe, as can be seen in below map.

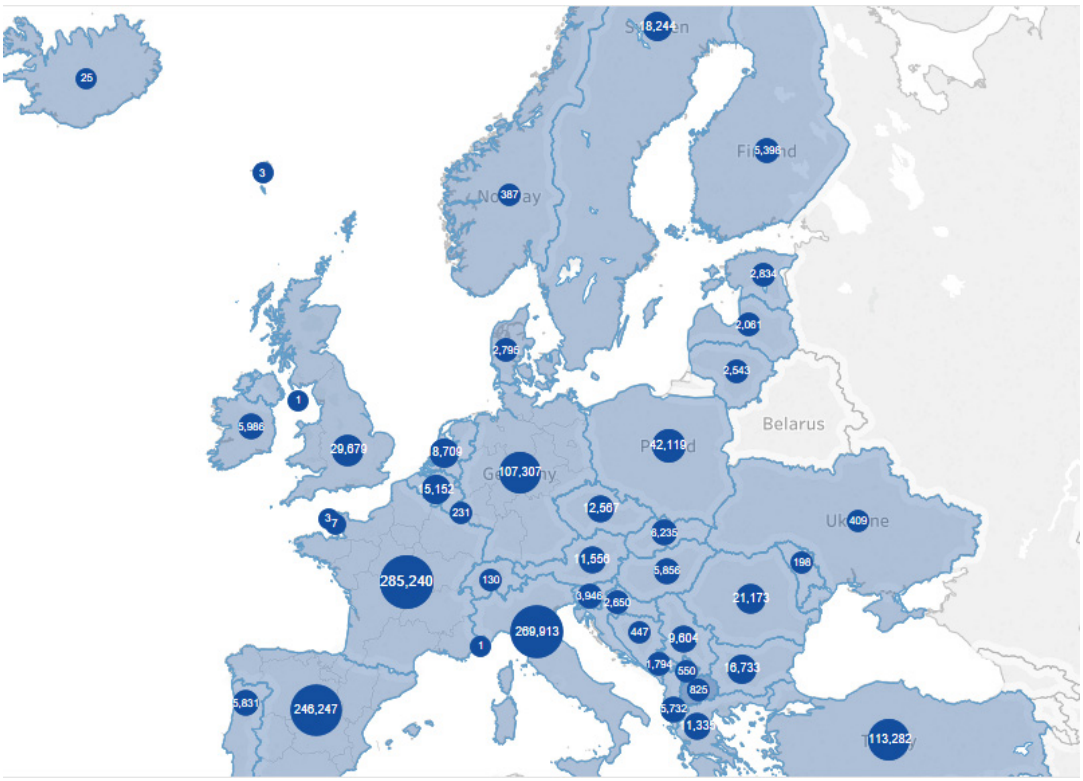

Fig. no. 3 No of SME's financed by EIF
Source: EIF, 2018

Zooming in to Romania, we noticed more than 20.000 companies financed and the numbers are likely to grow. EIF is now involved also in venture capital financing, through direct participation in two funds:

- GapMinder - https://gapminder.vc/
- Early Game Ventures - https://earlygame.vc/

Both funds collected money also from private individuals and companies, in addition to European funds. Normally, they finance start-ups following two paths:

1. Directly, through engagements with start-ups. The criteria used to allocate investments is similar with business angels, just the decision process is more elaborate and, therefore, longer.
2. Indirectly, through acceleration programs. According to EIF regulations, VC's financed via the program must develop such programs in which they select start-ups with high potential. This contributes also to the general development of entrepreneurship ecosystem in Romania. An acceleration program is typically run in cohorts, whereas the VC's select several companies to work and boost ("accelerate") their development through expertise, tools and mentorship. After successful finalization of the program, the VC injects a specific amount of money in exchange for an equity in the start-up.

Conclusions

Entrepreneurship represents the engine of any economy in the any world. Without it, the whole economic system will be collapsed. But entrepreneurs cannot succeed in the absence of financing, so this is the gas that keeps the engine running.

In this paper, we have analysed the first two types of financing actors - business angels and venture capital funds. They share similarities as regards to the financing stage (both are early stage), but differ in terms of involvement and professionalism.
The analyse was done looking at literature at global stage, but applying the concepts to Romania case. In this country, the whole ecosystem is at the beginning of its life and we expect systematic developments in the future. The author wishes to extend the research in two directions:

- Looking deeper in the financiers world
- Analysing the "other side", namely the entrepreneurs, with a special focus on innovation in supply chain industry.

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PGI AND PDO LOGOS AND PRODUCTS IN THE ROMANIAN MARKET. AN EXPLORATORY STUDY

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Abstract
Romania has 5 Geographical Indications (GI) registered products and has applied for another four. The main purpose was to reveal the notoriety of each of the Romanian GI traditional products registered or applied for. Secondary, we wanted to know the awareness level for PGI and PDO logos and significance. An exploratory study was conducted during March 2019. The results revealed the majority of the respondents didn't know (80.3% for PGI logo and 78.6% for PDO logo) the significance of PGI and PDO logos. Among GI Romanian products, the highest levels of awareness and consumption are for PGI Salam de Sibiu, followed by PGI Magiun de Topoloveni. Carnati de Plescoi and Telemea de Sibiu are well known among respondent although are not products with GI (some are at this moment submitted for registration). Supermarkets are the main places for buying GI products but with different levels of preference form one product to another (71.8% for PGI Salam de Sibiu and 33.3% for PGI Novac afumat din Tara Barsei).

Keywords
PDO, PGI, Designations, Romanian, consumer, Awerness, Tradional product.

JEL Classification
Q10, D10, L66, L83

Introduction

PDO label was created in 1992 replacing former French AOC (appellation d'origine controlee) and Italian and Spanish DO (denominazione di origine /denominacion de origen). Things have evolved during last 27 years and nowadays we have a wider body of Geographical Indications (GI). PGI and PDO are part of EU quality schemes. They are used for food, agricultural products and wine. Other products with GI are spirit drinks and aromatized wines. Beside GI, at the European level we can find other quality schemes like: Traditional speciality guaranteed (TSG), Mountain product, Product of EU's outermost regions.

In 2011, Romania registered its first product with PGI (Protected Geographical Indication), namely plum Magiun from Topoloveni. In 2016 first PDO (Protected Designation of Origin) product was registered in European Commission' DOOR archive. At this moment (March 2019), Romania has 4 PDO and 1 PGI products registered and has applied for PDO designations for other 5 products. The purpose of this paper is to measure awareness of PDO and PGI products and logos among Romanian consumers, and the way they buy already

certified national products. Through a pilot study we will track the notoriety of the products which have obtained the PGI or PDO certification, but also those which are in the process of obtaining it. Customers' perception is very important in order to gain market share and visibility.

Current state of knowledge

Romania has 5 GI products registered and another 4 applied for PGI. First Romanian GI product was PGI Magiun de prune de Topoloveni (2011), followed by PGI Salam de Sibiu and DOP Telemea de Ibanesti (2016), PGI smoked Novac from Tara Barsei (2017) and smoked Scrumbie de Dunare (2018). Another 4 products applied for PGI designation: Carnati de Plescoi (2016), Cascaval de Saveni (2017), Telemea de Sibiu (2018) and Salata cu icre de stiuca de Tulcea (2018). At European Commission register can be found a number of 1448 products with GI of which 638 products with PDO, 749 products with PGI and 61 products recognized as TSG. Another 216 products have the "applied" or "published" status (PDO, PGI or TSG) as first steps to obtain GI. A brief country comparison can be seen in table no. 1.

Table no. 1 Current European number of products with GI designations

Country	Number of GI designations (PDO + PGI)	Number of PGI products	Number of PDO products	Number of products applied for GI designation
Italy	297	130	167	27
France	248	144	104	40
Spain	192	90	102	28
Portugal	138	74	64	5
Greece	107	31	76	7
Germany	91	79	12	5
United Kingdom	68	41	27	12
Poland	31	23	8	6
Romania	5	4	1	4

Source: Own computation based on EC data (2019)

The scientific literature in the field of GI products concentrate mainly on a product or group of products. As origin of the authors it is important to notice that a large majority of them are from Mediterranean region representing the countries with the highest number of registered GI designations.

Most of the research focuses on chemical aspects or components of different GI products like: olives, cheese, olive oil (Berard, 2007; Fernández-García et. al, 2006; Ferreira, Pinho & Sampaio, 2009; de Alda-Garciope, 2012; Monteagudo Galvez et al. 2015), on national or international legislation (Fragata, Tiberio and Teixeira, 2007; Todea et. al, 2009; Giovannucci et. al, 2009), on wines in relation with food (Marchini, 2014; Olivieri and Giraldi, 2015; Bencivenga et. Al, 2016), on value added and economic advantages of GI products (Ribeiro and Santos, 2004; Gatti, 2009; Belletti et. Al, 2007).

In terms of customers' perception, awareness, reputation and shopping habits, scientific literature offers several papers in the field of GI products. Teixeira (2004), and Marreiros (1997), cited in Fregata (2007, p. 10), they show that for olive oil and beef meat there is a weak differentiation between PDO or PGI and non PDO or PGI products from the same region for the majority of the Portuguese consumers. Also for the majority of the Portuguese consumers the concepts of PDO and PDI were unknown. Another Portuguese study (Sottomayor, Souza Monteiro and Teixeira, 2010) found a similar situation where

respondents do not know about specific PDOs although they value information on origin of the product.
Another research (Vechio and Annunziata, 2011) conducted through cluster analysis showed that for customers with an excellent knowledge of EU certification schemes PDO and PGI logos are commonly the main purchasing motivation. Other consumers tend to buy products based on criteria like: price, better appearance and Italian origin. The same study revealed that 37.4% of the respondents had a good or excellent knowledge of the PDO logo meaning. The same percent (37.4%) stated they had no or little knowledge about PDO logo. In term of places for buying typical products the following situation occurred: supermarkets (42%), traditional grocery stores (34%), speciality food stores (17%), local markets (4.7%), fairs and festivals (1.7%), and farm/producer (0.6%).
Distribution plays an important role in bringing GI products as close as possible to the consumer. Several studies show that GI products are marketed differently. Italy presents a diverse situation as it can be seen in table no. 2.

Table no. 2 Retail channel and product category in Italy

	Direct selling (%)	Traditional (%)	Supermarkets (%)	HORECA (%)
PDO	26	25	39	10
Balsamic vinegar	25	59	11	5
Other meat products	5	5	90	0
Processed meat	8	30	53	9
Cheese	24	29	39	8
Olive Oil	45	14	24	17
Fruit, vegetables and cereals	32	18	48	3
Bakery Products	11	11	74	5
Spices	13	59	10	18
PDO	16	18	56	10
Fresh Meat	0	24	71	6
Other meat products	20	19	47	14
Olive Oil	20	5	70	5
Fruit, vegetables and cereals	17	18	55	10
TOTAL	23	23	44	10

Source: Arfini, F., & Capelli, M. G. (2009). The resilient character of PDO/PGI products in dynamic food markets (No. 698-2016-47837).

It seems that PDO and PGI logos do not have a large recognition among European consumers and the main places for buying GI products remain the supermarkets. Differences in places for buying products very among the type of products sold.

Methodology
In order to find out the awareness level for PDO and PGI logos and what they stand for we used a self-administered questionnaire. A short description of what PGO and PGI mean is placed at the beginning of the survey. The main purpose was to reveal the notoriety of each of the Romanian GI products registered or applied for. Secondary we wanted to see if there are differences in awareness between already registered GI products and those that are in the process of registration. Thirdly we wanted to see if there are differences in retail channel for each of the 5 GI Romanian products. Closed questions and Likert scale questions are used. The questionnaire was administered during February 2019, on the platform isondaje.ro. The

total number of answers received was 252. Being a pilot research we used descriptive data analysis to highlight the main results.
From a socio-demographic perspective, 71% of the respondents were women, 44.4% had university or above studies, 67.1% declared their origin from Muntenia, 11.5% from Moldova and 8.7% from Oltenia, 16.7% are state employee, 33% are private employee and 43% are students. The average age was 30.1 years. The sample is not statistically representative for Romania but results can raise the curtain for Romanian GI products.
When answered if the respondent have ever seen a product sold in Romania with the PDO/PGI symbol and before starting the survey did he or she knew what this symbol represents the situation is almost similar. 61.5% (for PDO) and 60.7% (for PGI) haven't seen / didn't know what those two symbols represent. 19.8% and 17.9% have seen / didn't know what those two symbols represent. Only 11.1% and 12.7% have seen / did know what those two symbols represent.
Among GI Romanian products, the highest levels of awareness and consumption are for PGI Salam de Sibiu, followed by PGI Magiun de Topoloveni, as it can be seen in table no. 3. The PGI smoked Novac from Tara Barsei has the lowest levels of awareness and consumption. The other two products with GI designations have similar levels of awareness and consumption.

Table no. 3 Awareness and consumption level for the Romanian certified GI products

	Scrumbie de Dunare afumata	Novac afumat din Tara Barsei	Telemea de Ibanesti	Salam de Sibiu	Magiun de prune Topoloveni
I haven't heard / I didn't consumed	81	148	113	5	56
I heard / I didn't consumed	106	85	94	13	47
I heard / I consumed	65	19	45	234	149

Source: own results

Other four products make efforts to obtain PGI designations. The actual levels of awareness and consumption can be seen in table no. 4. Overall results are similar with well-known products (Cârnați de Pleșcoi and Telemea de Sibiu) and less-known products.

Table no. 4 Awareness and consumption level for the Romanian submitted GI products

	Salata de stiuca de Tulcea	Telemea de Sibiu	Cascaval de Saveni	Carnati de Plescoi
I haven't heard / I didn't consumed	178	67	156	14
I heard / I didn't consumed	52	90	80	45
I heard / I consumed	22	95	16	193

Source: own results

This differences in awareness of certified or submitted GI products probably resides in the origin province of the respondents. Majority are from Muntenia and Oltenia, southern provinces of Romania. Being highly localized, GI products are difficult to market over long distances. Tara Barsei and Saveni are regions in the northern part of Romania, far away from home origin of the respondents.

From buying places perspective, the results show a diverse situation. Considering only respondents who bought GI Romanian products the main places for acquiring those remain supermarkets (71.8% for PGI Salam de Sibiu, 57.9% for PGI Magiun de Topooveni, 39.6% for PDO Telemea de Ibanesti, 36% for PGI smoked Scrumbie de Dunare and 33.3% for PGI smoked Novac from Tara Barsei). Second place for buying GI products is occupied by gastronomic festivals and fairs (28% for PGI Smoked Scrumbie de Dunare, 42% for PGI smoked Novac from Tara Barsei, 32.7% for PDO Telemea de Ibanesti, 10.3% for PGI Salam de Sibiu and 15% for PGI Magiun de Topooveni). Other places for buying GI products are: local market and directly from the producer when visiting the area with different percentages.

On a Likert scale where 1 stands for totally unknown and 5 for renowned, respondents were asked to express their opinion about all 9 products. Results are presented in Figure no. 1.

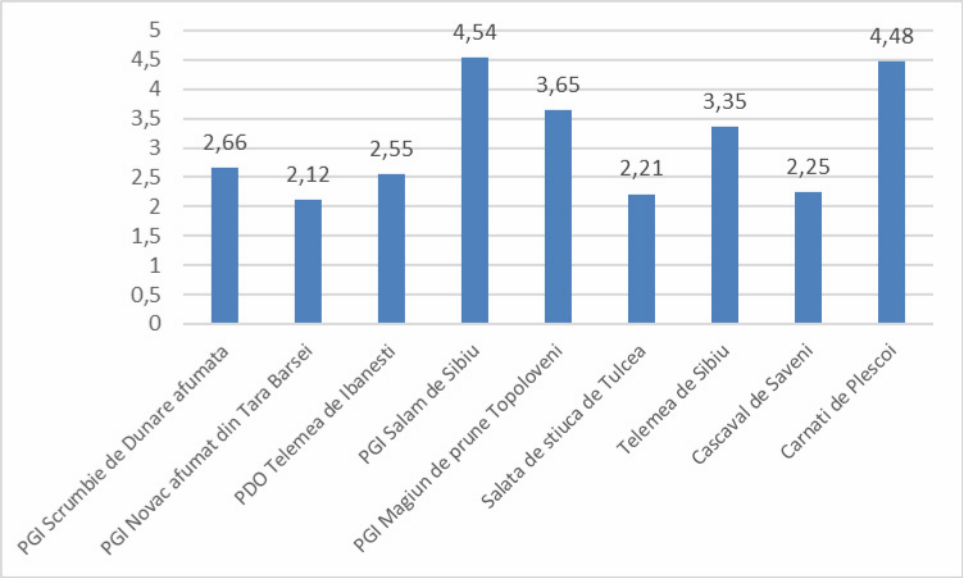

Fig. no. 1 Name notoriety for certified and submitted Romanian GI products

Source: own results

PGI Salam de Sibiu and Carnati de Plescoi have the highest notoriety while PGI smoked Novac from Tara Barsei and Salata de stiuca de Tulcea the lowest. This situation can be explained by origin of the respondents and consumption habits. PGI Salam de Sibiu and Carnati de Plescoi are meat products with production sites in the region of Muntenia or very close while PGI smoked Novac from Tara Barsei and Salata de stiuca de Tulcea are fish products and have less interest for consumers. Tara Barsei and Saveni are hundreds of kilometres away from Muntenia region.

Conclusions

The present study has the limitation of not being statistically representative at Romanian population. It presents a pilot study that can be developed in further research by county, age or by having a sample with representativeness at national level. Additional studies can be developed in order to extend the legitimacy of the findings and to generalize the results to a

specific county or even at Romanian level. This study could be a starting point for producers to valorise the importance of PDO and PGI designations for increasing business by knowing the actual level of awareness. In the scientific literature of Romania this study can open a path for further researches from multiple perspectives: management, marketing, public relations and advertising, logistics.

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CONSUMER WILLINGNESS TO EAT TRADITIONAL PRODUCTS

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Abstract
Traditional products are becoming increasingly popular both on domestic and foreign markets. It has also been noted that the interest in high-quality products has grown, and traditional products by excellence are quality products. Consumers have grown their demands, and this should be an incentive for investors to invest in food production capacities, especially in the field of agricultural products.
The purpose of this research was to find out how consumers view traditional products, the intensity with which they are consuming this type of products, and the type of products that present interest to them.

Keywords: Traditional products, Regional gastronomy, Intensity of consumption, Rural environment

JEL Classification: L80, C1, Q1

Introduction

Gastronomy studies various cultural components that have nutrition and food in general as a basic element. Thus, it is related to the Arts of Beauty and the social sciences in terms of culture, and to natural sciences relating to the digestive apparatus of the human body. Popovici affirms that "The culture of a people can be known through the open window of his kitchen" (Popovici, 2010). The cuisine of a people does not come out of the blue. It is a sum. It gathers and synthesizes the entire civilization of that people. Everything is reflected in gastronomy: history, geography, influences of other civilizations, population psychology, technology. Gastronomy breathes in its own rhythm that has been created by climate, resources, traditions, religions. Culinary art is the art of food preparation.
Sosa Ingredients affirms that gastronomy "is one of our most cultivated pleasures, we love trying, tasting and cooking". People regularly enjoy discovering new ingredients, new products ant like to test new recipes and by doing that they discover the locals through cuisine (Sosa Ingredients S.L, 2018). Gastronomy is also considered an essential aspect of traveler's satisfaction (Galvez, et al., 2017).
This category of products is very important for Romania and is an opportunity for economic growth, especially in isolated or disadvantaged rural areas, if they are addressed through concerted strategic measures.

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Literature review

According to RNDR (Reteaua Nationala de Dezvoltare Rurala, 2015) traditional product is represented by food produced on national territory and for which local raw materials are used, which does not contain food additives, which has a traditional recipe, a way of production and / or processing and a traditional technological process and which distinguishes itself from other similar products belonging to the same category.

According to the Regulation (EC) no. 510 of 20 March 2006, traditional products can be protected at Community level (Ministerul Agriculturii şi Dezvoltării Rurale, 2013). The registration of quality agricultural products and foodstuffs is seen as a way of supporting European producers in order to maintain their competitiveness and profitability (European Comision, 2016). These protected quality agricultural products and foodstuffs are categorized into three categories: Protected Designation of Origin (PDO), Protected Geographical Indication (PGI) and Traditional Specialties Guaranteed (TSG). The fact that these products are produced ensures the protection of knowledge, skills, and local jobs, but also the development and economic growth of rural areas. Food produce locally represent strong elements of local identity and culture (Fernández-Ferrín, et al., 2018). Traditional food may also be used as vehicles of branding and marketing (Bardone & Spalvēna, 2019). The registration also grants name protection from misuse and imitation, help consumers in their decision of buying (Grunert & Aachmann, 2016). At European level Italy, France and Spain having the most products registered in these three categories mentioned above (Dias & Mendes, 2018).

Although there are a variety of food products registered at Ministry of Agricultures and Rural Development at the moment in Romania there are 5 products recognized and protected at Community level (European Commission, 2019): “Scrumbie de Dunăre afumată” – PGI (2018); “Novac afumat din Ţara Bârsei” – PGI (2017); “Salam de Sibiu” – PGI (2016); “Magiun de prune Topoloveni” – PGI (2011); “Telemea de Ibăneşti” – PDO (2016).

In addition to these, there are five others application registered for recognition at European level (European Commission, 2019): “Salată cu icre de ştriucă de Tulcea” – PGI (2018); “Telemea de Sibiu” – PGI (2018); “Caşcaval de Săveni” – PGI (2017); “Magiun de Prune Topoloveni” – PGI (2016); “Cârnaţi de Pleşcoi” – PGI (2016).

Panagou et al. asserts that traditional foods are those that have been consumed locally or regionally for an extended period of time and which could be considered as an extension of culture, history, geography, climate, agriculture and lifestyle. The necessary ingredients or recipes for the preparation of such preparations have been transmitted from one generation to the next and have eventually become part of the country's folklore (Panagou, et al., 2013).

"If we have to eat and drink to live, why not make from it a passion" said Simion (Simon, 2013). Life demonstrates this fully and Romanian cuisine, with its variety, is extremely generous. Other specialists in the field underlines that food affects quality of life and health of modern man (Trichopoulou, et al., 2007). The close relationship between food and health is influenced by the natural and climatic conditions, the level of development of the economy, population occupations. Lew identify the times when tourist / consumer meets with food, namely in moments of recreation, exploration and experimentation of new tastes (Lew, 2013). In the moment of meting with food, tourists give importance on familiarity and on natural content of food (Balogh, et al., 2016) (Özdemir & Seyitoğlu, 2017).

At the European Union level, the traditional products market has sales of over 14 billion euros annually (Popa, 2011). At Romanian level of these products are usually marketed in fairs and markets, but very few are displayed on the shelves of the big stores. These products, however, accumulate annual sales of over 100 million euros, according to statistics from the Ministry of Agriculture and Rural Development (Ministerul Agriculturii şi Dezvoltării Rurale, 2013).

Just 27.3% of EU population lives in rural areas according to data from Eurostat, with Lithuania leading in this aspect with a 56.2% of population living in rural area while Malta is having only 0.2% people in rural area. For Romania 46.5% of the population is living in rural area, 24.6 % in towns and suburbs while 28.9% of them living in cities (Eurostat, 2019).
According to statistics regarding internet access at EU levels we can say that there is a small difference between cities and rural areas. A slightly difference was present in Bulgaria, Greece and Lithuania where the proportion of households with internet access was higher in cities compared with rural area (Eurostat, 2019). For Romania 81% of the households have internet access, percentage that put Romania on the bottom of the list.

Methodology of research

We conducted an exploratory research aimed at: identifying the categories of traditional products that are likely to have success if they will be promoted; identifying the right moment for promotion campaign; regional particularities associated with the different types of traditional products.
For our research we considered the following objectives: *1. Identify the consumption period for traditional products; *2. Gastronomy importance in choosing a holiday destination; *3. Frequency of consumption for different categories of traditional products; *4. Identify the association between different types of traditional products and the historic regions of Romania.
For each of the 4 suppositions we framed research hypotheses as follows: *1. Usually traditional products are consumed during the holidays (Easter, Christmas, etc.); *2. When choosing a destination, respondents also consider local gastronomy; *3. For the types of products envisaged is expected low consumption; *4. Respondents will frame the different types of traditional products, considering their previous experience;
In order to achieve the goal, we used the survey that is a primary data collection method. It's using the questionnaire as a data collection tool. This method was based on a self-administered questionnaire. We have used exploratory research, given the knowledge and understanding of the phenomenon investigated.
The surveyed collectivity was represented by people over the age of 18, both female and male, coming from different regions of the country, people with Facebook accounts, and which had access to Internet. The observation unit coincided with the sampling unit and was represented by the individual consumer. Spatial coordinates: the online platform www.isondaje.ro was used, a platform used also to build the questionnaire.
The questionnaire was applied at the beginning of April 2019 – for one week. This method was used as it involved low costs, because of the time resource limit, and due to possibility of obtaining a relevant amount of information related to the investigated field. There were no incomplete answers.
The usefulness of the research theme is confirmed by the limited number of studies in Romania on the issue of traditional products, the lack of a unanimous opinion on the content of the term, both among consumers and tenderers, and last but not least, the European consumers' increasing demand for traditional products in the region.
It was estimated that the questionnaire reached more than 3000 people. We conducted a pilot study on 263 respondents (table nr. 1). A response rate of 8.76% was estimated.

Table no. 1 Demographic data

Sex		Studies				The residence	
Female	*Male*	*High school*	*Post-secon*	*Unive rsity*	*Postg radua*	*Urban area*	*Rural area*
68%	32%	62.8%	6.8%	20.9%	9.5%	82.9%	17.1%
Number of respondents						263	
Average Respondents' Age						29.3 ani	

Source: realized by authors based on research (April 2019)

The sampling method used was snowball, non-probability method. The link to the questionnaire was distributed through the Facebook social network to different groups, so that as many respondents could access it, and they had the option to distributed it further to their friends for more answers.
The questionnaire contains 13 questions. We use different type of queries like: opinion, behavior, nominal queries. This type of question has been used to facilitate the filing process and subsequent for ese of centralization for collected data.

Results and debates
Of the total number of respondents, more than half have High school studies – 62.8% of them, University studies only 20.9%, while postgraduate studies have 9.5%. Most respondents came from urban areas, ~ 83% of them, most of them from Muntenia and Moldova. In terms of revenue ~35% of them earning between 1500 and 2499 lei, while ~32 of them earning less than 1500 lei. The rest of respondents earning more than 2500 lei (table 2).

Table 2. Characteristics of respondents

Region of origin							Revenue Category					
Moldova	*Transilvania*	*Muntenia*	*Oltenia*	*Dobrogea*	*Banat*	*Bucovina*	*Less than 1500 lei*	*Between 1500-2499 lei*	*Between 2500-3499 lei*	*Between 3500-4499 lei*	*Between 4500-5500 lei*	*Higher than 5500 lei*
13%	5%	66%	7%	5%	1%	3%	*32 %*	*35%*	*13%*	*11%*	*4%*	*5%*

Source: realized by authors based on research (April 2019)

Most of the respondents have parents that lives in urban areas 58%, while the rest are living in rural area.
Of interest was also the social status and the actual occupation of respondents. We found out that most of respondent were single 32%, 27% of them stated that they are in a relation, while 23% of the were married and with one child. The rest were unmarried, divorced or married without children (table 3).

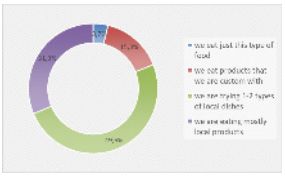
Table 3. Characteristics of respondents

Social status							Actual occupation							
Married without a child	*Married with a child*	*Not married*	*With children*	*Alone*	*Divorced*	*In a relation*	*Student*	*Private sector*	*Public sector worker*	*Public management position*	*Private sector – management*	*Entrepreneur*	*Pensioner*	*Unemployed*
3 %	23 %	10 %	4 %	32 %	1 %	27%	*48 %*	*19 %*	*17 %*	*2 %*	*5 %*	*3 %*	*4 %*	*2 %*

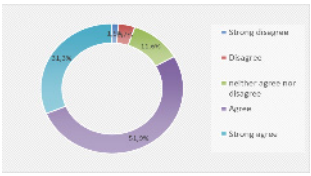
Source: realized by authors based on research (April 2019)

The majority of respondents mention that they are enrolled in a study program 48%, while 19 % of are working in the private sector, with 17% working in administration sector. Only 3% of them had their own business. Others were retired people, unemployed, while others have management positions in private or public sector 8%.

First objective for our research was to proper identify the periods when traditional products are consumed. According to research results we find out that people tend to give importance to religious holidays and that constitute a good opportunity for them to consume traditional products, 51% of them agreed to that, while 31% are strongly agree with this statement (fig. no. 1B). While they visit a destination, tourist tend to try 1-2 types of local dishes 49.6% of them, 31.3% are eating mostly local dishes while the rest of respondents eat products that are customs with or they don't eat traditional products at all (fig. no. 1A).



A



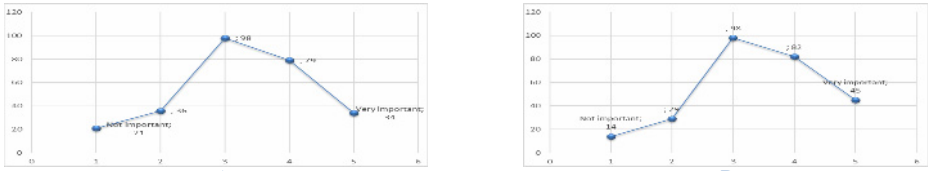
B

Fig. no. 1 A - Consumption of traditional products during holidays vacation
Fig. no. 1 B – Consumption of traditional products during religious holidays
Source: realized by authors based on research (April 2019)

The results in this case confirms the hypotheses stated at the beginning of the research project. People do consume traditional products during holidays, including religious holidays (Easter, Christmas).

Second objective of our research was to identify the importance given to gastronomy by tourist in choosing their places of holidays.

We found out that tourist gave relatively importance to local gastronomy when choosing a destination. The average answer was 3.26 on a scale from 1 to 5 (fig. no. 2A). The same situation we encounter when we compare the results for the importance of gastronomy in choosing a destination to celebrate religious holidays, on average the answers were situated at 3.43 on a scale from 1 to 5 (fig. no. 2B). This indicates that gastronomy is important, but it is not the decisive factor in choosing a destination.

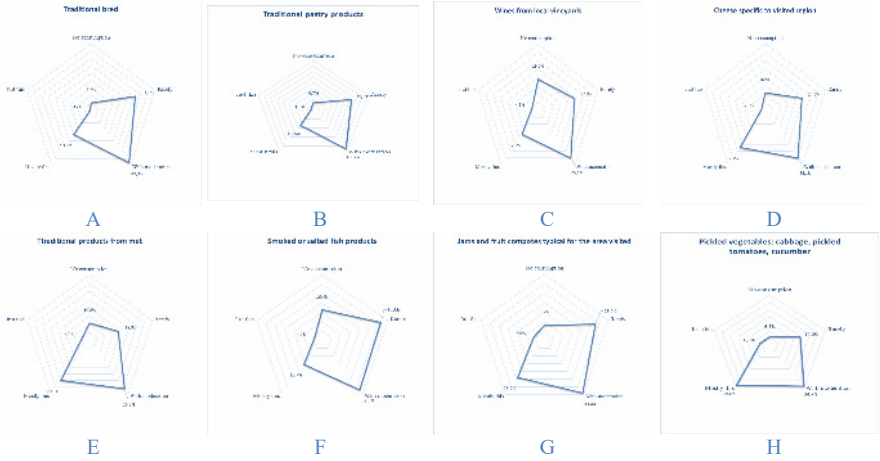


A B

Fig. no. 2. A - Importance given to local gastronomy in choosing a destination
Fig. no. 2. B - Importance given to gastronomy in choosing a destination for religious holidays

Source: realized by authors based on research (April 2019)

The answers confirm the hypotheses, according to which respondents consider local gastronomy when choosing a destination. But the answers also highlight that local gastronomy is not a decisive factor in choosing a destination.



A B C D

E F G H

Fig. no. 3 Intensity of consumption for eight types of traditional products

Source: realized by authors based on research (April 2019)

Third objective of the research was to identify the frequency of consumption for: traditional bred (fig. no. 3A), traditional pastry products (poale-n brau, placinte dobrogene, etc) (fig. no. 3B), wines from local vineyards (fig. no. 3C), cheese specific to visited region (fig. no. 3D), traditional products from met (jumari, slanina, pastrami afumata, etc) (fig. no. 3E), smoked or salted fish products (fig. no. 3F), jams and fruit compotes typical for the area visited (fig. no. 3G), pickled vegetables: cabbage, pickled tomatoes, cucumber (fig. no. 3H). We use a Likert scale for determine the intensity of consumption. We presented all these results in figure number 3.

In concordance with the answers we found that people eat traditional bred with moderation, 43% of them, while in strong connection with this they eat the same traditional pastry products. For booth types of product respondents declare that they eat them rarely, 31% of them.

While on vacation tourist tend to drink local beverage, in this case wine, and to eat local chees. Also, we found that traditional products from meat are on the list of visitors, 30% of them declaring that they eat mostly this while they are on vacation.

Smoked fish product is not that popular among visitors, they declare that they it this type of food rarely with 32% of them.

An important percentage of respondent, 28% of them, declare that they eat rarely jams and fruit compotes typically to area visited. In contrast visitors eat, in an important proportion, local vegetables, 34% of them declaring that they it mostly this.

The answers invalidate the hypotheses assumed at the beginning of research, according to witch visitors are consuming low quantities of local products. In state they declare that they eat at list with moderation local products. They eat mostly local vegetables, meat products local cheese. Only Smoked fish is not that in demand among visitors.

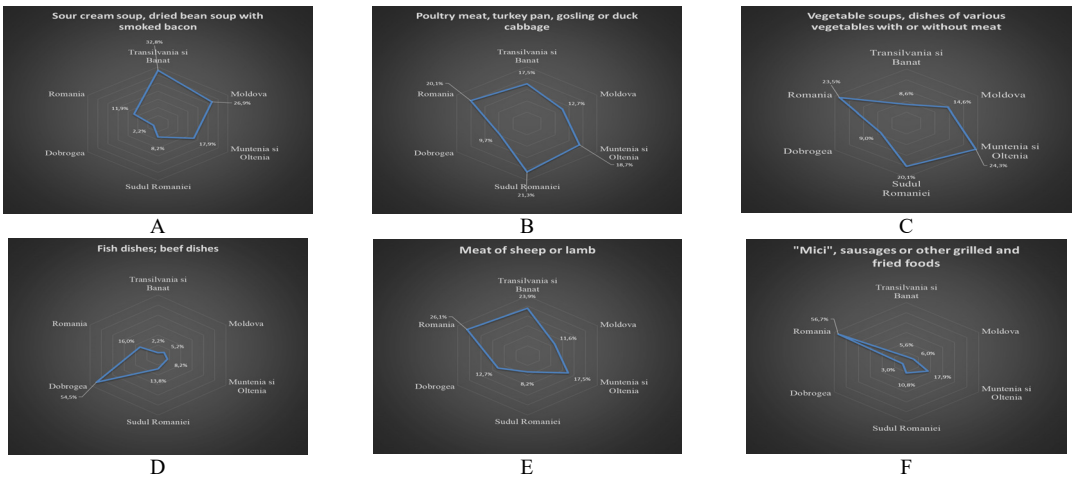


Fig. no. 4 The historic regions of Romania and their connection with specific dishes
Source: realized by authors based on research (April 2019)

Forth objective of the research was to determine if there is a connection between different types of dishes with the historic regions of Romania. We've taken into consideration as historic regions Moldova, Transilvania and Banat, Muntenia and Oltenia, Dobrogea, South of Romania. We also toke Romania as a country in case the respondents won't consider that the selected dishes can be associated with one of Romanian historical region. As dishes we chose the following ones: Sour cream soup, dried bean soup with smoked bacon (fig. no. 4A); Poultry meat, turkey pan, gosling or duck cabbage (fig. no. 4B); Vegetable soups, dishes of various vegetables with or without meat (fig. no. 4C); Fish dishes; beef dishes (fig. no. 4D); Meat of sheep or lamb (fig. no. 4E); "Mici", sausages or other grilled and fried foods (fig. no. 4F).

Regarding "**Sour cream soup, dried bean soup with smoked bacon**" we found that people associate this dish mostly with Transilvania, Banat and Moldova. They consider that it is a more regional dish. "**Poultry meat, turkey pan, gosling or duck cabbage**" is associated mostly with the south part of Romania and les with the Norden parts. It is associated also with the concept of national dish.

"**Vegetable soups, dishes of various vegetables with or without meat**" is also associated with the regions from south of Romania, and les with the northern regions. The southern regions have a warmer climate that favorize the growth of vegetables People also agree that this kind of dishes are specific to Romania as a hole. "**Fish dishes; beef dishes**" are strongly connected with Dobrogea region. People made a connection with "Danube Delta" which is founded in this part of our country. "**Meat of sheep or lamb**" it is considered to have a stronger importance in Transilvania and Banat. It is also considered a national dish, Romania having a strong history in the growing of sheep. ""**Mici", sausages or other grilled and fried foods**" are strongly considered a national dish. Romanians are considered to be a meat lovers among gourmets (Ghimpeteanu, et al., 2015).

The results for this objective confirm the hypothesis formulated at the beginning of research that people associate different kinds of dishes accordingly to their previous experience, and also based on common knowledge about our country.

Results of this research clearly indicates that there is a demand for traditional products especially during religious holidays. Entrepreneurs who decide to have marketing campaign before this religious event could improve their sales. We also find that there is an important interest for local vegetable products, which also can constitute into an incentive for investors to invest in organic agriculture.

Conclusions

Along with organic products and products with designations of origin, traditional products are produced with a high level of valorization. Past years have been marked with a growing demand for this type of products and this could constitute a reason for further support of traditional products, this being one of the solutions to increase the competitiveness of the agricultural sector. According to results people tend to give importance to gastronomy when choosing a destination, they tend to consume local products during their journeys. Among the local products that they eat, local vegetables, wines and chees products are among the most consumed. Research show that "Mici" is recognized as a truly romanian dish.

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RESEARCH ON THE INNOVATION ACTIVITY IN ROMANIAN TRAVEL AGENCIES

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Abstract
Research on innovation in the tourism industry should become a priority, since it is a valuable tool for understanding the dynamics of this business sector, offering a more in-depth perspective that can be useful not only for its representatives, but also for policy-makers. As a result, this paper presents the findings of an exploratory study, based on a questionnaire applied among travel agencies officially registered in Romania. The main aim of the research was to indicate whether travel agencies have an innovative behaviour, whether managers in this type of organizations perceive innovation as a key element in obtaining competitive advantage, and broadly, whether their organizations have innovation-related objectives. In addition, the study presents empirical evidence on the areas in which travel agencies tend to be more innovative.

Keywords
Product and service innovation, process innovation, marketing innovation, managerial innovation, organizational innovation, travel agencies.

JEL Classification
L83, O31, Z31, Z32.

Introduction

The global tourism industry is currently characterized by two milestones: rapid growth and competitiveness. In the last two decades, attention has been increasingly focused on innovation in tourism (Hjalager, 2010). It has been repeatedly stated that rigorous innovation research has been applied to tourism only to a limited extent, and empirical tests on the phenomenon have been modest (Hjalager, 2002; Sundbo, Orfila-Sintes and Sørensen, 2007). It is true that tourism analysts appear to have begun late to resort to the transfer of theory, concepts and methodologies already known and applied in other sectors for several decades. However, a review of the tourism innovation literature shows that recent research is not at a level comparable to that of other sectors. This article analyses different innovation categories – product, process, marketing, organizational and managerial innovation. The research is even more necessary since OECD (Organisation for Economic Co-operation and Development) does not include Romania among the 35 countries surveyed in terms of innovation indicators (OECD, 2017). In addition to the four types of innovation identified by the latest edition of the Oslo Manual (product, process, marketing and organizational innovation) the authors have chosen to also include in the research managerial innovations (Eurostat, 2017). The aim of this article is to investigate the extent to which travel agencies

in Romania have innovative behaviour and innovation-based objectives, as this is a source of competitive advantage for all companies in the tourism industry (Den Hertog, Gallouj and Segers, 2011; Tang, Wang and Tang, 2015; Victorino et al., 2005), including for travel agencies.

Literature review

The traditional approach to academic innovation developed by Joseph Schumpeter (1934) has been applied to some extent in tourism research. Hall's study (2009) is consistent with the four innovation categories mentioned by OECD, Hjalager (1997) offers a basic, but original classification close to Schumpeter, while Weiermair (2006) brings another vision. To a significant extent, tourism innovation studies are still based on exploratory and qualitative cases where the phenomenon is investigated and explained from several angles and where exact definitions are less important. At the same time, however, there is a preoccupation for innovative tourism studies to meet international standards and procedures, thus providing more possibilities to compare quantifiable levels of innovation at sectorial, national and international level (Hall, 2009). This requires a clear definition of the innovation concept and identity coordinates of the tourism industry, as outlined by the OECD and Eurostat (2005) in the Oslo Manual.

According to the Oslo Manual (2005), innovation represents „the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations". In clarifying the typology of innovations, it was considered appropriate the approach of Hjalager (2010), this being comprehensive and following the OECD and Eurostat classical approach (2005). Thus, the main types of innovations may be defined as follows: *Innovation* – the result of human creativity, representing the successful exploitation of new ideas, resulting in the production or commercial exploitation of a new product or process. *Product or service innovation* – changes perceptible by the customer, generated at the level of tourism product/service offer that may influence the purchasing decision of potential customers. *Process innovations* – seldom visible to clients, implemented in back-office, aimed at increasing efficiency, productivity and operational flow; most of the time, are related to the emergence of new technologies. *Marketing innovations* – fundamental changes in the marketing mix, with a role in the customer-service provider relationship, determining the market orientation and the reputation of the organization. *Managerial innovations* – new ways of organizing the company's internal and external resources, generally designed to improve human resources, by increasing skills and satisfaction; this type of innovation is directly reflected in employees' performance and productivity. *Organizational innovations* – new structures and forms of organization (collaborative) that help to increase business and improve the legal framework in which tourist services are provided and consumed.

In recent years, innovation has become increasingly more frequent the subject of research in tourism (OECD, 2006; Peters and Pikkemaat, 2006). However, studies in this field are still scattered and fragmented: some analyse the economic dimensions (for example, Weiermair, 2006), and others focus on the role of entrepreneurship (eg., Ateljevic and Doorne, 2000; Brunner-Sperdin and Peters, 2004; Koh and Hatten, 2002).

Tourism services are personal services and gain substance through the contribution of an internal factor (supplier) and an external one (the client) (Smith, 1994). The client himself has to be proactive and in most cases he is the one who comes to the destination (a constrain that could be a challenge for innovation); he participates either passively, or actively (in this situation there is even more room for innovation) in the production of services. Overall, tourism services depend on external partners and other factors. Similarly, the capacity and human resources motivation are essential, suggesting the need for both capital work-related

innovations (Bieger, 2002). In developing countries, the lack of a suitable political and business environment, insufficient education, focus on day-to-day issues and limited R&D investments make it difficult to implement Western style innovation processes (Aubert, 2004). In this context, which is also the case of Romania, innovation is simultaneously stimulated by formal development programs and by a multitude of local entrepreneurs and local communities who innovate in order to survive.

Research methodology

As highlighted in the previous section of the paper, innovation is a reality in a world dominated by fierce competition and an increasingly demanding customer. How can your product or service be better? How can it be distributed to the client through the best and fastest channel? How can you motivate staff to remain faithful to an often unbalanced labour market? Can innovation be a solution for Romanian travel agencies? With these questions in mind, the authors have developed an exploratory study, the main purpose of which is to determine whether travel agencies in Romania have an innovative behaviour and to research the role of innovation and its materialization form.

The research objectives are as follows: **O1** – to identify whether travel agencies in Romania have an innovative behaviour; **O2** – to determine the main ways of innovation in travel agencies in Romania; **O3** – to highlight whether Romanian travel agencies are developing an innovation culture. To meet these objectives, during April-June 2017, a personalized e-mail was sent to all travel agencies in Romania registered in the Ministry of Tourism database (http://turism.gov.ro/web/autorizare-turism/, accessed at March 10, 2017). The e-mail asked respondents to fill in the online questionnaire posted on isondaje.ro platform. The actual sending of e-mails to the database of over 2000 agencies was carried out by students of the second year of the Bucharest University of Economic Studies – Faculty of Business and Tourism.

The questionnaire covered 21 questions, mainly closed ones. Out of these, 5 complex questions, items 5-9 (with a total number of 20 items to be answered) of the questionnaire, were aimed at identifying the respondents' opinions on the five types of innovation analysed for their travel agency, by using a 5-step Likert scale to determine the importance/frequency of implementation of innovation in travel agencies (from 1- complete disagreement, to 5 – complete agreement). To avoid confusions, the terms used in the questionnaire were explained in the preamble, by using Hjalager's (2010) approach. Finally, after sending 2071 e-mails to all licensed agencies in Romania at the time of research (for agencies with multiple points of sale, only one e-mail was sent, to the „parent company"), 71 questionnaires were returned, resulting in a 3.43% response rate. The research is total since it covered the whole target population, and the results provide an interesting description of the innovation process in a specific business sector: travel agencies.

Results and discussion

The centralization of the information obtained allowed the analysis and the formulation of relevant conclusions regarding the respondents and the objectives of the research. The identification questions focused, on one hand, on aspects related to the organization, and on the other hand, on aspects related to the respondent. Data analysis and the comparison with the information provided by the National Statistics Institute regarding the number of employees of Romanian travel agencies revealed that the research is objective. According to research results, most organizations are small enterprises (91.5%). For year 2016, there were registered 2391 agencies with less than 10 employees, meaning 93.7% (INS, 2018). Medium-sized companies present the same value for both data series (5.8%), while in the case of big companies, the percentage covered by the research was of 2.8%, compared to 0.7% at national level. Regarding the age on the market, there are two intervals, „1-5 years",

with about half of the total number of answers, namely „over 10 years", for about one third of the total number of answers. Most researched agencies are tour-operators (77.5%). Their activity is more complex than that of reseller ones, innovation being more visible in their case. As a consequence, the interest in completing the questionnaire goes further towards them. Thus, we can have a reason for the difference between the percentage of tour-operators and resellers registered in the research and those resulting from the statistical analysis (77.5% compared to 38.4% - tour operators, 22.5% and 61.6% resellers). It is worth mentioning that, at the time of the research, Romanian legislation classified agencies as tour-operators and resellers. Currently, the law considers tour-operators to be – „organizing travel agencies", while resellers are considered to be „intermediate travel agencies" (Romanian Government, 2017). In addition, Eurostat (2017) has another approach, classifying this type of economic agents in tour-operators and travel agencies (corresponding to „resellers" or „intermediaries"). Another question targeted the specialization of travel agencies. In a very tumultuous market, with often modest profit margins, firms are tempted to engage in a mixed activity (56.3%), compared with 43.7% declaring to be specialized on outgoing or incoming.

Regarding the first objective of the research, that of identifying the innovative behaviour of Romanian travel agencies, it was noticed that 73% of the agencies have implemented innovation-related objectives, which means that managers are aware of its role. As reasons for encouraging this activity, there have been mentioned first those related to the client (28.4% - the desire to improve customers' satisfaction level, and 26.5% - the need to improve the tourism products and services offered). In addition, the respondents were also concerned about improving the company's financial results (19.1%). The prioritization of the client, compared to financial interests, shows a maturity of the market, in the sense that the delivery of a quality product and service is directly linked to customer satisfaction, which will be later reflected in the results. It is obvious that managers are becoming more aware of the role of the client as main actor in a competitive market. Moreover, there is a cause and effect relationship between innovation and competitive advantage, 93% of respondents agreeing to this. In other words, innovation becomes a means by which travel agencies can differentiate themselves on the market. Concerning the market competition on the innovation activity, the respondents were less firm, less than half choosing „somewhat agreement" and „complete agreement". Most of them (35.2%) opted for „somewhat agreement". The same result is indicated by the weighted arithmetic mean of all the answers obtained – with a value of 3.42, suggesting that in the case of the Romanian travel agency market, the competition in terms of innovation exists, but is not strong. Overall, analysing the obtained information, one can conclude that Romanian tourism agencies are developing innovative behaviour. Out of the proposed options, those that scored the highest mean for each type of innovation are shown in table no. 1.

Table no. 1. Main ways in which innovation is achieved

Innovation	Type of actions	Mean
marketing	In our agency, new methods and promotional tools are always being sought.	**4.13**
process	Within our agency, efforts are continuously being pursued in order to innovate in the service sales process.	**4.04**
managerial	In our agency, we constantly seek to identify new strategies to ensure the organization's success.	**4.01**
products and services	Compared to other existing services on the market, the products/services developed by our agency offer more benefits to customers.	**3.99**

	We constantly add new products/services to our existing offer.	**3.99**
organizational	Our agency is constantly seeking to join various associations, alliances or collaborative structures in the tourism industry.	**3.42**

It is interesting how the means are close to value 4 (agreement) for aspects related to intrinsic activity. The scoring of how agencies relate to each other or with other associative structures is lower, indicating a relatively lower level of collaboration. However, networking is an important information base, including small companies. The principle of collaboration and association proves useful even in a market where players are small firms. In order to see on what areas the innovation activity of Romanian travel agencies is focused on, we will present the results obtained for each five types of innovation proposed in the questionnaire.
Considering the product and service innovation, respondents believe that their offer is more beneficial to customers than that of competitors and stress the concern for its diversification (as can be seen from table above). Thus, the desire to improve the customer satisfaction stated as a main reason for setting innovation related objectives finds its applicability. The results show the lowest score (3.23) for the statement: "In general, our agency is the first one on the market to offer a certain product/service". This is normal in the case of resellers, since they do not design the products and services, but only resell them. Considering the impact of the offer on consumers, the score again reveals a certain reserve of the respondents. The justification is also given by the absence of a complex analysis conducted by agencies, aimed at proving the impact products have on customers, all the more taking into account a substantial change.
Process innovation is more relevant, in descending order, for the sale of services, production and operational systems (4.04, 3.9, and 3.63). In a world where concepts of creativity and innovation are not just fashionable, but become a necessity for survival, efficiency and, of course, profitability, travel agencies, selling dreams and partially intangible products, must be ingenious. The development of the Internet and technology has facilitated contact between agents and customers, on one hand, but has also endangered their activity. 21st century tourists (obviously, not all) choose to organize their holidays themselves, thus bypassing the agencies' services. How can you sell your products and services? How do they reach the customer and motivate him to buy? Some agencies resort to discounts often criticized by the market, others associate their products with the image of personalities, bloggers or vloggers, aiming to sell in a demanding and highly competitive market. Firms are also paying attention to how the production process can be more efficient. Often, a lot of information is needed in order to make a tourist product. They are working with different suppliers, whose seriousness is very important. Furthermore, air fares are extremely volatile. The faster the production process, the more the product can be sold at a more attractive price. The offer of travel agencies can also be a consequence of the request expressly launched by the client. In this situation as well, it is important to be operative, to respond appropriately to the demand, but also to understand the needs correctly.
Marketing innovation is a concern for Romanian travel agencies, seeking new methods and promotional tools. Over 87% of respondents agreed and completely agreed with this item. Conscious of the role of customer loyalty, employees are concerned about this, always looking for new ways (figure no. 1).

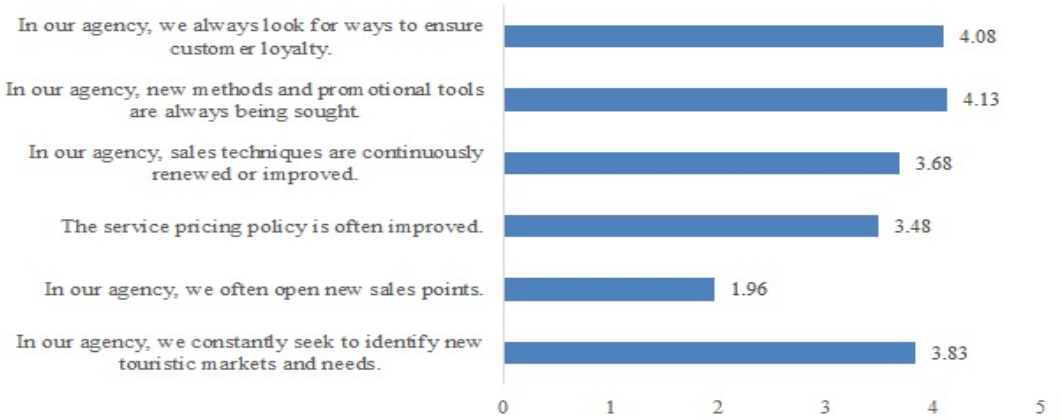

Fig. no. 1 Behaviour regarding marketing innovation

A score of 3.83 determined for the option of identifying new touristic markets and needs reflects firms' interest to develop, to find niche offerings, as well as demand. The Romanian travel agencies market is dominated by a few big players and many small and very small players. In this context, it is understandable the score of 1.96 related to the opening of new sales points. This marketing innovation tool is not seen as feasible by firms, with only 11% of them agreeing to it, while other 14% were „undecided". Opening a new office involves costs related to space rent, current expenses, and wage costs etc., decision makers preferring another use for the money.

In terms of managerial innovation, the four proposed assumptions have roughly the same score (figure 2).

Fig. no. 2. Behaviour regarding managerial innovation

Managers are naturally concerned about the company's success, looking for strategies to achieve performance indicators. Special interest is also given to employees. In an industry where man cannot be replaced entirely by machines, employees are the ones to make the difference. On their promptness, seriousness and smile (whether physically or detached from an e-mail), often depends the success of tourism businesses. Managers cannot neglect this aspect. That is why innovation at this level is also reflected in issues related to loyalty or improvement of work organization.

The last type of innovation proposed in the research is related to organizational innovation. For this there were registered the lowest scores. Thus, the interest in joining associations, alliances or collaborative structures in the tourism industry is still moderate. An even lower score (2.1) is obtained by the item „our company wants to be a franchisor". Of course, while talking about small businesses, this is not necessarily a priority.

Regarding objective no. 3, it may be argued that in agencies there is an interest for new ideas, an increased one for 55% of the respondents and a moderate one for 35%. Thus, travel agencies can be included in the category of firms that are concerned about novelty, setting the grounds for a culture for innovation.
This research has clarified important aspects related to the innovation phenomenon in Romanian travel agencies, contributing to the development of a relatively scarce literature on this niche. However, the authors are aware of its limitations: despite the complex approach of sending the message to all agencies in Romania, the number of respondents is considered to be rather small. Thus, for future research, it will be attempted to increase it, while attempting to respect the proportion of reselling agencies (intermediary) and tour-operators (organizers).

Conclusions

Different authors have discussed various factors as the driving forces for innovation in small and medium-sized enterprises in the tourism industry, arguing that the key factors for innovation are (1) entrepreneurial characteristics, (2) networking, (3) technological development and (4) the environment. The main objective of this article was to highlight the innovation-related behaviour of Romanian travel agencies. Following a comprehensive research, addressed to all travel agencies in the country, an outline of the innovative actions conducted by companies in the tourism sector has been highlighted. Although travel agencies declare in almost three quarters of the cases that they set organizational goals related to the implementation of innovations, the research has highlighted the fact that in this business sector, innovation is still not considered an activity that makes a substantial difference from the competitive advantage point of view. In particular, travel agencies in Romania are investing efforts in developing new products and services that offer more benefits to customers, their attention being drawn especially towards marketing innovations (mainly identifying new methods of promotion and improvement of customer loyalty). Equally, travel agencies are least investing in the development of organizational innovations, despite the fact that this activity sector requires the creation of a network of strong partners and collaborators. Innovation research for the tourism industry needs to be further developed. In the long run, the growth of the tourism sector will continue to be strong as long as investments and development take place in an open and sustainable manner. The tourism industry can achieve more by adopting travel growth policies that bring fair benefits by stimulating business innovation. In this way, not only can we expect the sector to support over 380 million jobs by 2027 (WTTC, 2017), but it will continue to increase its economic contribution.

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ASPECTS REGARDING THE USE OF PERSONAL DATA ON THE INTERNET

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Abstract

A major dilemma raises with the future link between the use of personal data and the electronic commerce environment. Practically, there is an acute need of delimiting the personal data (a right that each of us should have) and the use of it on the Internet by different organizations by a major reconstruction, against reform efforts. The organizations started to use the GDPR as a cliché for creating a better image worldwide and being more friendly. The real question is how far would an electronic commerce shop go in order to maximize their revenues. How much does the customer know about the processing of its personal data and how much does he or she want to know? In order to respond to some of these questions a survey has been conducted and the results are presented in this article. The people between 18-45 years old are more likely to give up on their personal data in order to receive the comfort of purchasing online or even just for some promotions. As anticipated, respondents over 45 years old are declining these type of offers. Still, there is a large percentage of people that are ready to give their personal information on the Internet for nothing.

Keywords

Electronic commerce, personal data, consumer protection, digital consumer, electronic marketplace.

JEL Classification

Q55, L81, M16

Introduction

There are nowadays many types of business models when you speak about electronic commerce. We concentrate in this article on the virtual shop e-commerce business model, as defined by Onete et al. (2018). "A virtual store is implemented through a website. In the first phase, the site is designed to promote the goods and services offered by the company. Additionally, you can add placement or take-over facilities, and the extended option also includes online payments (by card or other electronic options)." The most of these online shops use personal data in order to complete the process of purchasing and to deliver the selected goods or services. Other companies use the personal data in order to personalize the offer for its customer and to have a better marketing strategy by applying these info as a competitive advantage on the market.

The right to the protection of personal data as well as the right to private life, are considered at European Union level, fundamental human rights. Unlike the European Union, in the

United States of America, the right to the protection of personal data is considered a consumer right.
In the European Union, for all bodies (legal persons) and for those who offer goods and services on the territory of the European Union or to citizens of the European Union, the interpretation and implementation of the legal rules on the protection of personal data has become mandatory from 27 April 2016, the day on which the Regulation (EU) 2016/679 was adopted (C. Tikkinen-Piri, et al., 2018)
In this context, in which personal data of individuals are collected and processed in companies and institutions from European Union, awareness of individuals is a core element in the big data era and the data-driven economy: it is the optimal balancing between fostering innovation (through the free flow of data) and protecting individuals' human rights (Malgieri & Custers, 2018).
Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of individuals with regard to the processing of personal data and on the free movement of persons of these data and repealing Directive 95/46 / EC (General Data Protection Regulation), was published in the Official Journal of the European Union, series L 119/1.

Research Methodology
The methodology chosen for this article is a quantitative one: a questionnaire based on the non-probabilistic snowball technique sample and the self-selecting sampling. The four stages of this process are: identifying the sample frame from research objectives, deciding on a suitable sample size, selecting the appropriate technique and checking that the sample is representative for our research.
To check the level of awareness with regards to e-commerce and how many consumers opt for buying online, a questionnaire has been applied. In order to calculate the right sample and to be sure it is correct for our research, the representative population is 3 Million people living in Romania, with a confidence level of 80% and a margin error of 5%. Applying the sample size formula on the current data, the minimal number of respondents is 164, so that we can produce accuracy on our results. In the end, a number of 165 people have responded from proper initiative.
The number of addressed questions was 19. The questionnaire has been auto administrated and it was shared on Facebook international groups (Europe, Romania) and on What's App personal groups.

Table no. 1 General info about the respondents

Average Income / Age	Gender: Female	Male	Total
<1000 RON	**14**	**2**	**13**
18-25 years	10		8
> 45 years	1		1
< 18 years	3	2	4
1001-2500 RON	**23**	**6**	**26**
18-25 years	19	3	21
26-35 years	3	2	3
36-45 years	1		1
> 45 years		1	1
2501-4500 RON	**29**	**11**	**34**

18-25 years	8	2	9
26-35 years	15	7	17
36-45 years	5	2	7
> 45 years	1		1
No monthly income	**10**	**8**	**18**
18-25 years	10	6	13
> 18 years	3	2	5
Over 4500 RON	**38**	**23**	**51**
18-25 years	9	4	11
26-35 years	12	11	21
36-45 years	11	3	8
< 45 years	6	5	11
No response	**1**		**1**
< 45 years	1		1
Total	**115**	**50**	**165**

Source: Own processing

Results and Discussions

Buying goods or services over the Internet is a very popular activity nowadays, according to the Eurostat. The e-commerce sector created a new way on how businesses should act and react to the populations' need. The organizations aligned to the new desires of their consumers and created platforms in order to meet their need for comfort, but also efficiency. (Vargas, Budz, 2019) The electronic market sector is one of the impacted areas, where companies started at first just to have a page in online, but in the last years also to sell their goods over the Internet. This sector is the one that keeps the hybrid commerce at the top. Almost no offline store gave up on their physical store in order to keep only the online form of the shop. The pure play concept (meaning they sell exclusively through the Website) is not an option for this sector (Onete et al., 2018).

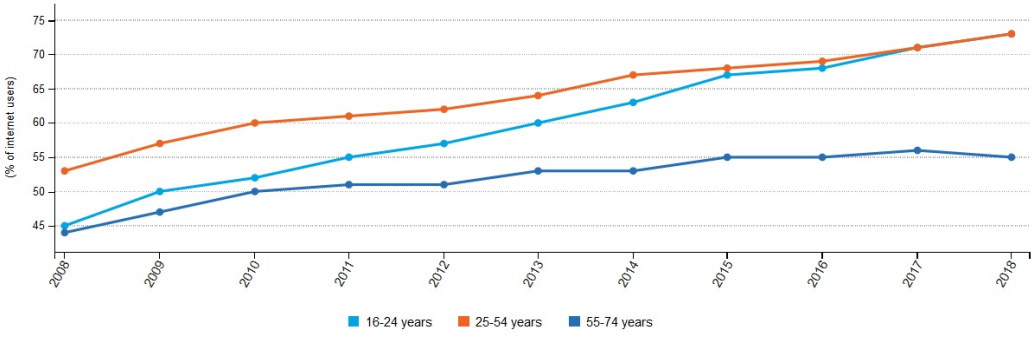

Fig. no 1 Internet users who bought or ordered goods or services for private use in the previous 12 months by age group, EU-28, 2008-2018

Source: Eurostat - https://ec.europa.eu/eurostat/statistics-explained/index.php/E-commerce_statistics_for_individuals

Analyzing the results of the questionnaire, only 1.39% of the respondents have never purchased good or services from the online stores. Surprisingly, one of the two respondents that never bought online is aged between 26-35 years old.

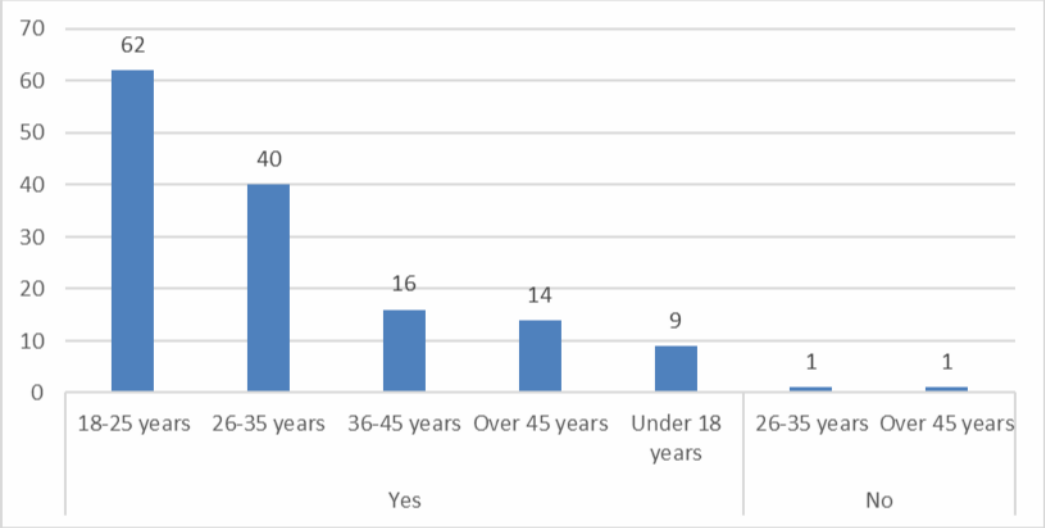

Fig. no. 2 Number of respondents that bought online
Source: Authors' processing

We gathered an interesting database of what online services are most common in requesting personal data upon the customers. Intriguing is the discovery for what platforms are the customers more willing to give their personal information. One good example is HBO Go or Netflix. As seen in the graphic below, customer agree on giving up on their name, e-mail, phone number and even the information from the credit card for one free month on these platforms. The comfort that these types of services is providing to its users is worth all these personal data according to the figure 3, plus the data they are gathering during the use of these platforms.

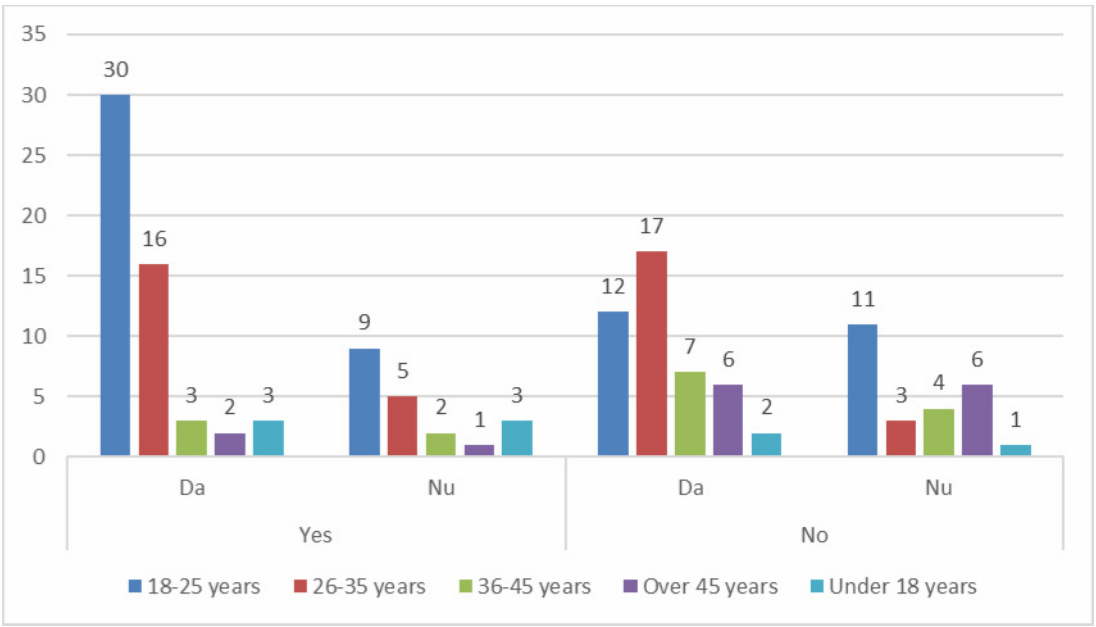

Fig. no. 3 Netflix/HBO Go free access vs. personal data
Source: Authors' processing

Almost 70% of the respondents are ready to give up on some of their personal data in exchange of one free month on Netflix or HBO Go. Most of these are between 18-25 years old. The people over 45 years old are in majority when declining this type of offer.
Even more people are willing to provide the personal identity card if the company requires it by changing or returning a good. This measure is illegal according to the GDPR because such an action is not proportionate to the requested service. The company has no right of requesting such a document and doesn't need to have a copy of your ID card only to change or to return a purchased good. Nevertheless, consumers are not aware of these changes and don't understand the value of their personal data. As seen in the figure 4 below, 69% of the respondents will submit the identity card for this action being unaware that they have the European right to decline it. The results demonstrate that those who are more likely to uncover personal data declare a greater disposition to use privacy controls (C. Prince, 2018).

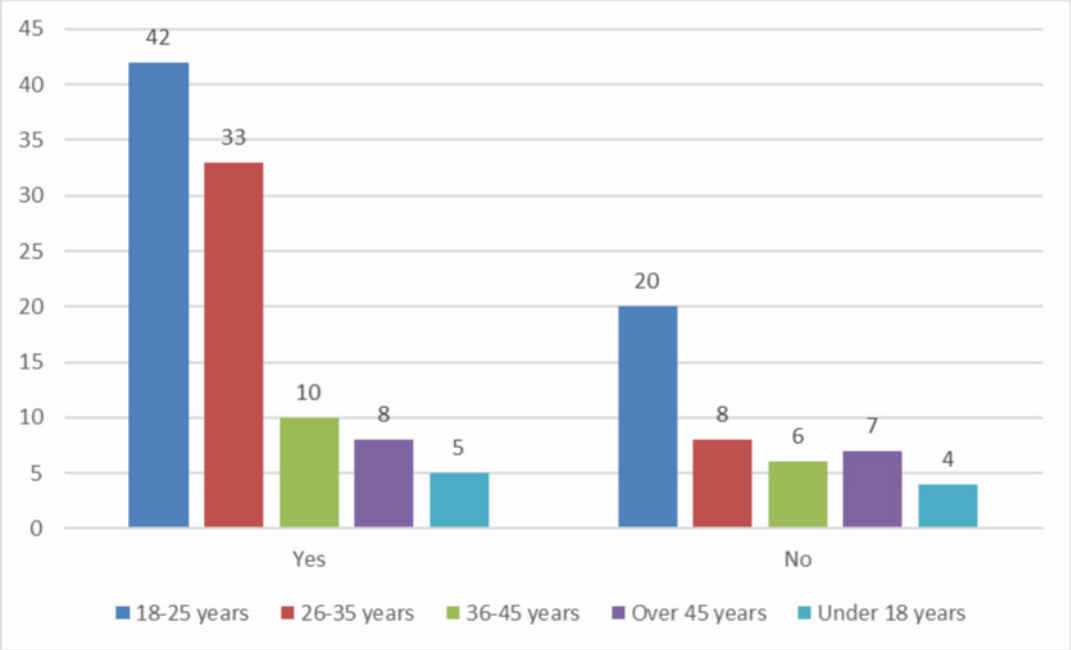

Fig. no. 4 Returning online goods vs ID card
Source: Authors' processing

Conclusions
The e-commerce is based on the idea that online purchasing has the potential to reduce the cost of an offline store and increases equity in the community (for example, by supporting communities that are performing less economically efficient but delivering local benefits). This concept relies more on the comfort of the contemporary individual and his lack of time, but a thing is for sure, everyday people generate and share personal data (Schudy & Utikal, 2017).
The study shows that most of the respondents up to the age of 45 have higher incomes but tend to shop more online because of the lack of time, but also because it is more convenient. There are several advantages by purchasing online like comparing features of more products or a much bigger transparency regarding the prices. However, the real "price" we pay by providing such essential information about ourselves is nowadays unknown. Maybe in the future, the personal data will have an economical value and this type of shopping will be more carefully chosen.

Table no. 2 Internet Influence over personal choices

Influence Google vs Social Media on purchasing decision dependent on Gender

Sex		Influence of Google	Influence of Facebook/Instagram
Feminin	Mean	3.46	3.52
	N	97	97
	Std. Deviation	1.225	1.200
Masculin	Mean	3.17	3.13
	N	46	46
	Std. Deviation	1.198	1.310
Total	Mean	3.37	3.39
	N	143	143
	Std. Deviation	1.220	1.245

Source: Authors' processing

The table shows us exactly the fact that consumers are more influenced than ever on their shopping decision from platforms like Google through the Google Ads systems, but the tendency is to influence the decision though Facebook, Instagram and other social media platforms.

An anticipated result is that the women are more likely to be influenced by social media and Google because they are more responsive to the emotional stimuli from the ads and enjoy them even more.

This new approach of e-commerce is a novelty for both the consumer who does not know the real value of price they are paying when buying goods and services online but is willing to pay any amount for a more comfortable shopping. On the other hand, many of the electronic commerce providers have no idea about the value of the personal data they are gathering from its customers and even after the GDPR was established most of them doesn't have secure databases or an instructed data protection office. Still, the desire of more convenient products has become an increasingly important consideration for consumers leading to several innovations (European Commission, 2014).

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CONSUMER PERCEPTION REGARDING THE ROLE OF AI: A DISCRIMINANT ANALYSIS BASED ON AGE

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Abstract
Artificial intelligence systems are nowadays a must for both companies and individuals. On one hand, individuals easily succumb the pressure and temptation of being constantly connected to their friends and families, by being actively present in the online environment. Moreover, the increased number of disruptive technologies is leading to a world, where certain activities are no longer or very hard accessible for individuals who do not embrace the ongoing shift to smart devices. On the other hand, the companies recognize the opportunities provided by disruptive digitalization and channel most of their efforts into growing their businesses efficiently, by implementing automations where possible. The constant use of technology raises a series of issues that are being addressed in both academic and business communities. The most recent topics which were widely and intensively discussed relate for example to the amount of personal data which is being accessed and shared online. Other topics include trust in artificial intelligence systems or the consumer's preference towards virtual assistants or actual humans for various types of services. This study brings a contribution to the topic of consumer's ability and willingness to adapt to the new redefined ways of living, marked by an aggressive intrusion of artificial intelligence systems in most parts of the everyday life. The study analyses a sample of 252 responses, out of which 161 respondents with ages younger than 40 years and 91 respondents with ages older than 40 years. The results show clear differences between the two groups.

Keywords
Artificial intelligence, consumers, trust, technology, virtual assistants, robots.

JEL Classification
M10, M31

Introduction

Technology has completely changed the business environment and the ways that companies operate. From commerce to e-commerce, from invoicing to e-invoicing, from meetings to video conferences and so on, the relationships with business partners as well as the internal processes have suffered major changes. For instance, the implementation of business intelligence and analytics has become the cornerstone to efficient reporting of critical business data. Companies view business intelligence and business analytics as two different approaches, consisting in technologies, systems, techniques, tools and applications which contribute to an improved decision making process (Chen et al., 2012). Business intelligence refers to databases, architectures, methodologies, applications and analytical tools which

offer support to various decisional tasks (Turban et al., 2011), while business analytics is an umbrella term that includes data mining and quantitative statistical analysis which contribute to a better understanding of key business performance indicators (Chen et al., 2012; Davenport, 2010).
Innovations are also being implemented in the accounting department (for eg. e-invoicing, e-payments), in the marketing department with the increasing use of neuromarketing techniques, in sales or even production departments. Companies are completely redefining their value proposition and are creating competitive advantages through well thought market launch strategies, which gradually introduce the consumers to new types of services or products.
The commercial success of an innovative product or service is strongly impacted by the market launch strategy (Chiesa and Frattini, 2011) which needs to clearly emphasize the benefits of the new solution (Lee and O'Connor, 2003). The aim is to allow gradual social learning of the artificial intelligence system (Debruyne et al., 2002; MacVaugh and Schiavone, 2010). However, issues arise when the consumers mistrust towards disruptive innovations is being neglected. Even when the technology behind the product or service is highly complex, the consumer's experience must be intuitive and the interface must be user friendly. Studies show that consumer's tendency to accept or refuse using smart solutions based on artificial intelligence is strongly related to their first interaction with them. If a system is not initially understood, then the context of use and its purpose will remain unclear, hence the possibility to be used in the future will consistently drop (Hornbaek, 2005). This kind of failure creates big challenges for the companies which are connecting their products, creating a complex ecosystem out of them.

Literature review
Digitization, machine learning, artificial intelligence, robotics, as well as information and communications technology are completely transforming our times. The time people spend connected to technology is almost surreal. The fact that certain activities have begun to not only require, but impose the use of applications or online networks brings a big contribution to the situation nowadays (eg. ordering an uber), as technology and internet are slowly becoming indispensable.
The customer experience while using technology is merely impacted by the company's ability to provide services which fit the individual needs. From theory to praxis, there are currently discussions in regards to the ways in which the companies are allowed to store and use personal information of their customers for the sole purpose of offering appropriate service packs.
While sharing private data has become a mainstream act on social media platforms, the question is "how much is too much". The latest debates focus on the role of each party in assuring a fair trade between companies and consumers. On one side, there are measures taken which regulate the processing of the collected private data. The General Data Protection Regulation (GDPR) is leading to changes for companies, which need to offer their consumers an insight into the use of their private information. The regulation states that the consumers should be empowered with the right to find out which personal data is stored by the companies, in which way is it being processed and who can gain access to it. Overcoming this barrier is the new challenge companies are dealing with, as they need to make sure that consumers can benefit from the same services and access the same data in a satisfactory manner (Presthus, 2012). However, the constant tracking of the customer's every move online is one of the disadvantages which led to the adoption of this regulation, which is looking to prevent the subjections of consumers to stigmatization (Mateosian, 2013).

On the other side, the sole necessity of this regulation is a sign that the individuals should also contribute to their own data privacy, by being more careful with the personal information that they make public or trade in exchange for various offers. Accepting terms and conditions without actually reading or acknowledging them is another example in this case. The fact that this intrusion is made possible by applying artificial intelligence systems and algorithms is affecting consumer's trust in the idea of artificial intelligence. A study showed that the consumers reject the idea of using AI systems for automate decision-making activities such as taking loans or giving grades. Furthermore, they do not fancy the storage of personal sensitive data by artificial intelligence systems either, as this can be shared with third parties or can be fed into algorithms which enable product recommendations. The study was conducted in Norway and concluded, that consumers perceive the storage of personal information in different ways, depending on the type of data collected (Presthus and Sorum, 2018).

Another study conducted by Pelau & Ene (2018) showed that the more independent an AI system looks like, the less chances of being accepted it has. The results showed that consumers are reluctant when it comes to anthropomorphized robots, as they give the impression that they have too much autonomy. However, according to Jamson (2013), an artificial intelligence system becomes truly effective, only if the user can give it some degree of control. For this to happen, a certain level of automation should be defined, which can assure an efficient collaboration between people and machines, as the human behavior is carefully shaped through incentives and communication with the consumers (Jamson, 2013).

The matter of trust in automation is currently one of the most debated subjects in the research environment, as in this context of innovation the perceived risk is a central factor which can determine the resistance or adoption of a new technology or system based on artificial intelligence. As every new product brings with it uncertainty and risks, consumers' reluctance towards it, is likely to arise (Nienaber and Schewe, 2014). One of the main factors which influence the perception of risk is the novelty characteristic (Kleijnen et al., 2009).

In the context of innovation, the perceived risk is seen as the uncertainty regarding a possible failure of a new product, which can be due to malfunction (Nienaber and Schewe, 2014). For the artificial intelligence field of study, perceived risk is attributed to a lack of control over a machine or automated process (Castelfranchi and Falcone, 2000). This lack of control can have a serious impact on the consumer's level of trust towards artificial intelligence systems (Pelau et al. 2018). Moreover, consumer's decision to adopt a certain technology is not only taking place on an individual level (Rogers, 2003). Studies show that the main factor which influence the adoption of a new technology is utility, as both acceptance or rejection are mainly influenced by the interaction between the social context and the new technology (MacVaugh and Schiavone, 2010). Besides, the use of new automated processes can influence the energy costs for the consumers (Pelau & Acatrinei, 2019).

According to McKnight et al., trust in automation is mainly influenced by its predictability. He emphasizes the fact that if individuals can anticipate the future behavior of a technology, then this technology will be more easily trusted (McKnight et al., 2002). Especially important is the initial trust, which plays a crucial role in the acceptance process of a new technology. If a system is not initially trusted, then it will not be used to begin with. Therefore, the initial trust is a critical condition which can afterwards evolve into dependability, meaning that the artificial intelligence system has a consistent behavior which enforces constant utilization. As a finality, trust and dependability can shift to faith, described as the moment in which the consumer actually relies on the technology (McKnight et al., 2002).

Research methodology

The objective of this study is to analysis the demographic factors that influence the customer's behavior related to artificial intelligence systems. The 24 items have been included in survey with multiple topics, which has been carried out in December 2018-January 2019. The sample consists of 252 respondents from urban areas. The reliability of the data is given by the Cronbach's Alpha=0.933 for the dataset related to artificial intelligence.

This article focuses on the differences of perception depending on age. Two groups were created out of the sample, based on the respondent's age: the first group (defined as G1) consists of people younger than 40 years and the second group (defined as G2) includes people older than 40 years. The study is based on 252 valid responses. These responses belong to 161 respondents younger than 40 years (G1) and 91 respondents older than 40 years (G2). For the interpretation of the results a discriminant analysis was applied with the help of the SPSS 20. The significant differences between the two groups will be discussed.

Results and discussion

The results of the analysis show that there are relevant differences between the two age groups. From the 24 items which were analyzed, 22 show significant differences, having $p<0.10$ and only 2 items show similarities for the two groups. The results are presented in Table 1.

Table no. 1 Discriminant analysis values based on grouping variable age

Item	Mean G1	Mean G2	SD G1	SD G2	F (1,250)	p
I prefer applications I use to be customized for my personal needs, which is why I create my own user.	5.24	3.14	1.72	2.10	73.743	0.00
I often personalize my phone and laptop as I please. Example: themes, wallpaper, password protection.	5.25	3.05	1.78	2.23	73.092	0.00
I constantly use various forms of AI such as smartphones or smart banking.	6.01	4.26	1.39	2.08	63.526	0.00
I'm curious about the new technologies and I want to try them out	5.40	3.82	1.46	1.85	55.374	0.00
I think I'm spending more than half a day connected to technology: laptop, PC, smartphone.	5.55	3.77	1.60	2.29	52.292	0.00
I'm comfortable solving various administrative tasks with the help of technology: bank transfers, data updates, initiation or termination of contracts.	5.25	3.55	1.59	2.14	51.505	0.00
I'm open to change and I'm adapting relatively quickly to new technologies	5.63	4.21	1.38	1.92	46.36	0.00
I feel comfortable creating an account for each application, using my personal data: name, email and phone number.	4.47	2.78	1.88	1.94	45.599	0.00
I believe that the automation process contributes to making processes more efficient	5.68	4.43	1.30	1.98	36.451	0.00
Smartphones are indispensable to various professional activities.	5.24	3.81	1.71	2.28	31.341	0.00
I prefer using virtual assistants to solve minor problems than waiting on the phone until I'm being connected with a call center employee	4.27	2.96	1.75	2.05	28.671	0.00
I consider that technology makes many processes	5.78	4.87	1.23	1.65	24.816	0.00

more efficient and helps us save much time						
I think robots and artificial intelligence systems will ease my professional activity	4.48	3.38	1.68	1.99	21.576	0.00
I think robots will ease my home activities	4.60	3.55	1.76	1.94	19.3	0.00
I think that the smart solutions adopted by the companies are quite user friendly and can perform the same tasks as the employees, only more efficiently. Examples: Andreea-Vodafone robot, George-BCR robot.	3.95	3.04	1.64	1.81	16.505	0.00
I have more confidence in systems that use robots	3.50	2.67	1.60	1.56	15.753	0.00
I like searching for packages of services directly from my laptop / phone and having programmed assistants to consult with, rather than actually going to the company headquarters or contacting the responsible persons by phone. Example: going to the bank, to the lawyer, to the tourist agencies.	4.09	3.15	1.78	2.10	14.195	0.00
I think it is good that some simple work tasks can be replaced with artificial intelligence systems	4.79	3.99	1.70	1.66	13.062	0.00
I think that in 50 years a lot of the usual activities will be done by robots	5.68	4.93	1.54	1.71	12.442	0.00
I like receiving recommendations based on my search history. For example: songs, movies, pictures or videos on specific themes	4.53	3.95	1.79	2.07	5.637	0.02
I like receiving personalized emails from various applications, even if I know it's a general email.	3.69	3.19	1.85	1.97	4.106	0.04
I am reluctant to delegating tasks to robots	4.00	3.58	1.82	1.98	2.86	0.09
I think robots and artificial intelligence systems have a lower error rate than people	4.52	4.20	1.67	1.82	2.054	0.15
I think a robot can be a human's good friend	2.75	2.65	1.70	1.69	0.19	0.66

Observation: G1 are people younger than 40 years; G2 are people older than 40 years
Source: Own research results

The behavior which shows the highest differences is the preference for customized applications (F=48.816, p=0.000). People younger than 40 years prefer customizing their apps for their personal need, including creating their own user on certain apps (M_{G2}=5.24), while older people prefer the opposite (M_{G1}=3.14). This is also confirmed by the item with the second highest difference, which describes the preference of consumers to personalize their phones or laptops, matching them with their own styles (F= 73.092, p=0.000), where the mean of perception is higher for the young people (M_{G1}=5.25) in comparison to people older than 40 years (M_{G2}=3.05). The same preference for customization is also different in the case of the item related to believing that the automation process contributes to making processes more efficient (F= 45.599, p=0.000), which shows that younger people are feeling more comfortable sharing personal data while creating user accounts on different platforms (M_{G2}=4.47), whereas older people would rather avoid sharing personal data like their name, email or phone number (M_{G2}=2.78). Receiving online recommendations personalized emails based on the search history were two topics where the difference between the two age groups was still relevant, but on a lower rate (F_{20}= 5.637, p_{20}=0.020; F_{21}= 4.106, p_{21}=0.040).

A second behavior that shows significant differences is the general degree of tolerance towards artificial intelligence systems. People younger than 40 years have constant interaction with various forms of AI such as smartphones and smart banking (F= 63.526, p=0.000, M_{G1}= 6.01) in comparison to older people (M_{G2}=4.26). They tend to spend more than half a day connected to technology (F= 52.292, p=0.000, M_{G1}= 5.55) and believe that

automations are making processes more efficient (F= 36.451, p=0.000, M_{G1}= 5.68), in opposition to people older than 40, which spend less time online (M_{G2}=3.77) and do not consider that automations are strongly related to efficiency (M_{G2}=4.43). This is also confirmed by the F_4= 55.374, which shows that the G1 group is more curious about new technologies and wants to try them out (M_{G1}=5.40), while the G2 group, representing people over 40, had a smaller mean for this item of M_{G2}=3.82.

When asked about the third behavior, mainly if technology and robots offer more efficient, time-saving solutions to work or home activities, the younger group agreed (F_{12}= 24.816, F_{13}= 21.576, F_{14}= 19.300, $p_{12,13,14}$=0.000) having higher means $M_{12;G1}$=5.78, $M_{13;G1}$=4.48, $M_{14;G1}$=4.60), while the older group showed a lower tolerance towards artificial intelligence usage ($M_{12;G2}$=4.87, $M_{13;G2}$=3.38, $M_{14;G2}$=3.55). However, there are few points about this topic regarding the tolerance towards AI where the two groups showed similarities in their opinions. Both groups have stated that they are reluctant in delegating tasks to robots (F= 2.860, p=0.09 very close to 0.10, M_{G1}= 4.00, M_{G2}=3.58) and do not agree with the idea that a robot can become a good friend to a human being (F= 0.190, p=0.66>0.10, M_{G1}= 2.75, M_{G2}=2.65).

The fourth and last behavior that was checked through this study was the preference towards artificial intelligence forms instead of human interaction for solving daily activities. While younger persons state that they are feeling comfortable solving various administrative tasks like bank transfers, data updates, termination of contracts with the help of technology (F= 51.505, p=0.00, M_{G1}= 5.25), this does not apply to older people (M_{G2}= 3.55). The same difference can be noticed as the subjects were asked if they prefer using virtual assistants to solve minor problems than waiting for the phone until they are being connected with an actual call center employee (F_{11}= 28.671, p=0.00). The mean for the G1 group was also in this case higher (M_{G1}= 4.27) than the mean for the G2 group (M_{G2}= 2.96), which means that younger people prefer talking with a robot than having to wait for a conversation with a human being.

The results also show that younger people think that simple work tasks should be replaced with artificial intelligence systems (F=13.062, p=0.00, M_{G1}= 4.79) and have more confidence in robot-based systems (F=13.753, p=0.00, M_{G1}= 3.50), while people older than 40 do not fancy the idea of involving artificial intelligence systems in their daily routine (M_{G2}=3.99) and do not experience the same level of trust towards robots (M_{G2}=2.67).

Also an important difference is the extent to which people allow artificial intelligence to come between themselves, as buyers, and companies, as sellers. People younger as 40 tend to believe that the smart solutions adopted by the companies are quite user friendly and can perform the same tasks as the employees, only more efficiently (F=16.505, p=0.00, M_{G1}= 3.95), while people older than 40 had a different lower mean (M_{G2}=3.04) when asked about this preference. Almost the same difference (F=15.753, p=0.00) appeared when the two groups were asked if they prefer searching packages of services directly from their smart devices and have programmed assistants to consult with, rather than actually going to the company headquarters or contacting the responsible persons by phone. The G1 group agreed more with this idea (M_{G1}=4.09), while the G2 group showed more reluctance towards this course of action (M_{G2}=3.15).

Similar behavior and perceptions for the two age groups can be observed for the item in which consumers think robots and artificial intelligence systems have a lower error rate than people. In this case, both groups agree with the fact that robots and AI systems have a lower error rate than people.(F=2.054, p=0.15>0.10, M_{G1}=4.52, M_{G2}=4.20).

Conclusions

The study analyzed four main subjects: the preference for artificial intelligence systems customized for consumer's own needs, the overall tolerance towards technology and innovations, the level of acceptance and trust in artificial intelligence and the preference for artificial intelligence forms instead of human interaction for solving daily activities.

The results showed that in almost all cases people younger than 40 are more open-minded and more prepared for change and adaptation to new technologies, while people older than 40 are more reluctant to artificial intelligence and do not trust the efficiency that it may bring with it. One of the reasons why older people do not recognize the benefits of AI could be related to the fact that they do not experience the same curiosity and do not want to try out new technologies, in order to understand the opportunities that they may offer. This idea can be related to the theory of Lee and See (2004), which states that if a system is not used, then the initial trust can never grow. The same theory was mentioned by McKnight, which states that trust can only shift to dependability and then to faith, if the consumer's initial trust is high enough to determine him to make use out of the artificial intelligence system and allow himself to rely on it (McKnight et al., 2002).

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AN OVERVIEW ON THE DEVELOPMENT OF GREEN ECONOMY IN THE HOTEL INDUSTRY

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Abstract
In recent years, the notion of green economy has become of great interest for both academics, public authorities and business owners. As a result, the paper offers a thorough literature review on green economy and its implementation in the tourism industry, focusing afterwards on eco-labelling in hospitality by addressing the implementation of the Green Key award in the European Union and its possible impact on the international tourism activity and green economy development. The research shows a moderate connection between the spread of the Green Key eco-label, international tourist arrivals and Global Green Economy Index. The paper discusses the implications of these findings and offers pathways for further research into the subject.

Keywords
green economy, green hotels, sustainable development, economic growth, eco-label

JEL Classification
L83, Z32, Q56

Introduction

Over the last decade, the concept of green economy has become of interest to both public authorities and the business community. Introduced in the literature since 1989 (Loiseau et al., 2016), the concept of „green economy" has begun to receive more attention after 2010. The green economy is an „umbrella" concept that attracts more implications to ensure economic growth and employment, efficiency and risk reduction in the use of natural resources (Loiseau et al., 2016). The green economy was initially treated as a new policy and an instrument designed to resolve the economic and financial crisis initiated at the end of 2007 (Speck and Zoboli, 2017), subsequently becoming a strong strategy endorsed by international bodies such as: the European Union, the European Commission (2008, 2010), World Bank (World Bank, 2012), United Nations (through the United Nations Environment Program - UNEP, 2003, 2010), World Tourism Organisation – UNWTO (UNEP and UNWTO, 2012; UNWTO, 2018). For example, the European Union has already adopted a series of measures related to the implementation of the green economy, measures integrated in strategic documents such as Europe 2020 (EC, 2010).

Considering the importance of the tourism industry, the paper focuses on the level of development of the green economy in the hospitality industry, offering a snapshot of its condition in the European Union.

Literature review on green economy in the tourism industry

In the literature there is no consensus on a generally accepted definition for the concept of „green economy" (Bond et al., 2015; Loiseau et al., 2016; Speck and Zoboli, 2017; Brears, 2018), but there is however a common denominator regarding three general objectives that it pursues – improving energy efficiency, developing ecosystem resilience and social equality, „green economy" being in fact an „umbrella" concept that brings together more implications for welfare development, efficiency and risk reduction in the use of natural resources. However, the most commonly used definition in the literature is the one developed by UNEP (2011), that considers the green economy to be resource efficient, with low carbon footprint, socially inclusive, leading to „improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities". In the literature on sustainability, there are even three interrelated concepts (D'Amato et al., 2017): circular economy, green economy, bio-economy. In a broad analysis of the existing literature for the three concepts, D'Amato et al. (2017) indicate that the green economy includes elements common to circular economy and bio-economy, but in addition, it is also marked by a deeper focus on green investments, based on natural resources, environmental conservation and green jobs. The same authors highlight a greater interest in studying green economy in the European Union, the academic community in the U.S. and China also generating valuable research in this field. Focusing on green economy and the way in which business can be developed, Makower (2009) draws attention to the need to define the concept of „green business", as so far there is no conceptual clarification in this respect. Kane (2010) even offers solutions for green business development, from developing an organizational culture to support this transition, to concrete actions related to energy efficiency, water conservation, the use of renewable conservation in several sectors, from production, transport, to the real estate sector.

While discussing about economic development, the tourism industry must be mentioned, as it makes a huge contribution to the modern economic system (UNWTO, 2018): it provides 10% of world gross domestic product, 7% of world trade and 10% of all jobs. At present time, the tourism industry plays a crucial role in the global economy, being a sector that has grown substantially in the past 9 years: in 2018 there was a 7% increase compared to 2017, and in the last 9 years there has been an average annual increase of 4%, the reference being the number of international tourists (UNWTO, 2019).

As tourism has become a pillar of the economy and a chance to prosperity, global organizations have also identified to need for sustainable development of this sector, 2017 being declared the „International Year of Sustainable Tourism Development", the measures to promote sustainability being adopted in „Sustainable Development Agenda 2030". In this context, UNWTO (2018) recognises the need for more efficient use of resources by protecting the environment and developing opportunities for implementing green economy in tourism. All these measures were adopted considering the fact that tourism has a significant impact on the environment, CO_2 emissions from tourism (including one-day trips) being estimated in 2010 at 1302 million tons, accounting for 5% of global CO_2 emissions (Pan et al. 2018). Moreover, tourism's contribution to greenhouse gas emissions is estimated at 5.2-12.5% (UNEP and UNWTO, 2012), the main sectors responsible for this issue being transportation and the hotel industry. Following the scenario of a green economy developed in the tourism industry, the contribution of this sector to GDP would increase considerably while having a positive environmental impact (UNEP and UNWTO, 2012): an

18% reduction in water consumption, a 44% reduction of energy consumption and a 52% reduction in CO_2 emissions.

In the tourism field, the development of green economy is still treated in correlation with the development of sustainable tourism (Gössling et al., 2009; Liburd and Edwards, 2010; Pan et al., 2018). Concerns in this regard start from the development of the „green labelling" process, not necessarily related to the environment, but to the increase in consumer confidence in certain tourism providers (Font and Buckley, 2001). However, linking the green economy to sustainable development is a correct correlation, as the two concepts are not replacing each other, green economy being treated as a way to achieve sustainable development (Brears, 2018) or as a key to an economic development that ensures more jobs and environmental protection (Kenis and Lievens, 2015; Loiseau et al., 2016). In line with the principles of green economy, Smith (2018) mentions the need to implement as many incremental changes as possible – an approach that may be considered obsolete by those who address the issue of global warming and its effects, and Vlad et al. (2016) address the need for implementing an organizational culture that enables hotel employees to change their behaviour and practices into green ones.

These being said, International Tourism Partnership (ITP – an organisation working with the largest hotel groups, aiming to help them collaborate to improve their key sustainability indicators) and Greenview (2017) draw attention to the fact that, world-wide, the hotel industry will have to reduce its greenhouse gas emissions by 66% by 2030 – compared to the level registered in 2010 and by 90% by 2050. Regarding the goal set for the 2030 time horizon, the ITP and Greenview report (2017) indicates that, on average, a 50% reduction in greenhouse gas emissions from accommodation units can only be achieved through internal hotel-based measures (increasing energy efficiency, using renewable energy and other mechanisms), while the rest of 16% reduction can be achieved through measures and policies adopted by each country, without the involvement of the hotel sector. Thus, major hotel groups such as Marriott International (2017), Hilton, Intercontinental Hotels Group (2018), Wyndham Worldwide (2018), and Accor Hotels (2017) already undertake alignment with new environmental standards in their social responsibility reports they publish annually.

The development of green hotels is still at an early stage, Bohdanowicz (2009), International Union for Conservation of Nature and Natural Resources (IUCN) and Accor (2010) and Smith (2018) providing several examples of best practices in the industry by mentioning accommodation units in France, Italy, Spain, UK, Netherlands, U.S.A., Ecuador etc. The authors advocate for more transparent communication of hotel energy consumption and waste, addressing the role of the consumer in reducing emissions from hotels. IUCN and Accor – the largest hotel group at European level (2010) have made efforts even in developing a guide that provides concrete measures through which hotels can integrate biological resources in their work, respecting biodiversity, offering solutions for both hotel restaurant services (the use of sustainable resources), as well as for the spa services and accommodation facilities (responsible renovation of accommodation establishments, responsible use of wood for the expansion actions or for furniture, promoting recreational activities in a responsible way, in order to support the biodiversity conservation efforts).

Moreover, the development of green hotels is linked to the development of green buildings (Pan et al., 2018) and green practices associated with them. Babatunde et al. (2019) propose an energy audit guide in the hospitality industry to estimate the energy consumption of accommodation establishments, noting that 4-5* hotels are the most open to the implementation of measures to reduce consumption.

Although the concern for green economy development in the hospitality industry seems to be just starting, the prestigious Cornell University School of Hotel Administration, through The Center for Hospitality Research (CHR) publishes since 2014 benchmarking studies

regarding hotel's sustainability, the last report (Ricaurte, 2017) publishing data on greenhouse emissions, energy and water consumption, after undertaking a study on 10,000 accommodation units in 448 geographical areas. In the case of the hotel industry, the main energy consumers are heating the accommodation spaces or the use of air conditioning – accounting for 50% of total consume, followed by the use of hot water or the activity carried out in restaurants (Pan et al., 2018).
All these being considered, sustainable growth in all business areas has become a critical requirement, as now there is a growing pressure on organizations to use the green economy to achieve a sustainable competitive advantage. Organisations in the hotel industry make no exception, and the fact that they are among the biggest consumers of energy, through the multiple functions they undertake and their 24h/24 uninterrupted activity, requires an orientation towards the implementation of the green economy. The state of knowledge on the implementation of green economy in tourism is still in its beginnings, the literature on this topic having a series of deficiencies to be resolved.

Labelling green hotels: examples of best practices from the industry
The increased interest in the development of sustainable practices within the hotel industry has been correlated to the development of several eco-labels, certifying that the establishments follow a set of green practices in doing business. Although all eco-labels are awarded voluntary, hotels have started to invest in the process of adhering to such groups since they offer the possibility of addressing customers in a different way.
TripAdvisor.com, for example, considered "the world's largest travel site", has developed its own certification program, called The TripAdvisor GreenLeaders Program, in partnership with UNEP. The program, addressing accommodation units, is aiming to certify green hotels, offering five stages of development: GreenPartner, GreenLeader Bronze, Silver, Gold and Platinum, in ascending order of the impact of the hotel's green practices (TripAdvisor, 2019). However, one of the most prestigious eco-labels is The Green Key (founded in 1994 in Denmark), presenting itself as "the leading standard for excellence in the field of environmental responsibility and sustainable operation within the tourism industry", more than 3000 hotels and other businesses in the hospitality industry in 57 countries having this certificate recognized by the UNWTO and UNEP (Green Key, 2019https://www.greenkey.global/). The two eco-labels are presented in figure 1.

Fig. no. 1 Eco-labels for the TripAdvisor GreenLeaders Program and The Green Key
Source: TripAdvisor (2019), Green Key (2019)

In order to offer a snapshot of the development of green economy in the European hotel industry, the Green Key eco-label was selected as reference. Table 1 presents the number of sites in the hospitality industry awarded with the Green Key (accommodation units, restaurants, campsites, conference centres, attractions), for each of the 28 countries in the European Union. Moreover, in order to verify whether there is a connection between the development of green tourism sites and the tourism activity, international tourist arrivals (for 2017) were also taken into account. Last, but not least, in order to verify whether there is a connection between the number of green tourism sites and the level of development of green economy, the Global Green Economy Index (GGEI) 2018 was considered. GGEI is, since 2010, the first index that indicates the performance of 130 countries in terms of green

economy performance, based on the professional evaluation conducted by a group of experts on four dimensions (Dual Citizen LLC, 2019): leadership and climate change, efficiency sectors (including tourism), markets and investments, environment.

Table no. 1 Green key sites in the European Union (correlation with international tourist arrivals and Green Economy Index)

		Green Key Sites	International Tourist Arrivals in 2017 (million persons)	Global Green Economy Index 2018
1	Austria	8	29.460	0.6469
2	Belgium	236	8.358	0.5737
3	Bulgaria	0	8.883	0.4027
4	Czech Republic	3	-	0.4773
5	Cyprus	22	3.652	0.4511
6	Croatia	7	15.593	0.4912
7	Denmark	143	-	0.68
8	Estonia	13	3.131	0.4662
9	Finland	96	3.181	0.6997
10	France	624	86.918	0.6405
11	Germany	34	37.452	0.689
12	Greece	323	27.194	0.5485
13	Ireland	0	10.388	0.5993
14	Italy	10	58.253	0.5606
15	Latvia	12	1.950	0.4632
16	Lithuania	4	2.523	0.5159
17	Luxembourg	1	1.046	0.5231
18	Malta	1	2.274	0.5163
19	Poland	3	18.400	0.4101
20	Portugal	127	21.200	0.5405
21	United Kingdom (Wales)	17	37.651	0.623
22	Romania	1	2.760	0.4799
23	Slovakia	0	-	0.4527
24	Slovenia	7	3.586	0.5058
25	Spain	5	81.786	0.5411
26	Sweden	178	6.865	0.7608
27	Netherlands	689	17.924	0.5937
28	Hungary	1	15.785	0.5419

Source: Green Key (2019), UNWTO (2018), Dual Citizen LLC (2019)

As one can see, Netherlands is the country with the highest number of Green Key sites (689), followed by France (624) and Greece (323). However, the development of green key sites across the European Union may be considered in its early stages, as out of the 28 countries, only 7 have more than 100 tourism businesses recognized as being sustainable. Countries such as Bulgaria, Ireland and Slovakia have no green key sites, whereas, in

Romania, Malta and Luxembourg there is only one hotel certified with the Green Key award.

Aiming to verify whether there is a connection between the number of Green Key sites and the development of the tourism activity, and the green economy, in particular, the Pearson Correlation Coefficient has been determined in each of the two cases. These being said, the Pearson Correlation Coefficient (0.33) indicates a moderate correlation between the development of green key sites and international tourist arrivals, probably due to the fact that the tourist activity or preference for a specific destination is influenced by other factors as well, such as tourist attractions or costs associated with travelling to that destination. Spain, for example, the second most preferred tourist destination in the EU (with more than 81 million international tourist arrivals), has only 5 Green Key sites, a similar situation being encountered in Italy, which has 10 Green Key sites, while in 2017 it attracted more than 58 million international tourist arrivals. On the opposite, countries with a high number of Green Key sites, such as Sweden or Belgium, register average performances in terms of international tourism. Regarding the number of Green Key sites and GGEI, the Pearson Correlation Coefficient (0.37) indicates as well a moderate correlation. Sweden, with the highest performance in terms of green economy (0.7608), has 178 Green Key sites, while Germany, the second country in EU based on GGEI, has only 34 Green Key sites and Austria, the fourth country in EU in terms of green economy performance, has only 8 Green Key sites. Most definitely, the GGEI is determined by several factors, the level of development of green tourism being just one of them. Moreover, it should be taken into account that the Green Key is a certification awarded voluntarily, on the request and application of each business. This means that in each country, there may be more tourism businesses that have implemented green practices, but that are not formally certified as "green" or that may have opted for a different certification, not the Green Key award.

Conclusions

Green economy and its implementation in the tourism sector is a topical subject for the present business environment. The paper has presented a short glimpse on the subject, based on a thorough literature review. Moreover, it has presented the spread of the Green Key award in the European Union, indicating that the number of Green Key businesses is moderately correlated to international tourist arrivals and The Global Green Economy Index. One limitation of the paper is that it only took into account one eco-label present on the market – the one with the highest notoriety. A more comprehensive research could focus on all eco-labels certifying the impact on the environment. Further, as the eco-labelling process is a voluntary one, conducted at the request of the business owner, one should take into account that the number of sites implementing green practices may be bigger than the number of sites actually certified. As business owners or hotel managers are becoming more aware of the need to align to the sustainable tourism and green economy practices, the research could be further expanded through a direct research, targeting managers in the hospitality industry and aiming to identify the factors influencing the decision to apply for an eco-label.

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TRENDS AND CHALLENGES OF BUSINESS MODELS IN THE ERA OF INTERNET OF THINGS: COMPARISON BETWEEN WESTERN AND EASTERN EUROPE

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Abstract
Information technology has massively transformed the world of business over the past fifty years - first individual functional areas within companies ("first wave"), later increasingly also cross-divisional value-added processes and trade ("second wave"). With the Internet of Things (IoT), the "third digital wave" is currently rolling up.
The IoT is a driver for digitization. By analyzing machine data, the use of sensors and the intelligent real-time processing of huge amounts of data in the cloud, new business models are created. With the information gained, companies are able to improve their value chain. However, one of the most difficult issues in this context for many companies is how they can further develop their existing business model or establish successful new business models that will be based on new technologies and IoT.
To investigate resulting impacts, we draw on the existing business models and deduct specifics for the Internet of Things. Building on this, in order to reach the aims of the paper the authors will use a descriptive research method (a case study) and qualitative research method (face-to-face interviews). The data gained will be analyzed to understand what digital business model components are, listing the main benefit of companies that implement IoT and to compare the growth of a company in Western Europe with one Eastern Europe.

Keywords
Internet of Things, Business Models, Digitization

JEL Classification
M15, L86, O32

Introduction

The Internet of Things (IoT) describes the connection of physical things such as appliances, systems or vehicles with the Internet within a network (Ashton, 2009). It is estimated that by 2020 between 20 and 100 billion things will be networked worldwide (Statista, 2019). The number makes it clear what a huge potential the entire IoT industry is credited with. This will fuel the creation of new ventures with innovative business models and open up new opportunities for companies in particular to cut costs and differentiate themselves from their competitors (Bucherer & Uckelmann, 2011).
Society is becoming more flexible, individual and mobile, always connected to the internet and used to receive desired information in the shortest possible time. Consumers are more and more "digital natives", people who either grew up with the new technologies or handle

them as if they had grown up with them. They are curious about technological developments and are not afraid of digital purchases (Delgado, 2018).
The digital transformation has already begun, and provides companies on one hand with new challenges, but on the other hand, ways to profit of untapped potential (Roland Berger Strategy Consultants, 2015). The question is what are the (technological) trends, how do they affect companies, and especially business models. One key component of this digital transformation is the Internet of Things (Gubbi et al., 2013). The purpose of this paper is to highlight the importance of Internet of Things in existing and new business models, to highlight the technological trends and their acceptance in Europe. To achieve this, in the first section of the paper key aspects of the research on business models and IoT are presented.
Further, in the second part of the paper, the results of a exploratory study will be presented, during which interviews were conducted with companies such as IBM, UiPath, Oursson, Continental Automotive, Dell, BMW AG, DriveNow or representatives of the Romanian Government. The aim of this study is to better understand aspects such as the channels companies are using to connect to their customers (both online and offline), the preferred business models of companies who deploy IoT, the main value added of IoT as well as what are the main obstacles or challenges for using IoT technologies.

Internet of Things – Towards a Truly Connected World

As the world gets closer together and the complexity and dynamics of the economy are constantly increasing, the work has to become "learning-intensive". It is no longer enough for a single person - a Ford or Watson - to learn on behalf of the entire organization. It will no longer be possible in the future to "figure things out" and make sure that everyone else follows the instructions of the "great strategist". The top organizations of the future will be distinguished by their knowledge of how to unlock the commitment and the learning potential at all levels of an organization" (Senge, 2008).
With the emerging knowledge industry, the growing importance of the Internet and the associated expansion of eCommerce, business models have become increasingly popular, especially in IT circles. In this dynamic environment, a business model describes the basic principles according to which an organization creates, communicates and records values (Osterwalder, 2014).

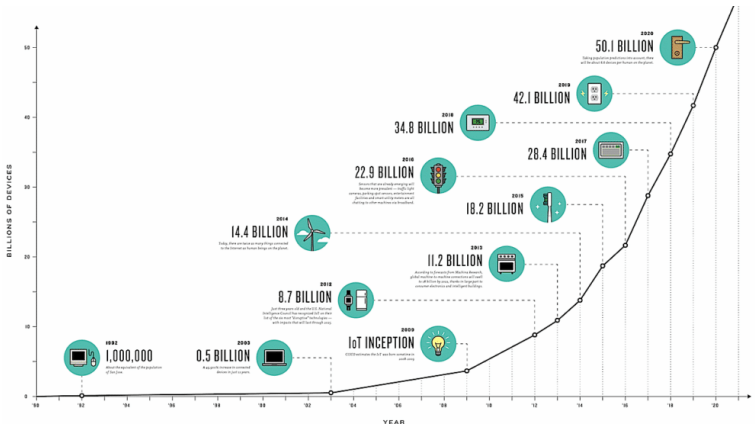

Fig. no. 1 The Internet of Things: Explosion of Connected Possibility
Source: Moore's Law and the Future of IoT, Halladay J., 2018

The technical progress is based primarily on the exponential growth of computing power, and together with this the growing ability to gather and store data. Thus, data has started to shape not only the future, but also the very fabric of the world we currently live in. The

Internet of Things will be connecting 25 billion users by 2020, ten times the amount of people connected today (Fig. no. 1). Activities that happen in a minute over the internet in 2019: Google (3,8 million search queries), Facebook (1 million logged in user), Mobile Apps (390.000 apps download), Emails (188 million emails sent) or Messages (41,6 million messages sent) (Desjardins, 2019). This also means that more and more IoT devices are in use (Fig. no. 1). From 1975 to today, the computing power doubled every two years. Quantum computers will break through these limits and technology leaders are competing for the first commercially available quantum computer (Cusumano, 2018).

When it comes to business models and the benefits of IoT, everything can be reduced to one common point: increasing efficiency, process quality, revenue, and lowering costs / error rates (Martin, 2017). Depending on the industry and orientation, when it comes to integrating IoT into business models the outcome is: the development of new markets or innovative services for existing customers are offered. Similarly, the development of completely new business models is often sought (Pop & Pelau, 2017).

Even the term "business model" is the starting point for challenges. Although there is broad consensus in the literature, the development of new business models is of fundamental importance for successful positioning in the course of the digital transformation (Magretta, 2002). However, the definitions of which components actually make up a business model are very different. Basically, a business model is derived from the corporate strategy and business idea and comprises a number of different elements as well as an appropriate architecture, on the basis of which money is ultimately earned. Typical elements are customer segments, the cost structure, distribution channels or required resources (Altexsoft, 2018). Digital business models are the mapping of business-relevant solutions by means of software products, which are used on digital platforms, interconnected and made accessible to customers. The networking of the solutions takes place within one's own business model. The claim and potential of business model development lies precisely in identifying those solutions and customer requirements for which no technical solutions or business processes have yet been devised.

Technologies alone are not enough for companies to successfully pursue the path of digitization (Tohanean & Toma, 2018). Essentially, it is about the increased exchange of information between people, companies and products. Business models are still in transition - to highlight the changes, companies from Eastern and Western Europe will be compared, differences will be emphasized and technological impact will be analyzed.

Internet of Things - Impact on Business Models

Markets are in our understanding relationships between businesses and customers (Teece, 2010). And to shape these relationships IoT opens up completely new possibilities and approaches. New distribution channels, payment models or additional revenue streams. Major companies such as Facebook, Google, Microsoft or Amazon are connected direct or indirect to smaller ones like Skype, Whatsapp, Instagram, Waze or YouTube. All have in common one thing, the internet and digital change (Miorandi et al., 2012).

The prerequisite for creating such connections or business models is the secure exchange of data and to embrace digital change by taking advantage of mobility, data analytics and cloud computing. The results are improved business processes, access to real-time information and changes the way data is managed and used. Following above patterns, we identified five main technology trends:

Digital and physical boundaries disappear: in the so-called Internet of Things, machines communicate with each other, sensors and radio chips connect the physical and the virtual world. Businesses use real-time data to respond faster and smarter to market changes. The Internet of Things is changing the way people live and work (Koreshoff et al., 2013).

Boundaries between customer and workforce dissolve: so far, marketing departments have explored the desires and preferences of consumers. In the future, customers will work directly on products by contributing their ideas via networks. The boundaries between the workforce and consumers are dissolving. In the US, for example, MasterCard benefits from the data inventors of the computer science and mathematician network Kaggle (Goetz, 2013). In Germany, companies such as Tchibo have created platforms such as Tchibo Ideas, through which customers develop their own product ideas. Crowdsourcing as a new form of collaboration shows big companies where new trends emerge (Capece, 2009).
Businesses integrate their data across departments: despite sophisticated data management tools, data remains unused in many organizations. Only one in five companies integrates their data across all departments. Data optimization and integration is a prerequisite for a new look at information usage. The use of data should be based on the model that helps the entire enterprise to grow. The data is used, shared and reused, just like other products. Google shows how this approach can be expanded. Since the company opened its programming interfaces, more than 800,000 Web sites are working with data from Google Maps.
Hardware gains new meaning through hyperscaling: the need for large and fast data centers is increasing. Digitalization is enabling large companies to take advantage of their hardware: those who intelligently manage energy consumption, processors, and the architecture of their infrastructure can leverage economies of scale and reduce costs. Due to the digitization of their business models, hardware is increasingly relevant as a basis for future growth.
Apps make software a core competency: originally intended for the private user, apps are increasingly contributing to the agility of a company. Companies with or without own IT departments have introduced Apps as a main tool. Apps are developed in such a way that they support the company's goals. One of the pioneers is Japan Post Co. The company uses apps through the Salesforce.com platform. Japan Post has developed 15 apps that provide users with insight into corporate financial services and products. According to own data Japan post achieved more flexibility and decreasing costs.
All this technology trends have one thing in common: connecting activities, processes and data via the internet. However, the implementation of IoT is an enormous challenge for many. One of the most difficult questions in this context is: how can the existing business model be further developed and how can successful new business models be established? (Gassmann, Frankenberger, et al., 2018). By evaluating machine data, the use of sensors and the intelligent real-time processing of huge amounts of data in the cloud, new business models are created. With the information gained, companies are able to improve their value chain by optimizing existing processes and costs, improving customer contact and experience and developing new business areas through new service offers.
The IoT is a key component of new business models (Tohanean & Toma, 2018). It is very important that companies make an inventory, whether their existing business model is still future-proof against the background of the IoT and what potential can be tapped through targeted adjustments. The challenges are enormous, but the opportunities are as well (Cvijikj & Michahelles, 2011). Opportunities which are build up by people, devices, places, networks and offered services – all together represent the way of working of IoT: anything any device, any service any business, any path any network, any place anywhere, anytime and anybody – opportunities are linked together.

Research methodology

The authors employed a descriptive research method, namely the case study and qualitative research method, face-to-face interviews.
The case study presents a complex analysis of a contemporary phenomenon. Yin (1994) as cited in Tellis (1997) noted three categories: descriptive, exploratory and explanatory. Yin's

approach is closely aligned with a realist-positivist orientation, as he conceptualizes this research method as a form of social science (Harrison, et al., 2017). The case study was employed to understand and learn more about the process and actions of a company when IoT occurs.

To achieve the objectives of the paper, the authors, also, conducted 14 semi-structured interviews with key employees of companies from the automotive and IT industry. Companies like: UiPath, Oursson, Continental Automotive Romania, Dell, BMW AG, SC Database for Commerce and Industry Romania SRL, DriveNow, IBM or SAP SE. The interviews were conducted over a timeframe of 6 months, from September 2018 to April 2019. Results are used to understand what digital business model components are, listing the main benefit of companies that implement IoT and to compare the growth of a company in Western Europe with one Eastern Europe.

Results - Business models in transition: Western vs. Eastern Europe

In the past 20 years, there always have been differences between Western and Eastern Europe. When comparing the per capita income of European countries, there are striking differences. In Bulgaria, for example, the annual per capita income in 2018 was € 7.100, in Spain € 25.000, and in Luxembourg € 92.800. In the East per capita income is no more than € 20,000 in any country, but in the West is growing more and more every year. Table no. 1 shows the differences below:

Table no. 1 GDP per capita in EU countries 2018 (in €)

	Bulgaria	Estonia	Spain	EU	Germany	Luxembourg
GDP per capita in EUR	7.100	17.500	25.000	32.700	39.500	92.800

Source: Author's own creation, data from International Monetary Fund World Economic Outlook

This also affects the business sector, developing it to modern standards and investing in digital solutions. Having this as a starting point, we want to highlight the differences how digital business models evolve with the help of IoT in these regions. To reach this goal 58% of the selected companies are located Eastern Europe, 30% are in Western Europe and 12% with activities all over the world. Different industries where taken into consideration (Fig. no. 2):

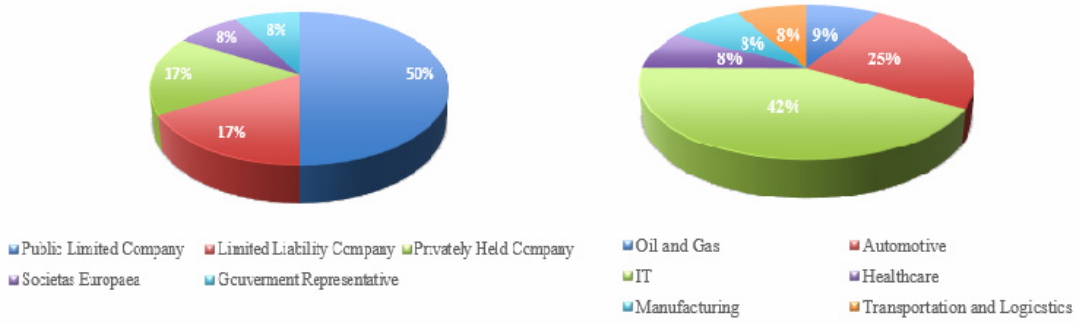

Fig. no. 2 Legal classification and industry of the interviewed companies

Source: Author's own creation

Digital transformation has long been in full swing. Nevertheless, many established companies find it difficult to come to terms with this fact, to adapt to change and to develop their own company accordingly. The speed has changed, and digital business model should be constantly reviewed and adapted to the circumstances. Below different particularities, that are influencing companies in Western Europe:

- Customer relationships are maintained digitally;
- Customer requirements are in digital format and added in a planning tool or database; the system analyses the information automatically and provides the needed solutions.
- Customer work is recorded by a computer and made available at any time via the Internet;
- The information is analyzed contextually by a software and results are made available to the own employee;
- Company-internal product-, service- or business ideas are recorded and stored digitally and automatically evaluated by the system;
- Company-external product-, service- or business ideas are recorded and stored digitally and automatically evaluated by the system.

Below different particularities, that are influencing companies in Eastern Europe:

- Customer relationships are maintained exclusively analogously and documented with a Microsoft Office solution;
- Customer requirements are recorded analogously and documented in a Microsoft Office solution;
- Customer work is recorded retrospectively;
- Company-internal product-, service- or business ideas are recorded, stored and documented with a Microsoft Office solution; evaluated and analyzed manually;
- Company-external product-, service- or business ideas are recorded and stored both analog and digital; evaluated and analyzed manually.

Start-ups challenge established companies with disruptive business models, while innovation cycles shorten significantly. The opportunities often conflict with the rigid and obsolete structures of traditional companies. A cultural change is overdue, which requires new forms of work. Employee satisfaction becomes increasingly important in times of skill shortages. Fig. no. 3 shows the aggregated answers from the 14 interviewed and analyzed companies: 11 have more than one main activity.

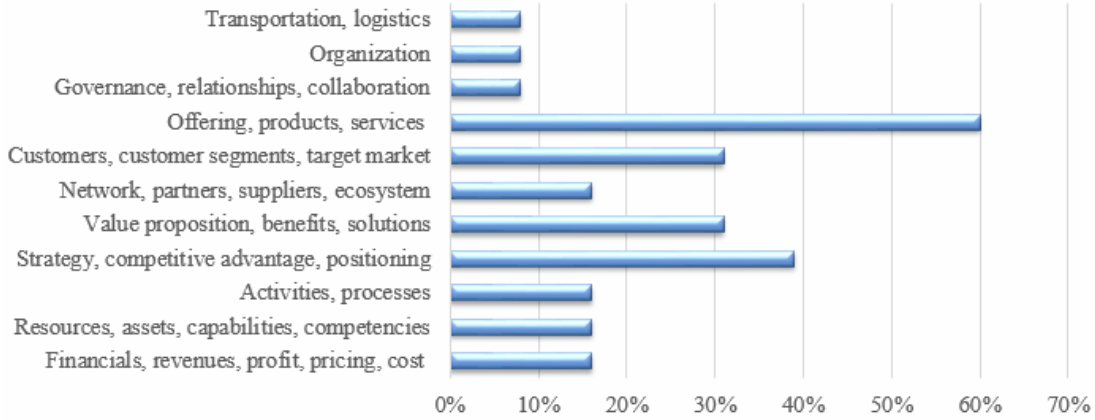

Fig. no. 3 More than one more business model per company

Source: Author's own creation

IoT is a turning point in the digital transformation. Fig. no. 4 shows the main values added to company systems using IoT devices.

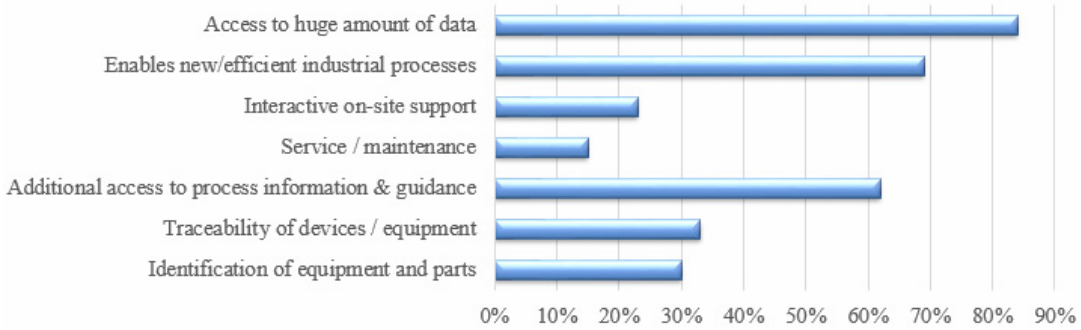

Fig. no. 4 Main value added to company systems using IoT devices
Source: Author's own creation

As well as adding value to existing or new business models, IoT faces also obstacles or challenges when it comes to use it or implement it. Fig. no. 5 is showing such obstacles. The main ones are the integration with existing systems, lack of knowledge, data handling or security concerns.

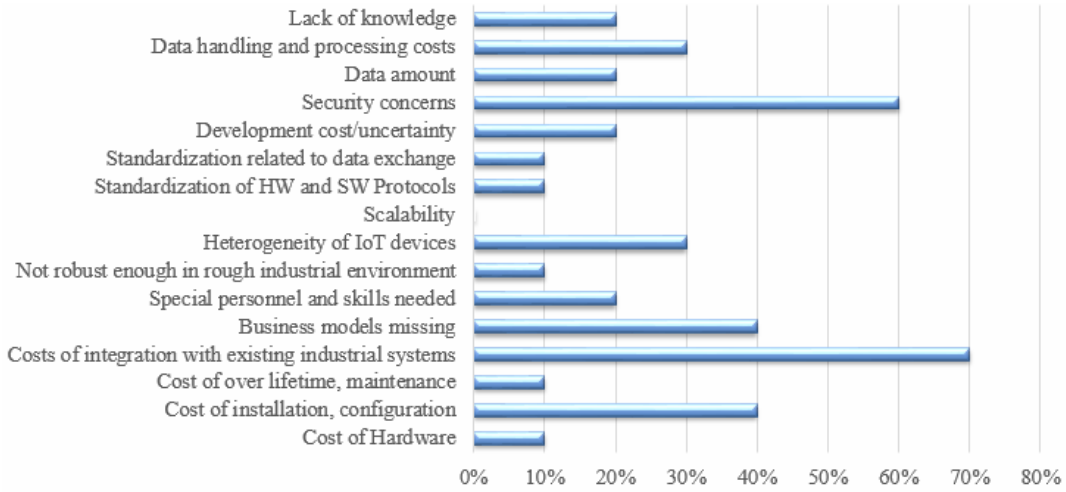

Fig. no. 5 Main obstacles or challenges for using IoT technologies
Source: Author's own creation

Conclusions

To sum up IoT is a journey of self-discovery that can add incredible value over time. IoT can help develop and scale solutions that go toe-to-toe with existing and new business models – to help customers and users all over the globe, to improve their business or process.

In times of turbo progress, it is no longer only patents, product and process innovations that ensure the success of companies. Today, innovations of its own business model or models are necessary for this. IoT is the focus. Lifelong training, collaboration, mobile work, different types of remuneration, home office, modern office concepts, agility, diversity and creativity are on the other hand the other parts for focus.

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RISK MANAGEMENT IN AGRICULTURE UNDER THE CLIMATE CHANGE

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Abstract

This paper aims to develop a better understanding of risk management in agriculture issues. At the same time, it is necessary to specify the particularly important role of managerial control and audit as ways to reduce the action of risks in managing the effects of climate change in agriculture. This article will describe techniques, which support managers so that they can mitigate the effects of risks, such as: delays in running projects, inability to obtain environmental permits in a timely manner, etc.

In this context, it can be noticed that the professionalism and qualification of the manager is propagated even in what we could name the effectiveness of performance in agriculture. In order to achieve the predetermined objectives, project management carried out in specialized units on the agriculture implies, including appropriate risk management. In this regard, at least three fundamental objectives could be specified as follows: (i) identifying likely events that may have an undue impact on the results; (ii) closely and actively monitoring identified risks; (iii) adopting decisions to prevent environmental incidents and to strengthen internal / managerial control to give full assurance on the achievement of pre-established objectives.

Keywords

project management, risk management, internal / managerial control, performance, agricultural policy, management strategy.

JEL Classification

F64; G32; O13; Q17; Q56.

Introduction

Essentially, `risk has no generally accepted definition, ` as quoted by Pfohl et al. (2010). Traditionally, the `risk is the potential economic losses, but in the scientific literature, it gets a broader perspective in the sense that risk is supposed to be a negative effect that prevents companies from achieving their intended goals` (Bagozzi and Yi, 1988). From research conducted over time, in this area it can be suggested that a lower level of environmental risk and the implementation of effective risk management are associated with the economic benefits of the company / institution concerned. However, agricultural performance and risk management are subjects of contemporary interest, but to date there is no real evidence of their relationship.

Unfortunately, the environment is increasingly exposed to the factors that may lead to the risk of incompatibility, and because of climate change appear negative effects on agriculture. However, from the perspective of improving technology is desirable to eliminate the potential threats of technological processes. Methods of assessing risks to minimize them shall be applied in accordance with the conduct of organizations and the most common ones are used in the field of quality and safety.

In fact, this study can correlate environmental risks with the application of effective company management so that, `to conclude that these are the key factors in business relations with investors` (Aktaş et al., 2011).,` `but also with banks` (Weber et al., 2008), `as well as other stakeholders.` (Hofer et al., 2012).

Robertson specified that an adequate risk management plan, `will implement it to respond when an unforeseen event occurs and there is an imminent threat of pollution or possible damage to the environment since the workload of the agent / operator`; also, will be essential to have the necessary response to rebalance and remedy over a longer period. However, it's important, in order to manage different stakeholders who, present one or more risks. For example, for an environmental / agricultural manager, it might include risk manager information or other direct reports, so that, to submit risk documents to appropriate regulatory agencies where appropriate as well as to respond to potential environmental incidents when they occur` (Robertson, 2009). Most often, an environmental manager is responsible for environmental issues, as well as, their sustainability and others. But there is also a risk management department which in many cases deals with insurance, and these two departments work separately and not together. That is why we can consider that it would be necessary to include these two different ways in order for the institution / company to carry out a precise risk management as a unitary one, where environmental risk and all other types of risk can be managed by a single department. Also, Robertson, added that `risk management is actually a risk balancing act. The solid risk management creates a positive business environment for companies and minimizes or eliminates damage to the environment or the environment. It also reduces costs associated with operating activities and responds to environmental events, so it can help maintain a positive image for the various stakeholders`.

However, to achieve the success in the framework of the established agricultural decision-making, the following elements are important: transparency of procedures, better representation of stakeholders, the willingness of these parties to participate constructively and to know their predefined objectives, the orientation towards a qualified mediator and a conceptually developed basis of the underlying methodology. (Eisenführ et al., 2010). Further, these vast elements highlight the fact that decision support in environmental management can have a high degree of success for the different approaches underlying it. (Hajkowicz, 2008).

Under the conditions of preventing the occurrence of risk results, organizations are trying to act in a systematic way and, because, is implemented the integrated management system, which is based on the formal systematic guidelines included in the following standards: ISO 9001, ISO 14001 and PN-N / OHSAS 18001. At the same time, they shall be given the tools and methods that can identify threats, as well as the results and estimation of their probability of occurrence and the significance of the results, in short, defining the associated risk. `Techniques relate to different types of risk, however, their goal is always to ensure quality, minimizing environmental, agricultural and occupational safety. The organization's policy confirms that the most applied methods of risk estimation are the methods of research and estimation of quality and techniques for estimating risk at the workplace. ` (Karkoszka and Soković, 2014).

According to the FAO, risk management is defined as `a set of coordinated activities for managing and controlling an organization in terms of risk. It includes a structured, methodical approach to identifying, verifying and reducing exposure to risks achieving the desired objectives` (Food and Agriculture Organizations, 2015).
Subsequent, the harmful hazards could be remedied through alternative measures identified as most appropriate. Also, the communication and consultation with stakeholders should take place throughout the process to ensure that those responsible for decision-making on the implementation of the risk management process understand the concepts and results of the risk analysis. On the other hand, monitoring and verification must be carried out throughout the risk management process to detect changes affecting the risk and / or real risk criteria to identify emerging risks and to ensure that mitigation measures are effective. (ISO, 2009).
Thus, throughout the article we will present the description of the risk assessment methodology, but also the underlying principles underpinning the proper risk management. Therefore, the methodology applies the instructions for assessing the acceptability of environmental / agricultural risk. This is reflected by the risk-environment / agricultural ratio in close connection with the impact, occurrence and significance, as well as, the fulfilment of legal requirements and careful monitoring of environmental / agricultural issues. The methodology we discuss is consistent with integrated risk management and can be used to manage either the environmental / agricultural risk itself, or the integrated risk of improving the processes in each organization.

General characteristics of risk management

In the context of explaining the term of risk, it can be defined as a probability of exposing man and his goods to the action of a particular hazard of a certain size. Also, the notion of risk can be defined, as a random event that can strike goals and cause serious harm in all activities.
However, in specialized dictionaries we meet established, such as `... the danger, the more or less likely inconvenience to which we are exposed`, but also `... exposure to danger, loss or failure` (Le petit Larousse) or `... the chance to suffer harm (something bad) or loss` (Webster's Dictionary).
Risk is the likely level of loss of life, the number of injured, damages to the properties and economic activities of a certain natural phenomenon or group of phenomena, in a certain place and in a certain period. The elements at risk are the population, property, ways of communication, economic activities, etc., exposed to risk in a certain area.
Researcher, Slaymaker, found that Risk (R) is the mathematical product of hazard and vulnerability, expressing the relationships between a particular phenomenon and its consequences (Slaymaker, 1999). Thus, we can further specify, the fact that a certain risk can be expressed by a mathematical formula, which represents the product of hazard, risk and vulnerability: R = HxExV, where R = risk, H = hazard, E = risk-exposed elements, V = vulnerability. From this expression, it follows that, depending on the size of the hazard, of all human beings and their goods and their vulnerability can characterize the risk. In order to assess damages from natural or anthropogenic sources, the calculation is based on the above formula. The risk cannot be completely eliminated from any activity, and the only valid option remains to `produce` a risk management strategy that brings with it a series of decisions that are necessary to combat the effects of various factors, resulting in reducing the threat that threatens people's lives, the destruction of goods and the environment. Getting a risk assessment is considered the first step in the strategy.

A risk assessment is necessary to ensure decision support and remedial action. In this way, an efficient use of the available resources. Existing risk assessment methods can be assessed by comparing with the relevant parts of an international risk management standard.
Whereas, the efficient risk management requires financial resources, skilled workforce and time - it is itself associated with cost, delay, and inaction risks. It is necessary to specify that risk management is not, however, a completely innovative or unfamiliar exercise. Agricultural risk management is only a part of a much wider set of governmental needs and national priorities. In most cases, the economic and social development leads to the introduction of new processes and products, as well as to the growth of potential risk areas, because we do not consult with risk assessors or agricultural scientists in advance.
The risk management helps managers to ensure that their strategies are strong and to identify weaknesses and mitigation actions to manage operations and minimize risks. But we need to specify that a solid team is needed to solve the problems and risks that arise so that it is able to take the right measures.

The actual approaches in risk management with projection on environment in correlation with agriculture issues

According to the European Union Guideline on Performing Risk Analysis More Relevant to Establishing Management, `Current approaches to assessing health and environmental risks lead, frequently, to a variety of technical expressions of risks, on the basis of which the objectives, results or other technical parameters are taken into account, which are, sometimes,
indirectly related to the protection objectives expected by risk managers and decision-makers` (Scientific Committees, 2013). However, we must add that sometimes, `risk managers` cannot establish an appropriate framework for achieving the risk objectives, such that, to reach the desired results with the help of risk assessors. Unfortunately, often, the specialists may have problems in interpreting the expressions used in risk assessment reports because they do not address the risk directly. Thus, methods of risk assessment, procedures and expression of results are rarely cost-benefit or multi-criteria analysis that risk managers and policy-makers have to inform when making decisions. An important challenge, in this process, is characterized by the possibility to establish and standardize the approaches and methodologies needed to measure and quantify the risks, benefits and costs. As a result of the lack of such specific approaches, comparisons of parameters without standardization the result can vary considerably based on their underlying assumptions, using only existing policy comparisons.
Essentially, the environmental policy focuses apart from applying the legislative approach to implement effective tools that can support the company's growth of its competitiveness, profitability, including the opportunity of vacancy, who helps, in this way, to reduce the negative impact of human activity on the environment. The international environmental standards are not intended to be used to create non-tariff barriers or to increase or change the legal obligations of the organization. The general purpose of international standards is to support environmental protection and pollution prevention in relation to socio-economic needs. The sustainable development indicators are needed `to provide solid bases for decision-making at all levels and to contribute to the self-regulation of the sustainability of integrated development-environment systems`, according to the Declaration of Agenda 21 of the United Nations Environment and Development Conference, (Rio de Janeiro, 1992).

Strategies applicable to environmental / agricultural management

The management strategy consists of the following three components: (i) strengthening institutional capacity for environmental / agricultural assessment, involving the creation of a

specific procedure in the environmental factors analysis and the provision of technical assistance, training and equipment to the functional unit; (ii) development of an environmental assessment procedure to institutionalize environmental analysis, as part of the selection, design and execution of projects; (iii) setting up an environmental monitoring system to verify the implementation of the improvement measures and the imposition of sanctions for violation of the law.

If the established and acceptable standards and criteria for air quality, water and agricultural land are non-existent, they lead to a constraint in carrying out environmental impact assessments. International standards have a role to play in determining the present and future environmental quality thresholds by comparison with the results analysed. However, there is a need for a well-founded legal basis for standards to be defined in accordance with existing provisions. On the other hand, another constraint that may be possible is the implementation of the environmental impact assessment process which is limited to establishing and coordinating inter-institutional actions. These restrictions can gradually overcome, i.e. as the agencies responsible for implementing the evaluation process will acquire the necessary experience in the implementation of the activities. The environmental manager will report with one of the following conclusions: (a) the correct application of the measures is verified; (b) justifications for adjustments or delays; or (c) violations. In the event of breaches of applicable legislation that are reported, the inspector will issue a correction notice, specifying the violation and how to correct it. However, if the correction notice is not complied with and refusing to meet the criteria, the qualified person on environmental matters will issue a notice of non-complied with, which may range from a fine to work suspension or suspension of the contract. The risk management is an administrative workload that requires the implementation of legal, economic, and available technology standards. Based on an activity that can cause a disaster, the objective measures must be taken into account which should be applied at the moment and not according to the personal perception of risk. Such that, in most cases, choosing the right decision is focused on individual choice.

Firstly, the risk management involves identifying probable events that may have an undesirable impact on the results. When archiving is not properly organized, there may be a risk that, in the case of an audit, the requested documentation cannot be made available. In this case, finding a deficiency can no longer be countered with arguments, so the risk of applying a financial correction becomes a necessity. For example, the manager does not seek to identify opportunities, but only the possible constraints that may cause the objectives to fail.

In the secondary plan, careful and active monitoring of identified risks is required. If the situation so requires, the list of risks can be changed operative, either by introducing new risks, either by removing some of the risks from the list which no longer pose any threat to the achievement of the objectives. Also, where appropriate, the initial statement may be subject to possible corrections or possible re-forms.

Finally, the third specific purpose of risk management refers solely to the prevention / correction decision. Such a decision needs to be adopted on the basis of complete, accurate and thoroughly verified information and is usually aimed at strengthening the internal / managerial control of the Project Management Unit (PMUs).

The risk assessment involves identifying its probability and impact level. Probability refers to the chances that, for various reasons, the risk of activation. It is determined by taking into account several probable consequences that the risk could trigger. For this purpose, both available statistics and brainstorming can be used. Probability is directly proportional to the number of events that may occur at risk activation, while, the impact relates to the

consequences / effects that the risk may once have triggered. Therefore, the higher the negative consequences, the greater the impact of that risk.

Considerations on risk elements with implications in the project management implemented in agriculture

The efficient agricultural policies are essential to increase the demand for safe and nutritious food in a sustainable way. While growth in demand for food, feed, fuel and fibres presents significant opportunities for agriculture, government policies must address challenges such as increasing productivity growth, enhancing environmental performance and adaptation to climate change, and improving resilience of farm households to market shocks brought on by weather and other unforeseen circumstances.

For the development of agriculture, will be needed of structural and technocratic reforms with commercialization and modernization in the sector. It will increase the production level in the sector and become a source of both goods; industrialization will create more employment and less inflation. With the development process in the sector if economy achieves more production and employment with low inflation, is also considered as sustainability. For sustainability of agricultural crops production, it is necessary to starts various reforms in the sector i.e. reforms about crops production, basic, infrastructure, extension services and mechanization.

The OECD is a founding member and partner in the International Organisations Consortium for Measuring the Policy Environment for Agriculture, which is working to develop a harmonised and consolidated database of well-documented agricultural support indicators for an even larger set of countries.

European funds should be seen as an important source of funding which can lead to the achievement of agricultural objectives and project management is a useful tool that can make this progress possible. An important role in this process it has the state's ability to channel with efficiency and effectively funds to users and appropriate investments leading to economic growth based on agriculture. In this regard, the European Bank for Reconstruction and Development (EBRD or the Bank) promotes rational and sustainable environmental development in all its investment activities and technical cooperation, in accordance with its constituent instrument. The EBRD considers social sustainability and the environment is a fundamental aspect of achieving results in accordance with its mandate on the transition and recognizes that projects that support social sustainability and the environment are among the top priorities of its activities. Successful agricultural transformations are based on following:

- Developing an agricultural transformation plan demands prioritization—a plan will not succeed if it tries to cover everything. Instead, it should focus on the changes that are most likely to kick-start rural economic growth. Successful plans identify goals in a limited number of crop and livestock value chains, cross-cutting agriculture sector enablers (such as lower transportation costs or access to irrigation), and specific geographies.
- Agricultural transformations often focus too much on volume rather than value and on productivity of row crops rather than opportunities for high-value crops, downstream processing, and livestock. Farmers everywhere are businesspeople. Farming households in developing countries balance a portfolio of crops, livestock, and nonfarm work. Because they feed their families with some of the farm output as well as sell into markets, they make decisions based on their potential profit, risk, and cash flow across family food consumption as well as sales. Too often, agricultural plans recommend particular commodities without paying attention to this basic calculus of farmer household economics. Successful agricultural transformation plans give farmers the opportunity to raise their household incomes.

- The success of any agricultural transformation relies on how well millions of smallholders and small- and medium-size enterprises can be helped to change farming practices as quickly and effectively as possible. The critical enabler, without which an agricultural transformation is likely to fail, is a frontline "change agent" that helps farmers modify their practices. Change agents are people who farmers trust and interact with regularly.
- Effective change agents exist in both the public and private sectors. Many scholars cite countries' investments in national agricultural extension services as critical to agricultural transformation. Ethiopia's investments in expanding the agricultural extension system are believed to have accelerated its agricultural transformation. Other mechanisms for organizing farmer-facing change agents, though, have also played critical historical roles in transformation. Agricultural cooperatives, for example, can provide technical assistance to farmers but can also fundamentally change the farmers' risk and potential revenue by providing access to storage, equipment, finance, and marketing services.
- Change in agricultural systems requires multiple parallel advancements. For example, improvements in agricultural extension and seed systems might enable farmers to switch to a more productive hybrid seed, but lack of access to fertilizer (upon which the hybrid depends) could prevent productivity increases and leave the farmer unwilling to buy hybrid seed next time. As in any complex economic system, when so many elements are interrelated, any one of them can become a constraint and stall progress.
- Approaching transformations with an investor mind-set is critical to the success of the process. In kick-starting agricultural transformations, coordination among government, donors, and civil society is critical, but it is equally important from the start to plan for private-sector engagement. Without this, the transformation may proceed more slowly, stall, or not reach scale.
- Agricultural transformation is more than changes in farming practices. It is about catalyzing transformation of a country's rural economy. As such, more than agricultural trade and subsidy policies are in play. For example, laws and regulations that influence banking, labour, infrastructure, land ownership and access, access to water, telecommunications, taxes, and insurance are also critical considerations.

Conclusions

While preventive management involves the inclusion of ecological restrictions in the design and exploitation models of production technologies, such that to use as few non-renewable resources as possible, to minimize the volume of waste, residues, harmful emissions.

However, for prudential purposes, but also to mitigate possible effects of risks, the manager will proactively act to identify the activities for which it is necessary to develop operational or system procedures. As such, management of units engaged in environmental issues will formulate a predominantly preventive line of conduct and, in this regard, a special role will have it the professional management of risks.

In conclusion, institutions should develop strategies that respond to the vision and development goals, to encourage creative thinking within employees, generation of ideas beyond the imposed formal limits on the basis of sound project management knowledge to ensure they increase performance on all levels.

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THE ROLE OF THE NUTRITION LABEL IN SHAPING STUDENTS' EATING BEHAVIOUR

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Abstract

Both researchers and business specialists are trying to find a common ground on the definition and use of nutrition labeling for food products. Especially after December 2014, European legislation stipulates as an obligation for companies to introduce a nutrition declaration in food labeling. Under the consumers' right to be properly informed about food, manufacturers developed several voluntary systems of nutrition declaration on food labels to facilitate understanding of information. The paper aims to highlight theoretical and practical developments in nutrition labeling, with focus on those that enhanced the informational role of nutrition label in shaping consumers' eating behavior. The research involved identifying students' perception on the opportunity, content, complexity and authenticity of nutrition labels and their impact on consumer decision. Thus, a qualitative research was performed using a focus group as main technique. The investigated group was formed by students in the master program Quality Management, Expertise and Consumer Protection - Faculty of Business and Tourism in The Bucharest University of Economic Studies. Motives, beliefs, attitudes in different acquisition scenarios were studied to help understand how respondents perceive nutritional information. Several data and publications were used, as: academic literature, legislation, reports and recommendations from the European Commission, websites of organizations in this field, and data collected during the focus group debates. The results reveals clues on the most well-known and appreciated system of nutrition labeling - Front Of Pack (FOP) – required to choose the most effective model for companies to improve their nutrition labeling of food.

Keywords

nutrition labeling, nutrition declaration, voluntary nutrition labeling systems FOP, perception, food behavior.

JEL Classification

L15, I 12, L66, P 46

Introduction

The need of information for consumers and particularly the differences in their perception requires a high level of consumer protection in the field of information offered by the food industry. The ways in which information is provided must be flexible enough to respond to new labeling requirements in order to guarantee consumers' right to information.

Fair labeling of food products guarantees that consumers are properly informed about the food they eat, but also influences their choices, based on health, economic, social, environmental or ethical considerations. Nutrition labeling is an important way to inform consumers about food composition, helping them to make a valuable judgment and to take an informed and appropriate choice. In providing nutrition information companies should take into account the relationship between diet and health, as well as the concern of choosing an appropriate nutrition to suit individual needs (U.E., 2011).
The paper aims to highlighting the multitude of current nutrition labeling systems Front Of Pack (FOP) used on the market along with the mandatory nutrition declaration and to identify students' perception about the effectiveness of nutrition labels in terms of its understanding, utility and impact on consumer decision. The current research also identifies the extent in which the objectives and strategies of companies in nutritional labeling are consumer-oriented. The utility of the paper derives from the importance of adopting effective nutrition labeling models which can set out general conditions that can subsequently shape an ethical behavior of producers, and also a balanced eating behavior for consumers.
The paper is structured in several sections: in the beginning the current evolution and state of knowledge regarding the concept of nutrition labeling is described, the following sections present the methodology of the qualitative research carried out, the obtained results and their utility from an operational and managerial point of view, and in the end the main conclusions are presented.

Literature review

The new labeling requirements aim at improving the level of information and protection of European consumers and stipulate the obligation for all producers from Member States to include a nutrition declaration in food labeling. Therefore, it should be noted that in the authors' perspective the concept of nutrition labeling includes a mandatory nutrition declaration and perhaps a voluntary FOP labeling system that may or may not accompany it. In current legislation there is also uses the notion of nutrition claim, which is different from that of nutrition declaration.
The *nutrition declaration* for a food product refers to information about its energy value and the presence of certain nutrients. Starting from 13 December 2014, Regulation (EU) no. 1169/2011 regarding the provision of food information to consumers replaces earlier regulations. Directive 90/496/EEC on nutrition labeling of foodstuffs and Directive 2000/13/EC on the alignment of Member States laws relating to labeling and presentation of food products and their advertising were repealed (EU, 2011).
The *nutrition declaration* should include the following information: (1) energy value and (2) the amount of fat, saturated fats, carbohydrates, sugars, proteins and salt.
Mandatory information may be supplemented by indicating the quantities of one or more of the following components: monounsaturated fat acids, polyunsaturated fat acids, polyols, starch, dietary fibers, vitamins and mineral substances present in the product in significant quantities (15% of the reference nutrient value, provided by 100 g/100 ml of food or 7.5% of the nutrient reference value, supplied by 100 ml for beverages).
The *nutrition claim* is any statement that indicates, suggests or implies that a food product has special beneficial nutritional properties because of the caloric value, nutrients or other substances it contains, in accordance with Regulation (EC) No. 1924/2006 on nutrition and health claims made on foods (EU, 2006). These explanations were necessary because the use of these two concepts close as meaning in the current legislation may create confusion among less well-informed consumers.
Nutrition labels of food products which are made in a clear and easy way to understand may help consumers to make appropriate choices of food and diet. The methods to declare the

nutritional value on food labels range from simple shapes (tables with or without color coded strips widely accepted - red, red-orange or pink for protides, yellow for lipids, green color for carbohydrates and white background for energy, indicating the content of protides, lipid and carbohydrate - in grams per 100 g of product and/or for a recommended portion and the energy value expressed in kJ or kcal for 100g of product and/or a recommended portion) to more complex forms (indicating the energy value of the product, the trophin content with an energy and biological role, but also the coverage degree of the daily average requirement of nutrients for a reference consumer).

Currently, on a voluntary basis, there are also other nutritional labeling methods and systems, such as the Front of Pack (FOP), where nutrition information is marked on the front of the packages, using different symbols to be more visible and thus more easily perceived by consumers as shown in Fig. no. 1:

A. The Traffic Light (TL) model - uses the chromatic coding of traffic lights to warn consumers of the high (red), moderate (yellow) or low (green) nutrient content in food with a negative impact on their health (total fats, saturated fats, sugars and salt);
B. The Guideline Daily Amounts (GDA) model provides information on the amount of energy and nutrients in a food portion, indicating at the same time the percentage of the recommended daily intake that is covered by the consumption of that food product;
C. A combined system of these two models, TL and GDA is the Multiple Traffic Light (MTL), which combines the color coding of the traffic light with the information on the amount of energy and nutrients in a food portion and the percentage of the recommended daily intake covered by food consumption;
D. Another model based on scores and colors, called Nutri-Score, classifies food by giving a score ranging from -15 for "healthy" products to +40 for those which are "less healthy". Based on this score, the product receives a letter with an appropriate color code: from dark green (A) to dark red (F). The algorithm used in determining the score takes into account both positive and negative elements. For example, the content of sugars, saturated fatty acids, salt and calories has a negative influence on the score, while the existence of fruits, vegetables, fibers or proteins has a positive impact;
E. The Health Star Rating (HSR) system use a star-based algorithm taking into account the amount of energy (kilojoules), saturated fats, total sugars, sodium, proteins, dietary fiber, fruits, vegetables, nuts and legumes.

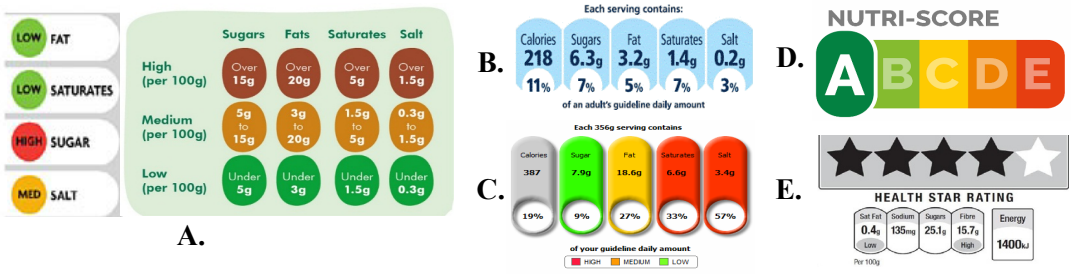

Fig. no. 1 Nutrition labeling systems

Source: http://news.bbc.co.uk/2/ hi/health/4788704.stm; https://www.macmillan.org.uk/information-and-support/coping/maintaining-a-healthy-lifestyle/managing-weight-gain/weight-loss.html#5434; http://www.tinuvielsoftware.co.uk/wisppages/wisp33a.asp; https://www.roaliment.ro/ambalaje/ etichetare/belgia-lanseaza-etichetarea-nutriscore/; https://www.news.com.au/lifestyle/health/diet/why-the-health-star-rating-system-is-flawed/news-story/1cbe4887a9ff832a4e03af496a580705

Regardless of the chosen labeling method, the nutrition information presented must be simple and easy to understand, to attract normal consumers and to fulfill its informative purpose, given that the current level of nutrition knowledge is quite low.
Therefore, placing partial nutrition information in the main field of vision, known as the "front of the package" and partial information on the other side of the packaging, such as the "back of the pack" could create confusion among consumers (EU, 2011). Therefore, the entier nutrition declaration should be in the same visual field to help consumers easily observe essential nutritional information when purchasing food. Additional forms of expression and presentation can help consumers to better understand the nutrition declaration. However, there is not enough scientific evidence on how consumers understand and use alternative forms of expression and presentation of information. This is why, lately, different studies have been conducted to identify the influence of nutrition labeling on food behavior.
Egnell et al. (2018) tried to assess the ability of consumers from 12 different countries to understand different nutrition labeling systems. Results showed that all these voluntary systems have increased consumer perceptions on the nutritional value of food. The study showed that the Nutri-Score model was more effective in transmitting information on the nutritional qualities of food, helping consumers to differentiate between products. Moreover, this model was clearly understood in various socio-cultural contexts and has become familiar to consumers compared to other labeling systems.
Considering that reading nutrition labels requires time, and understanding nutritional information requires knowledge and skills, a study performed by the East Anglia University (EAU) examined the motivational role of the theory called "regulatory focus on consumer involvement in nutrition", which reflects consumers involvement expressed as time and effort they invest to get informed about the nutrition and to choose healthy food. The study has also analyzed the effect that food involvement has in influencing the level of nutrition and nutritional behavior of consumers (Pillai et al., 2019).
Nevertheless of the chosen labeling system, including in the same visual field the quantity of nutrients and comparative indicators in an easily and identifiable form that allows an assessment of the nutritional value of food is part of the nutrition declaration and should be treated as a whole and not as a group of individual remarks.

Research methodology

Considering that qualitative studies are working better with a smaller number of participants, allowing in depth study, exploration of details and far more data collected compared with bigger groups. Even if this method has a less rigorous sampling approach it is far more time and effort efficient and also less expensive (Farrugia, 2019). The research was based on a form of purposive sampling (Robinson, 2014) respectively on a homogeneous (Jager et al. 2017) and rational sampling.
Thus, a group of participants was formed from the same environment (university - master students in the program Management of Quality, Expertise and Consumer Protection of the Faculty of Business and Tourism), with similar experience (graduates of the Faculty of Business and Tourism, who studied specialized topics on Food products and Consumer Safety in the 2nd year of the bachelor program and Quality and Food Safety, in the 1st year of the master program) sharing common interests (preparing dissertation thesis on food-related topics). All these conditions give them the ability to debate on the proposed topic and to express pertinent opinions, simplifying thus the analysis and facilitating the group interview.
The current study used a focus group interview, as an effective method to obtain information from a small group formed of 10 master students (8 female and 2 male) in the second year of the master program mentioned above - by debating a specific topic, the participation being on a voluntary basis. In a qualitative research what matters is the

relevance of the sample in relation to the proposed topic and no emphasis is placed on its representativeness. That is why a rational sample was created, students being elected by the researchers depending on their estimated relevance in relation to the research topic (Popa, 2016).

Considering that the subjects passed through an almost identical curriculum (Voinea et al., 2016) and have a good nutrition education and information, our research aims to highlight students' views on the importance of the information role of the nutrition label in adapting their eating behavior. The research was conducted in the second semester of the academic year 2018-2019, in March 2019, and intended to assess students' attitude towards the complexity, variety, accuracy and opportunity of nutrition information written on food labels and their influence on their eating behavior.

The organization of the focus group had a classical structure, the debate last 80 minutes and was led by a moderator, the professor of the two previously mentioned topics, as scientific coordinator of dissertation papers and coauthor of the current research. In the beginning the moderator made an introduction and a brief presentation of the subject by reviewing the main objectives of nutrition labeling as well as the current state of knowledge on this concept, which were accompanied by a written material containing a comparative presentation of FOP nutrition labels systems and models for the same product to make a purchase scenario.

In this context, the focus group was held based on a conversation guide through specific interactions between moderator and participants (questions and answers) and, on the other hand, between participants (as debates, questions and answers) (Kitzinger, 1995; Popa, 2016).

Using a structured approach, the conversation guide consisted in some carefully formulated questions so that clear responses can be obtained and also to avoid leading discussions in a particular direction. For accuracy and relevance of results, the moderator noticed the behavior and gestures of participants and noted their answers.

The study was based on the dimensions of the investigated subject: understanding the information included in a nutrition declaration; content opportunity of the nutrition declaration; the utility of adding a voluntary FOP labeling model or system for an easier assessment of the nutritional profile of food products; the level of suggestion for various FOP nutritional labeling models and systems through the comparative analysis presented in the acquisition scenario; highlighting the link between nutrition information and eating habits in general and in students case; the need to improve nutrition labels in terms of content and graphic representation.

Results and discussion

The research is mainly focused on exploratory-descriptive objectives and on generation of hypotheses based on the gathered data (Popa, 2016). The research results are presented in close relation with the objectives defined in the methodology and specific questions included in the conversation guide in the attempt to determine main factors that influence consumers' intention to identify healthier choices about the foods they consume:

- discussion revealed that 9 out of 10 participants read the nutrition label according to their statements: 4 always read, 4 sometimes, 1 very rare and 1 never; so most of them are interested in the nutritional profile of the foods they buy, which leads to the *hypothesis 1 - that most consumers feel the need to be informed about the nutritional profile of the food they buy*;
- considering the sufficient level of knowledge of participants regarding the requirements for food traded on the market, their nutrition value and the relationship between diet and health, they unanimously declared they understand most of the compulsory information contained in a nutrition declaration, interpretation difficulties

occurring in the differentiation of saturated fat acids from total fat and sugars from total carbohydrates; these findings may give rise to the *hypothesis 2 - nutrition information is not entirely simple and easy to understand for an uninformed consumer and can be misleading*;

- in terms of appropriateness of the nutrition declaration content, the energy value is considered to be the most important, followed by the amount of sugar and fat; discussions focused mainly on quantitative versus qualitative aspect of food intake and the necessity of dimensioning daily menus; this discussion direction may be motivated by the higher number of females compared to males; thus, *hypothesis 3* can be formulated as follows - *women are generally more careful to daily diet and assign a greater importance to fat and sugar content of products they consume*;
- unanimously, participants in the debate agreed that it is very important for the nutrition declaration to be made in relation to the daily needs of a reference consumer in the form of Recommended Dietary Allowance (RDA) or, in other words, as % of Daily Recommended Intake (DRI); *hypothesis 4* which results is that – *a simple quantitative declaration of energy (expressed in kilocalories or kilojoules) and trophies with energy and biological role (in grams or milligrams) is not enough to be understood by consumers in terms of reporting to their needed daily energy and essential nutrients*;
- in the above situation, students that were interviewed were opened to the use of a voluntary FOP nutrition labeling model/system; thus the need to implement such an additional labeling method is justified, and the combined MTL system presented in the acquisition scenario was considered to be the most graphically suggestive but also in terms of its effectiveness – through usefulness of information and ease to be understood; an explanation for this conclusion could be also not knowing the Nutri-Score and HSR systems, which are not used in Romania. Two other hypotheses can be drawn from this part of the debate: *Hypotheses 5 - consumers consider a FOP voluntary labeling model / system to be necessary; and Hypotheses 6 - the combined MTL system is the most suggestive one;*
- the participants in the debate consider that the nutrition label is not a major factor in the decision making process in the consumption choice (7 out of 10 students responded in this way), indicating the economic and socio-cultural context of the food market in our country and adjusting their responses according to the influence of exogenous factors (e.g. purchasing power, brand confidence) and endogenous factors (e.g. consumer habits, lifestyles) on their consumption behavior; thus, it results *Hypothesis 7 - the nutrition label does not decisively influence the consumption decision*;
- however, students recognize that the nutrition label is necessary and is the only way of information about the energy and biological value of food, on condition that the information is true; from this it can be deduced *hypothesis 8 - nutrition labels improve consumers' perception on the nutritional profile of foods*;
- all participants in the focus group generally recommend the need to improve nutrition labeling by: adding information about trans fatty acids and the amount of refined sugar; increasing the size of nutrition labels, especially on small packs, by attaching "accordion"/harmonic labels attached, with a reclosing system; the existence of smartphone apps that can detail and explain nutritional information; combining the HSR and TL systems to link their benefits; the use of an unique FOP system at EU level to facilitate recognition and understanding of information; to indicate, in addition to the reference intake of an average adult, the reference intake for other specific population groups. On the other hand, the need to increase the level of

nutrition education of population has also been considered to improve eating behavior, including the use of nutrition labeling. These findings lead to the following assumptions: *Hypothesis 9 - consumers consider that nutrition labeling should be improved; Hypothesis 10 - an unique FOP labeling model/system at EU level is needed; Hypothesis 11 - measures are needed to increase the level of nutritional education of population to correct imbalances in food consumption and eating behavior.*

Research is relevant and has implications both in the economic and social environment: on one hand, manufacturers/traders are interested in identifying consumer labeling and information requirements to create innovative labels for food products, and on the other hand, consumers are interested in receiving correct and fair nutrition information to allow them to make informed choices, to offer them a high level of protection and to guarantee adequate eating behavior.

This qualitative research is useful for a future quantitative one which can be statistically representative, starting from the 11 generated hypotheses, considering the fact that at the European level it is recommended that new ways of expressing and presenting nutrition labels to be based on scientific reliable and relevant research.

Conclusions

Proper functioning of the food market has an important role in achieving a high level of information for consumers, allowing them to make informed choices as essential prerequisites for both the principles of fair competition and for a real protection of consumers. The obligation to declare nutrition information on the packaging is an important support for nutrition actions as part of food and nutrition policies in the public health domain. The expected results become increasingly better by including scientific advice for nutritional education of consumers, allowing them to make healthy choices, to reconfigure their food consumption and reconsider their eating behavior.

The development of different forms of expression and presentation should be based on criteria aiming to facilitate and inform the consumer and helping him to understand the nutritional profile of foods and to allow him a rapid global assessment of a product. Ensuring a consistency in the development of additional forms of expression and presentation of the nutrition declaration is needed in order not to cause confusion among consumers.

The assessment of students' perception on the nutrition label highlighted the utility of the information included in food nutrition declarations which are mandatory as well as the effectiveness of using voluntary FOP labeling models/systems.

The study highlighted the impact of the nutrition label as an appropriate mean of establishing a properly dimensioned diet that includes healthier foods but also as an efficient way to provide information on the nutritional value of products and its influence in shaping their eating behavior. According to the study results, the importance of the informational role of the nutrition label is increasing, even though it is not always a decisive factor in changing the consumption decision.

The results of this research are reflected in a number of new and useful directions for the management of nutrition labeling, indicating new ways to improve the forms of declaration. Consumers' requirements regarding the nutrition labeling of food need a responsible approach from the producers to increase consumer satisfaction. A responsible approach suppose compliance with legislative requirements regarding the scientific relevance and accuracy of information, but also its veracity so that it does not mislead the consumer.

Using a qualitative research made possible to identify perceptions and demands of consumers that are hard to detect by carrying out a quantitative research, but had also certain

limits: first of all, the results representativeness is not ensured; secondly, the results are influenced by the focus group structure, which included a larger number of females.
New research directions should start with the proposals to improve nutrition labeling, resulted from the focus group discussions, and to address the impact of different voluntary FOP labeling models/systems on consumers and on the internal market. At the same time a further harmonization of these forms of expression and presentation is needed, and decision-makers involved have to carry out comparative studies to establish the most efficient system.
Thus, in order to strengthen the informational role of the nutrition label, there is a need for a constant exchange of best practices and experience between economic actors, as well as the involvement of all stakeholders, including policymakers.

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THE INFLUENCE OF FINANCIAL AUDITOR ON THE EARNINGS MANAGEMENT PROCESS: MANDATORY APPLICATION OF IFRS FOR THE FIRST TIME IN ROMANIA

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Abstract
The present research is focused on the amount of the discretional accruals estimated under the Romanian Accounting Regulations, as well as under the International Financial Reporting Standards referential. The purpose of our research was to provide evidence about the importance granted by the auditor when the value of discretional accruals is encountered and estimate the impact for first mandatory application of IFRS for the first time in Romania. We estimated the value of discretional accruals using the value of residuals from two equations as regression models that compute and identify the value of total accruals, one of ecuations has been used by Larcker and Richardson (2004) model. Several composed variables regarded to the auditor and to the CEO/chair variable and the auditor and industry specification variable, were used in relation with the discretional accruals. The auditor changed from a non-BIG 4 company to a BIG 4 one considering the switch between the two regulations was tested in relationship with the value of discretional accruals.

Keywords
audit, discretional accruals, IFRS, , CEO duality, , accounting, earnings management.

JEL Classification
M41, M42, M40.

Introduction

Since the 2012 we identify that 68 Romanian companies (71 at the end of 2013) had to adopt the International Financial Reporting Standards (IFRS) as their accounting referential. According to several accounting regulations, such as the adoption of this International Finanial Reporting Standards is compulsory for the companies that are listed on Bucharest Stock of Exchange.

It is useful to mention that the accounting regulations are in accordance with a previous one from 2006 on the application of International Financial Reporting Standards, according to which listed companies had to present their consolidated financial statements using the IFRS.

Similar decisions have also been taken for the credit institutions. As a fact, according to National Bank of Romania, starting from 2012, the individual financial statements for credit institutions should be elaborate and present according IFRS

The IFRS implementation is based on the fact that the role of financial accounting and reporting is to present information, elaborated in due time and in a credible manner, with significant contribution to value added. We can consider that an improvement in the accounting financial reporting quality for the individual financial statements will be achieved as a result of the IFRS adoption.
The managers and internal users are interested in selecting the methods and in determining the company's performance in such a way that they could gain private benefits. Healy and Wahlen (1999) consider that one of the factors that encourage managers to declare unreliable financial information is to obtain private benefits. As a fact, the purpose of a reliable audit is to provide reasonable assurance that the financial statements are elaborated in such a way as they are in accordance with the reality.
In this paper we want to provide information about the relevance of financial auditors when the earnings management process is encountered. We plan to identify if the quality of financial auditor has any influence on the earnings management process.

Literature review

There is a large literature that presents a relationship between the processes of earnings management and the auditor's activity (managers misrepresent the external financial reports to gain private benefits- Healy and Wahlen -1999) -. The concern about the audit quality is a problem that has increased over time due to recently financial disclosures (DeAngelo, 1981).
A similar conclusion was obtained by Caramanis and Lennox (2008) as they presented that a low audit effort is related with the higher probability for managers to report higher values of earnings management. Considering that the BIG four companies perceive higher fees than the smaller ones, Gui et al. (2010) found a positive relationship between the discretional accruals and audit fees, when the managers of the entities have high management ownership. On the other hand, Van Tendeloo and Vanstraelen (2005) discovered that having a Big 4 auditor do not influence the value of discretional accruals either if the companies report under IFRS or not.
There are also other ways to determine the value of earnings management. Studies that focused on this element are conducted on the earnings smoothing process. As a fact, the value of earnings management is detected either by smaller and positive values of net profit, either by smaller or negative values of net profit (timely loss recognition technique). For example, Chen et al. (2010) found a negative correlation between the timely lost recognition process and the type of auditor (the correlation was statistically significant for audited companies that are part of BIG four).
These studies are focused on comparing the values obtained before and after the adoption of the IFRS referential.
In order to identify if the oscillating evolution of net income, of the ratio between net income and the cash flow from operations and the variability of and the value of accruals changed, the auditor variable is taken into consideration as an individual factor of influence.
As a fact, we decided to conduct an analysis based on identifying how the reputation and the independence of the financial auditor affects the value of discretionary accruals. There is a study of Dobre et al. (2015) according to which there is no difference in the value of discretionary accruals if they are computed under both accounting frameworks .The idea of this research is to detect if the value of the discretional accruals, if affected by the type of financial auditor and with other variables that can influence them, is a negative one.

Methodology of the research

In order to estimate the influence of audit activity on the values of discretional accruals, financial data from all our 71 companies was taken from their financial statements. The first

stage of our research was based on collecting data for a three years period of time, from 2010 to 2012 as some indicators could be use one-year lag difference. The period chosen for analysis is composed of two sub-periods of time:

- The fists one is between 2010 and 2011 as the financial accounting information was presented using the Romanian Accounting Standards or RAS;
- The second one is between 2011 and 2012 as the financial accounting information is measured using the International Financial Reporting Standards or IFRS.

For each entity, some financial information was collected such as the value of total assets (proxy for the size of the entity), the value of sales, the value of debts both on short and long term, the value of shareholders' equity and other types of variables were collected. From the initial sample, we eliminated firstly the companies that were in their insolvency procedure in 2010-2013, having to implement their business reorganization plan conducted by a judicial administrator These entities are: CGC (CONTOR GROUP S.A. Arad), COFI (CONCEFA SA), SRT (SIRETUL PASCANI S.A), UZT (UZTEL S.A.), UCM (UCM RESITA S.A), Nowadays, the first three are delisted from the Bucharest Stock Exchange. We have also excluded the BVB entity as it wasn't totally complying with IFRS reporting regulation. We haven't also considered the entities that have a negative value of their shareholders' equity as they do not create financial performance both for their shareholders and for their stakeholders. Consequently, our sample size has 56 companies.

In order to estimate the value of discretional accruals, we computed it by subtracting from the value of total accruals the value of the non-discretional accruals (the process is similar with the method used by Callao and Jarne (2010), Zéghal et al. (2011), Houqe et al. (2012), etc and it has the form presented in equation (1):

$$DA_i = TA_i - NonDA_i \quad (1)$$

Where:

DA_i - value of discretional accruals component that entity i has;

TA_i - value of total accruals component that entity i has;

$NonDA$ - value of non-discretional accruals component that entity i has.

The value of non-discretionary accruals $NonDA$ is calculated by using the estimation of total accruals according to the equation (2). The technique considers that the values of $NonDA$ are computed based on the adjusted values that result from the equation (2). This way of estimation was proposed by Larcker and Richardson (2004)

$$TA_i = \beta_0 + \beta_1 \times (\Delta REV_i - \Delta AR_i) + \beta_2 \times GPPE_i + \beta_3 \times BMV_i + \beta_4 \times CFO_i + \varepsilon_i \quad (2)$$

Where:

TA_i - value of total accruals for company i;

ΔREV_i - change in revenues from one year to another for company i;

ΔAR_i - change in accounts receivable for company i from one year to another;

$GPPE_i$ - gross property, plant, and equipment for company i;

BMV_i - book to market value for company i;

CFO_i - value of cash flow from operations scaled by total lagged assets for company i;

ε_i - error term of the equation (2)

It is considered that discretionary accruals is the most widely tool that can be used by managers in order to manipulate financial statements. The discretional accruals component is actually computed using equation (3):

$$DA_i = TA_i - \hat{TA}_i. \quad (3)$$

Where:

$$\hat{TA}_i = NonDA_i \quad (4)$$

In our sample, we had some entities such as CMCM (COMCM SA CONSTANTA), PEI (PETROLEXPORTIMPORT S.A.), TUFE (TURISM FELIX S.A.), VNC (VRANCART SA), SCD (ZENTIVA S.A.), CAOR (SIF HOTELURI SA), CMF (COMELF S.A.) that haven't provided the value of cash flow from operations either on their individual site, eitheir in their individual financial reports. As there is lack of data regarding the value of cash flow from operations, we computed it, by using the approach found in Dumitrescu et al (2002, p. 42), which is presented in equation (5):

$$CFO_i = NetP_i + AMO_i - ASales_{result_i} - Financial_{result_i} - \Delta NFC_i \quad (5)$$

Where:

CFO_i - value of cash flow from operations for company i;

$NetP_i$ - value of net profit for company i;

AMO_i - value of amortization for company i;

$ASales_{result\,i}$ - value of the result of assets sales which is the difference between revenues and the expenses of the assets transferred for company i;

$Financial_{result_i}$ - financial result which is the difference between financial revenues and financial expenses;

ΔNFC - difference between the need of floating capital register in two consecutive years.

The ΔNFC is computed using information found in in equation (6)

$$\Delta NFC = \Delta Inventories + \Delta AccRV - \Delta operLib \ (without\ cash\ liabilities) \quad (6)$$

Where $AccRV$ is the accounts receivables and $operLib$ is operating liabilities.

The value of total accruals was computed by using the approach proposed by Leuz et al. (2003). They consider that the value of total accruals can be computed based on the formula found in equation (7):

$$TA_i = \Delta CA_i - \Delta Cash_i - (\Delta CL_i - \Delta STD - \Delta IT_i) - Dep \quad (7)$$

Where:

TA_i - total accruals for company i;

CA_i - change in current assets for company i;

$\Delta Cash_i$ - change in cash components for company i;

ΔCL_i - change in current liabilities for company i;

ΔSTD_i - change current debt for company i;

ΔIT_i - change in income tax payable for company i;

Dep_i - current value of depreciation and amortization for company i in the year of reporting.

The idea of research is to reveal the factors that influence the value of discretional accruals considering effect that the financial auditor has on them. The research was constructed using composed variables. This is for providing information if the financial auditor, together with other components has an influence on the value of discretional accruals. In other words, the auditor variable was composed with other specific elements that can influence the value of

discretionary accruals. The methodology based on using combined variables is similar to the methodology presented by Van Tendeloo and Vanstraelen (2005).
The discretional model component was regressed against the variables that are found in equation, considering their individual and cumulated effect (8):

$$DA_i = \beta_0 + \beta_1 \times INDP_i + \beta_2 \times AUD_i \times INDP_i + \beta_3 \times Size_i + \beta_4 \times L + \beta_6 \times Firm_{indicator_i} \times AUD_i + \varepsilon_i \quad (8)$$

Where:

DA_i - value of discretional accruals for company i;

$INDP_i$ - variable that reveals the independent characteristics of the entity such as the CEO/chair duality or the industry where the entity belongs to, mainly the manufacturing industry;

$AUD_i \times INDP_i$ - compute variable that reveals the type of influence the financial auditor has on the industry and on the duality of CEO/chair for company i;

$Size_i$ - value of firm express by natural logarithm of total assets for company i;

LEV_i - value of debts divided by own capital for company i;

$Sales_i$ - value of sales for company i for year;

$Firm_{indicator_i}$ - firm characteristic such as size, levier (indebtedness ratio) or sales;

ε_i - error term of the equation.

The selection of the independent variables from equation (8) is based on the fact that these elements were also used in the literature in order to observe the impact on financial measures. They are used as financial proxy for measuring the financial performance. The indebtedness ratio can also influence the financial performance. The Sales indicator can also influence the financial performance and it can be easily manipulated by the financial manager (Huselid, 1995). Regarding the influence of other independent variables, such as the CEO/chair duality the literature reports that the difference between CEO and Chair influence positively the financial performance. Regarding the industry component, Brad et al. (2013) provide evidence that Romanian shareholders focus on obtaining short term financial performance (especially in food and service area), while foreign investor expect to obtain a long term financial performance (for example in construction and industry field). Considering the auditor dummy variables (which has the value 1 if the financial auditor is a company that is part from BIG 4), Zeghal et al. (2011) detect a positive influence of the financial auditor (that is from BIG 4) on financial performance. We use these variables as financial performance can be easily manipulated by financial manager in order to gain private benefit.
We also conducted additionally analysis in order to detect if the financial auditor has or not an impact on the value of discretionary accruals. Krishnan (2003) and Zhao (2010) points out that discretionary accruals are positively related with the size of the auditor, or in other words that Big-4 auditors encourage the presence of discretionary accruals. Opposite opinion is found by Tennander & Olsson (2010) who reveal that Big 4 auditor are negatively related with discretionary accruals, while non-Big 4 are positively related with them. As a fact, both the type of financial auditor identified under RAS and IFRS approach was tested. In the equation was also included the switch of financial auditor from a non-Big 4 company to a BIG 4 one. The additional analysis was conducted using the formula presented in equation (9).

$$DA_i = \beta_0 + \beta_1 \times Size_i + \beta_2 \times LEV_i + \beta_3 \times Sales_i + \beta_4 \times AUD_{Ras_i} + \beta_5 \times AUD_{IFRS_i} + + \beta_6 \times CHAUD_i + \varepsilon_i \quad (9)$$

Where:

AUD_{RAS} - dummy variable that measures if the financial auditor was an entity from BIG 4 when the RAS approach is used. In this case, the variable takes value 1;

AUD_{IFRS} - dummy variable that measures if the financial auditor was an entity from BIG 4 when the IFRS approach is used. In this case, the variable takes value 1;

$CHAUD$ - dummy variable that takes 1 if the auditor switch from a non- BIG 4 company to a BIG 4 company once the IFRS accounting measures have been implemented.

Results and discussions

The purpose of this research is to provide evidence about the influence of the auditor type on the value of discretional accruals deflated by the lagged value of total assets. In order to achieve this objective, firstly, the value of discretional accruals was computed. The value of discretional accruals was calculated by subtracting the value of non-discretional accruals from the value of total accruals. The discretional accruals component was found by using the Larcker and Richardson (2004) model.

The results of the regression model are presented in Table no. 1 and are also consistent with equation (8)

Table no. 1. The influence of the CEO/chair duality and of the auditor's type on the value of discretional accruals

ELEMENT	RAS APPROACH		
	Model 1	**Model 2**	**Model 3**
Constant	0.4948*	0.4398*	0.4776*
Size	-0.0264**	-0.0225	-0.0247*
LEV	-0.00006	-0.0005	-0.00005
Sales	-0.04819	-0.0616	-0.0536
CEO	0.0194		
$CEO \times AUD$		-0.371	
$CEO \times MNF_{IND} \times AUD$			-0.0222
R squared	9.08%	9.61%	8.85%
F stat	1.274 (p=0.2922)	1.355 (p=0.2622)	1.239 (p=0.3061)
DW	2.07	2.05	2.04
ELEMENT	**IFRS APPROACH**		
Constant	-0.3103	-0.0043	-0.2639
Size	0.0162		0.0136
LEV	-0.0025	-0.0024	-0.0026
Sales	-0.0138	-0.0003	-0.0131
CEO	0.0048		
$CEO \times AUD$		0.0228	
$CEO \times MNF_{IND} \times AUD$			0.0483
R squared	5.42%	2.01%	6.75%
F stat	0.731 (p=0.5749)	0.357 (p=0.7842)	0.923 (p=0.457)
DW	1.68	1.61	1,69

*Note ** and * denotes statistically significance at 5% and 10%*

Source: Authors' calculations

From Table no. 1, there is no statistically significant influence either of the variable that reveals the effect of auditor type (if the financial auditor is a Big 4 entity or not) combine with the CEO/chair duality or with the CEO/chair duality and the manufacturing industry,

either of the chair/CEO duality influence . The idea was to emphasize the influence that the financial auditor has in case the entity that was audited by a BIG 4 company is having two different persons as CEO and as a board of directors. The models that we computed are not valid significant statistically. Moreover, the coefficients that were estimated are not statistically significantly different from zero. On the other hand, if we considered the presence of BIG 4 auditor, we can observe that the entities that have a financial auditor from BIG4 and a CEO different by the board of directors have lower discretionary accruals under RAS and higher discretionary accruals under IFRS. Similar interpretation is found for the entities that belong to the manufacturing industry that had a Big 4 auditor and that where CEO is different from the general director.
The results are presented in Table no. 2 and are based on equation (9).

Table no. 2. The influence of the auditor's type and of the change of auditor's type on the value of discretional accruals

ELEMENT	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5
Constant	0.465*	0.0006	-0.3822*	0.0003	0.0005
Size	-0.024*		0.0203*		
LEV	-0.0005	-0.0022	-0.0033	-0.0023	-0.0022
Sales	-0.0543	0.0013	-0.020	0.0017	0.0001
AUD_{RAS}	-0.015				
AUD_{IFRS}		-0.0033			-0.0001
$CHAUD$			-0.0588		
$AUD_{IFRS} \times CHAUD$				-0.0167	-0.0158
R squared	8.81%	1.44%	6.82%	1.5%	1.5%
F stat	1.233 (p=0.308)	0.253 (p=0.853)	0.933 ([=0.452)	0.264 (p=0.8508)	0.194 (p=0.94)
DW	2.05	1.62	1.66	1.61	1.62

*Source: Authors' calculations, Note * denotes statistically significance at 10%*

As it can be seen in Table no. 2 there is no influence of the type of financial auditor on the value of discretional accruals either considering RAs or IFRS as the accounting. Moreover, a switch between being audited by a non-BIG 4 company and a BIG 4 company has no influence on the values of discretional accruals considering the statistical relevance. On the other hand, a change of the auditor from a non-BIG4 entity to a BIG 4 entity would determine smaller discretional accruals found in IFRS approach. Overall, the auditing activity seems to decrease the value of discretional accruals either considering RAs or IFRS as the accounting approaches.

Conclusions

The present research proposed to identify if the financial auditor had an influence on the value of discretional accruals considering the both the RAs or IFRS as the accounting approaches. The hypothesis on which the analysis was conducted is based on the assumption that if the auditor is part of BIG four entities, the value of discretional accruals would be mitigated or in other words, smaller discretional accruals would be registered for the listed entities. To emphasize if there is any influence of the financial auditor on the value of discretional accruals, the dependent variable, the value of discretional accruals was computed by subtracting from the value of total accruals the values of non-discretional accruals.
The results are in accordance with the results found by Van Tendeloo and Vanstraelen (2005) due to the fact that the auditor's type does not statistically influence the value of

discretional accruals either if they are estimated using the IFRS accounting approach or the Romanian accounting approach. , if we don't take into account the statistically significance of the coefficients, the auditor from BIG 4 mitigates the value of discretionary accruals.
Moreover, no influence of the combined effect of the auditor type and of the manufacturing industry was revealed, but it seems that entities that belong to manufacturing industry with a BIG 4 financial auditor have smaller discretional accruals. No relevance of the combined effect of auditor type with the CEO/chair duality was found, but it seems that the combination of BIG 4 auditor and the CEO different from the borad of directors increase discretional accruals after IFRS adoption.
The lack of this research is based on the fact that variables that were included into the analysis were manually collected, the dimension of the sample is quite small (only 56 entities) and the estimation of the regression model are not statistically significant and did not provide reliable information about the importance of the auditor type on the value of discretional accruals.
Further research is going to be conducted on the value of discretional accruals by using other techniques of estimations or by using a panel model to identify specific elements for each entity.

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CONSUMERS' PERCEPTION ON CELEBRITY ENDORSEMENT ACCORDING TO THEIR AGE

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Abstract

Celebrity endorsement is a modern marketing communication tool. Celebrities are often present in advertisings, so that this phenomenon has become a trend today. This type of advertising has a high potential because consumers are attracted to the celebrities. They are overwhelmed by their everyday life, so they need ideals and role models. That`s the reason why using celebrity brand ambassadors in advertisings, is a very good marketing strategy of the producers. In the era of information and ads, the testimonials have the power to catch the consumers' attention in an advertising and to increase the visibility of the advertised product. This happens thanks to their fame, glamour, beauty and charisma. For this reason, the marketers are looking for famous, beautiful, successful, popular testimonials to drive the image of a company and their products. So, the celebrity brand ambassadors play an important role for the advertising and image of a brand, but also for the lives of the consumers. The everyday life of the stars, their behavior, the products they use, influence the consumers' orientation in life and the buying decision. The objective of this paper is to determine if celebrity endorsement works for all the people or the perception on this trend is different according to the age of the consumers. Two categories of consumers were asked about celebrity endorsement if their presence in advertisings influence their decision and buying intention of a product or not. The results of the research have shown that there really are differences in the perception on celebrity endorsement between the two groups of consumers, younger and older than 40 years. All of them think that advertising is very important and that they often change their options according to the commercial of a product. The difference is that older people tend to believe more in celebrity brand ambassadors and in their positive impact on the promoted product than the younger ones, which are more realistic and reticent with this phenomenon.

Keywords

celebrity endorsement, advertising, age, signal strategy, consumer, attention, buying decision.

JEL Classification

M10, M31

Introduction

In the era of information and communication, using celebrities in advertisings has become a trend. The people responsible with the marketing department have realized the importance of the celebrity's presence in advertisings and the influence of the famous people on the

buying decision of the consumers. Because of this the number of advertisings with celebrities grows continuously. The stars have a big influence on the behavior of normal people and can make them buy the advertised products. The testimonial advertising can be done through different channels such as television, printed, electronic and social media (Zipporah & Mberia, 2014).

People who watch an advertising featuring a famous person have the tendency to watch more the characteristics of the celebrity and to talk a lot about them. That`s also because usually people tend to watch longer the familiar faces in an advertising than the unfamiliar ones (Devue et al., 2009). Here appears the overshadowing effect. The celebrities catch the attention of the consumers, so they don`t pay anymore the needed attention to the advertised brand (Erfgen et al., 2015). Choosing the testimonial is also a big decision for marketers.

According to Byrne et al. (2003) the secret to succeed with an advertising is to find the suitable famous, credible, popular, charismatic and internationally known person. This will be sympathetic to the public and will bring the consumers closer to the promoted brand. Celebrities will also influence them to make the desired buying decision. It is clear that some people have a positive perception on Celebrity Brand Ambassadors and some people don`t. Some of them tend to include this category of advertising in the fake news category. So that this type of commercials don`t influence them or their buying decision (Tanțău et al., 2018).

Several studies have shown that the behavior of consumers differs depending on the generation to which they belong (Popa & Pelau, 2016). The question is if the perception of celebrity endorsement is the same according to the age category of the consumers. The participants in this research are two group of consumers with the age under and above 40 years. The objective is to observe how receptive to the celebrity endorsement are the older consumers in comparison to the younger ones.

Literature review

A famous person is someone who is recognized by the public. Using celebrities in advertising is a very good strategy because they catch the consumers' attention through their image, carrier and name. Celebrities are like human brands. Their professional activity and their personal life is a point of interest for the consumers. Marketing specialists know how to gain from this and choose the right celebrities to promote specific brands, so that the companies sell nowadays due to celebrity endorsement (Nistoreanu et al, 2017; Holmes & Redmond, 2014).

A public person has most of the time a strong influence on the buying behavior of the customer. This is not the case of a normal person as well. (McCracken, 1989). Commercials with celebrities are typical for the modern era of advertising. Public persons can transfer their public image on the advertised brand. This phenomenon was accepted as a trend at the beginning, but now it has become a marketing communication tool. Year by year, the companies invest important amounts of money in celebrity endorsement. The spent amounts are represented by millions of dollars, for contracting famous stars like football or basketball players, models, singers or actors. For example, Pepsi has collaboration contracts with a lot of famous people like Cindy Crawford or Puff Diddy, which promoted Diet Pepsi (McCracken, 1989).

This is a proof that celebrity endorsement is a very popular communication tool. The producers buy consumers' loyalty with a high price, through a celebrity. An important aspect is the match-up between the promoted product and the celebrity. That`s the reason why all the marketers and company owners must pay a lot of attention in choosing the right testimonial to promote their products (Bergkvist & Zhou, 2016). The endorser has to fit with the promoted product as there must exist a connection between brand and celebrity. In this way, the advertising is really efficient. The best-case scenario is when there is a natural

relationship between the profession of the celebrity and the advertised products. Therefore, for example, the people from sports are efficient in convincing the audience about the sports products (Till & Busler, 2000).

Of course, a celebrity brand ambassador can also have a negative impact on a brand or for the image of the company. For example, if the testimonial has an inappropriate behavior or a negative image, this fact can be reflected in the promoted product. If consumers no longer like the celebrity brand ambassador, they will no longer use the promoted product.

The advertising of multiple brands by a single celebrity can also destroy the marketing campaign of a specific brand. Because in this way they lose their power of persuasion and credibility and the relationship celebrity-consumer will get slowly lost. As example David Beckham, the football player advertises perfumes, shoes and drinks. So, the consumers remember they saw David Beckham in commercials, but unfortunately, they don`t remember the advertised product anymore. The commercial no longer catch the consumers` attention on the product, which is detrimental to the brand (Makumbura, 2015). So, the match-up brand-celebrity is extremely important, celebrities must fit together with the advertised products. The choice of the presence of a testimonial in a commercial should be made by context and not random.

Celebrity brand ambassadors are also a method of money-burning. Consumers pay a lot of attention to their social position. People usually want to wear the right clothes, to buy the right perfume, to drink the right drink, to eat the right food. The consumers` perception is influenced by the presence of the famous person. For example, if a consumer watches two commercials for two different brands, where one includes a testimonial and one not, he will probably consider that the brand which is promoted by the famous person is better and has a higher quality. So, this influences his buying decision. The testimonials are like a reference group for a lot of consumers. They are attracted by celebrities, invest time and energy to look like them, to be closer to them. This happens because celebrities become idols, valued characters for the consumers through their social media presence and lifestyle. This is a theory about social influence. The consumer wants to have a behavior similar with the celebrities. For this reason, they buy the brands promote by testimonials, in the attempt to shape their own image. (Alberta et al, 2017).

The testimonials serve as a signaling strategy for companies. They can easily increase the market acceptance and the sales, making in this way the advertising very efficient and using celebrity endorsement as a good investment. Besides, the stars bring their own experience with them. Often people are motivated by the attitude, emotions or behavior of the public person (Bagozzi & Dholakia, 2002). For the celebrity endorsement is good that the fans of the testimonials are actually the consumers who react enthusiastic and positive to the brand, so that they rise the value of the brand (Schau et al., 2009).

The stars differentiate themselves from the normal people through characteristics like attractiveness, beauty, an extraordinary lifestyle or charisma. According to Friedman, a celebrity brand ambassador–is a person who is known by the public for his or her achievements in other areas than that of the endorsed product. The celebrities easily reach a high level of attention, recognition and loyalty from the side of the consumers. Celebrity endorsement is a real chance today, in the era of intense competition. All the companies have as a main goal to encourage consumers to buy their products and remain in their minds (Friedman et al., 1979). The testimonials can be like a catalyst. “Celebrities as brands” is a true sales challenge. On the other hand, testimonials can also have a negative impact on the image of a company and bring disadvantages for it. If they have a negative image or an inappropriate behavior, this reflects also on the promoted brand. If there is no more a connection between consumer and celebrity, there will also don`t like and don`t buy the advertised product anymore.

More than 50 billion dollars are spent every year on celebrity brand ambassadors (Zamudiu, 2015). Companies invest huge amounts of money in celebrity advertising. Despite of this, an important cost is sometimes overlooked, namely: some of the brands may be rejected by the testimonial they want to have in their commercial while negotiating. This rejection can be critical, because the strategy of a company can depend all on a specific testimonial, who should promote the brand and product. The celebrities are advised to become more popular and famous, to have more followers on the social media, so they can be attractive and persuasive in the role of a celebrity brand ambassador. So, the choice of a celebrity brand ambassador is very difficult and important for a company.
Celebrity endorsement is an alliance between brands. The celebrity is the human brand and the product is the brand of the company. Both should match together and have an impact on the buying decision of the people. This kind of advertising also helps on the market differentiation. Famous persons usually transfer their personality on the advertised brand. This happens most in the case of beauty industry. Drew Barrymore for example, the actress, signed with the company Cover Girl, a cosmetic producer. This happened thanks to her "energetic yet authentic spirit", while she was taking the commitment to "bring myself and my personality into it" (Zamudio, 2015).

Research methodology

The objective of the research is to determine the consumers' perception on the celebrity endorsement, according to their age. The 12 items related to celebrity brand ambassador contain affirmations about their presence in commercials, if the celebrities influence the costumer's behavior or not, if these have any impact on their buying decision or not. The items have been included in a multiple topic survey, which has been realized in the period December 2018 - January 2019 in the urban population, on a sample of 252 respondents. The validity of the sample related to the consumers' perception on the celebrity endorsement is given by the Cronbach Alpha value. In this case the Cronbach Alpha value of 0.847 shows a good validity of the data.
In this research we focus on the differences of behavior and perception depending on age of the respondents. The sample has been divided into two groups based on their age: group 1 (defined as G1) consisted of people younger than 40 years and group 2 (defined as G2) included people older 40 years. The sample includes 252 valid responses, out of which 161 respondents with ages younger than 40 years (G1) and 91 respondents with ages older than 40 years (G2). Thanks to the discriminant analysis, we have tested with help of the SPSS 20 the significant differences between the two groups. The results are presented in the following.

Results and discussion

The results of the research show that there are items that show differences for the two age groups and also there are items which show that the consumers' perception on celebrity endorsement is quite similar, regardless of the age of the respondents. From the 12 analyzed items 6, also half of them, show significant differences, having $p<0.10$. The rest of 6 items show similar results for both groups. The results for all the items can be observed in table 1.
The perception which shows the highest differences is the idea that the products promoted by celebrities are luxury products ($F=10.427$, $p=0.001$). People older than 40 years tend to agree more with the affirmation that the products which are promoted by testimonials are luxury products ($MG2=3.3407$), while young people are more realistic and tend to disagree with it ($MG1=2.5901$). This comes out also from the item which says that the celebrities guarantee for the quality of the promoted products. In this case the results were as follow $F=4.910$, $p=0.028$. So again people over 40 years think that the celebrities guarantee for the quality of the promoted products, more than the other ($MG2=2.8462$). Consumers with the

ages smaller than 40 don`t agree that much with it (MG1=2.3602). This shows that younger people are more open to information and they don`t trust commercials with celebrities that much. Another difference in the perception between the two group of consumers would be also regarded on the quality of a product promoted by a testimonial (F=3.752, p=0.054). Consumers from the second group, also over 40 years think that the products from commercials with a celebrity have a higher quality then products from normal commercials, without celebrities (MG2=2.8132). Younger people are more reticent to this affirmation (MG1=2.3851). The next affirmation which shows differences between perceptions according to the age of the people would be that the products promoted or worn by testimonials, provide them a better image in the society (F=3.731, p=0.055). Again people over 40 years tend to agree more with it (MG2=3.3736), then the younger people (MG1=2.9006).

Table 1: Discriminant analysis values based on grouping variable age

Item	Mean G1	Mean G2	SD G1	SD G2	F (1,250)	p
I often buy products that are worn or promoted by celebrities	2.3913	2.4396	1.60146	1.73339	.050	.824
I pay more attention to the commercials which include celebrities	2.8075	3.0000	1.80456	1.81965	.658	.418
I think the products promoted by celebrities have a better quality	2.3851	2.8132	1.62812	1.78208	3.752	.054
I think the products promoted by celebrities provide me a better image	2.9006	3.3736	1.87485	1.85381	3.731	.055
Celebrities guarantee for the quality of the promoted products	2.3602	2.8462	1.59903	1.79458	4.910	.028
I think the products promoted by celebrities are luxury products	2.5901	3.3407	1.66385	1.95061	10.427	.001
I think I have a better social status if I wear products promoted by celebrities	2.0932	2.4286	1.47395	1.64751	2.763	.098
I buy a product promoted by a star only if I like him/her	2.3043	2.3846	1.68465	1.73057	.129	.719
I believe celebrities bring benefits to the products they promote	3.7391	4.2198	2.20659	2.12813	2.830	.094
Celebrities can also have a negative impact on the image of the promoted products	4.5342	4.2637	1.80635	1.84893	1.281	.259
Consumers tend to idolatrize and copy certain public figures	5.1242	5.0000	1.80886	1.75752	.280	.597
A consumer often changes their preferences depending on the advertising	4.6832	4.8352	1.49341	1.46260	.611	.435

Observation: G1 are people younger than 40 years; G2 are people older than 40 years
Source: Own research results

The item, which says that celebrities bring benefits to the products they promote, shows a little difference of perception between the two categories (F=2.830, p=0.094). Younger

people don`t agree that much with this idea (MG1=3.7391), as older people do (MG2=2.8132). The last affirmation which shows differences between the mentality of two generations is having a better social status when using or wearing products promoted by celebrities (F=2.763, p=0.098). Older people tend to agree more with the idea that the products promoted by celebrities influence positive the social status (MG2=2.4286), while the group of people under 40 years don`t (MG1=2.0932).
There are also similar perceptions regarding celebrity endorsement, despite of the age of the consumers. We can observe this in items like the one in which they often buy or wear products promoted by celebrities (F=0.050, p=0.824>0.10, MG1=2.3913, MG2=2.4396). Another affirmation which both groups tend to disagree with is that they pay more attention to the commercials which include celebrities then to the commercials without celebrities (F=0.658, p=0.418>0.10, MG1=2.8075, MG2=3.0000). Also both people younger and older than 40 years don`t buy a product or don`t use a service only if they like the testimonial who advertise this (F=0.129, p=0.719>0.10, MG1=2.3043, MG2=2.3846). Another perception which both groups of respondents have is that a celebrity can also have a negative impact on the image of the promoted product (F=1.281, p=0.259>0.10, MG1=4.5342, MG2=4.2637). They all also agree with the fact that the consumers tend to idolatrize the stars and tend to copy their image or lifestyle (F=0.280, p=1.281>0.10, MG1=4.5342, MG2=4.2637). The advertising of a product or service seems to be important for people younger than 40 years but for the older ones as well. They often change their preferences according to the advertising with celebrities (F=0.611, p=0.435>0.10, MG1=4.6832, MG2=4.8352).

Conclusions

The results of the research show that are both differences and similarities regarding the perception of the consumers on celebrity endorsement according to their age. As differences it come out that the people over 40 years tend to believe more in the celebrities from the commercials. They think that the celebrities have a positive impact on the products or services they promote, that a product which is advertised by a celebrity has a higher quality and that the testimonial guarantees for this quality. The group of people over 40 years also tend to believe that the testimonials promote luxury products, which provide the consumers a more attractive image and a better social status. On the other hand, young people are more realistic. They tend to disagree with all this and don`t believe that a product promoted by a celebrity is necessarily a luxury product, that it has a higher quality or it provides a better image and social status.
Both groups of respondents also think similar in some situations. They don`t pay more attention to a commercial only if this includes a celebrity or don`t use or wear a product for this reason. They all admit that consumers usually idolatrize famous people and try to look like them or copy their lifestyle. Also, both categories of consumers agrees with the fact that commercials are very important and that they often change their preferences according to the advertising of the product.
So, it seems that celebrity endorsement has a greater impact on the people over 40 years old than on the younger ones. A reason therefore would be the fact that younger people have more access to information and can search a lot about a desired product or service and it doesn`t need to be promoted by a celebrity brand ambassador.

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CYBERSECURITY EDUCATIONAL PROGRAMS: COSTS AND BENEFITS

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Abstract

The 21st century is characterized by the emergence of cyberspace as a new frontier, that fundamentally transforms the global economy and the society itself, through the possibility of instant access to information, by facilitating global communications, as well as creating multiple economic opportunities. The globalization of virtual space brought highlighted the lack of international cooperation in the development of unitary cyberdefence strategies.

In this context, both public and private organisations put effort in creating a safer cyberspace, by trying to prevent an action before recovering from an impact. In this sense, the cost of cybersecurity is analysed by reviewing different researches and confronting them with general economic hypothesis, in order to better understand how can a cyberattack be measured.

Even if, no official standard has been yet adopted in order to measure and control the costs associated with implementing cybersecurity programs, in contrast with the potential costs of cyberattacks, multiple studies have analysed different scenarios, resulting in measuring patterns and models. So, what are the main constrains that organisations face when dealing with cybersecurity? How are these constrains interconnected and how can they be measured?

Thus, the present paper aims to highlight some possible responses for these questions in terms of a cost-benefit approach, by highlighting the need of an educational model in order for organisations and countries to have more and better trained specialists.

Keywords

Cybersecurity, data integrity, cybersecurity costs, preventive actions

JEL Classification: F52, M15, O32, O38

Introduction

Cybersecurity can be defined as a set of actions taken by organizations in order to protect from cyberattacks all Internet-connected systems, starting with hardware and software resources, as well as data (information). Taking into consideration the increasing number of cyberthreats, a need for cybersecurity regulations is highlighted by various organizations and governmental bodies in order to create a common language in protecting the cyber environment by using modern information technology.

But, developing the necessary technology that can prevent or efficiently react to cyberattacks in order to protect the integrity, availability, reliability and confidentiality of information involves multiple resources that can be measured in time, human resources and money. When talking about cybersecurity costs, most studies focus on costs from a financial

perspective, more exactly: budgeting a prevention strategy and determining the economic impact of a cyberattack (Benton and Radziwill, 2017).
Different perspectives in measuring the costs of cybersecurity have been presented in multiple studies, starting with the introduction of the concept of "cyberquality" in 1995, by The American Society of Quality. Other theories build different models on cost estimation by using resources from other domains, for example Campbell (2003) and Gordon (2011) examined the financial impact of cyberthreats by using a stock market performance model.
In this context, the present paper represents an exploratory attempt to identify different perspectives regarding cybersecurity in terms of costs and benefits. Thus, the research methodology is based on a literature review in order to highlight the importance and role that resources invested in the cybersecurity sector have, from a preventive point of view, the main goal being to make it easier for organizations to study, monitor, and control the costs associated with cybersecurity.

1. Analysis of cybersecurity good practices across different industry sectors, government and military structures - A literature review

The Information Technology and Communications (IT&C) sector has registered a fast and complex evolution in the last decades, information exchange and communications becoming a very important resource for society and the individual itself. Information stored and processed on computers became so important for the modern society that its confidentiality, integrity and accessibility must be trustworthy in order for international, regional or national fundamental structures to function.
For example, if a bank's database, which holds all the sensitive information regarding its customers, is corrupted, the bank's will be ruined as a business and, in a best-case scenario, refunds will be provided for this error. Thus, the solution will involve huge financial costs, for all involved parties, the bank, the clients, insurance companies etc. But, when talking about classified information, stored on military servers, its loss will have a strong impact on national or international security, for a certain country or a region, involving multiple costs for all impacted bodies, not just financial ones.
Perspectives regarding the financial costs of cyberattacks, the increasing cyber threats associated with the growth of cyber-crime organizations, all these aspects illustrate the need for an intelligence-led solution that can address these rising challenges. In the need for a more complex methodology to fully comprehend cyber threats, the real costs associated to them and the potential damages that these attacks can generate, multiple researches have been made, from the academic environment, to military research, multiple IT global businesses being involved, as in the end everyone can be a potential target.
One of the reports that highlight society's critical needs is published by Intelligence and National Security Alliance (INSA) Cyber Council (2011). This subject is analyses having as a central hypothesis that critical infrastructures are at significant risk to this modern form of warfare. Much of the world's critical infrastructure, including the energy sector, finance or transportation sector, was created and netted before these security risks became apparent. Even if all critical infrastructures have implemented security features, many still remain vulnerable to attackers, as legacy software (which is still popular in many organizations) can provide trap doors to an apparently modern-secured network. (Intelligence and National Security Alliance, 2011).
Cyberattacks impact on businesses can be measured by their economic impact and the cost that they generate. According to a CISCO research that involved more than 3600 organizations across 26 countries, more than 53% of all attacks caused financial damages of more than 500,000$/incident (where 8% of the incidents generating costs of over 5 million $/incident), including, but not limited to, revenue lost, customers, opportunities and out-of-pocket costs (CISCO, 2018).

Furthermore, security professionals, in their efforts to protect their organizations face many roadblocks. For both public and private sector, the main constraints when managing security issues are: financial constraints, compatibility issues regarding legacy systems that are still in use and lack of trained personnel. The same CISCO report compares these main three constraints over a period of three years – 2015-2017 (Figure 1).
The research results highlight that budget constrains have represented the main obstacle for more than 3600 organizations, in their attempt to prevent or correct cybersecurity issues. On the other hand, while budget constrain related barriers decreased over the years, another issue is rising (by approximately 10 % in only 3 years) and challenges modern organisations and the security of cyberspace – lack of trained personnel in dealing with modern cybersecurity protocols and threats.

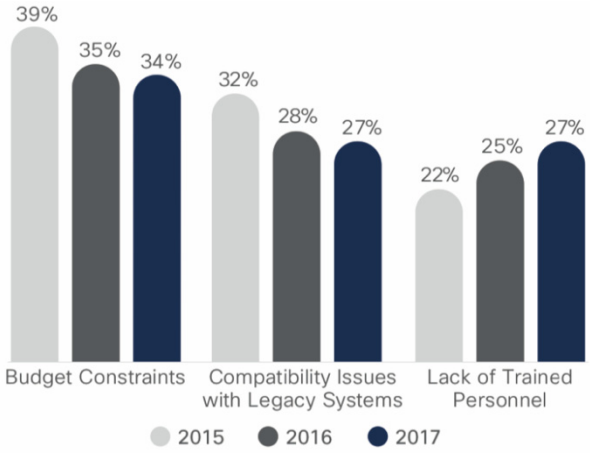

Fig. no. 1 The main constrains public and private organizations face when dealing with cybersecurity issues

Source: Cisco Annual Security Report, 2018, available at: https://www.cisco.com/c/dam/m/hu_hu/campaigns/security-hub/pdf/acr-2018.pdf

Thus, the emerging trend regarding the lack of specialized human resources is also highlighted by different studies. Moore et al (2016) conducted an interview on approximately 40 organizations, discussing mainly with executives responsible for cybersecurity, like Chief Information Security Officers (CISOs) or Chief Information Officers (CIOs), from different sectors like healthcare, financial, retail and government. A total of 78% of the respondents were from the US, while the difference had other international headquarters. The interview was structured in multiple sets of questions, focused on three main areas: identifying threats, prioritizing and managing preventive and corrective actions and decision-making process for cybersecurity investments.
The main results revealed small differences between certain industry and governmental sectors, but remarked, for all the analysed sectors, a growing trend that organisations are facing: finding qualified cybersecurity professionals tends, in general, to be much more challenging that finding the necessary financial resources to support cybersecurity.
At a first analysis, a decrease of budget constrains over the years should result in more financial resources that can be invested in multiple activities regarding cybersecurity. According to quality management principles and CAPA[1] programs, one of the most

[1] corrective action/preventive action programs focus on the investigation and solving of problems, by identifying causes, taking corrective actions and preventing recurrence of the root causes

important actions that need to be financed are the preventive actions, that are implemented prior to the occurrence of a cyberattack, representing proactive tools that involve monitoring a system's effectiveness in terms of data protection.
Thus, in this context, a very important preventive action that a company or an organization can include in its quality management program involves training activities in order to have specialized personnel that can efficiently manage the 5 core functions of an effective cybersecurity plan - identify, protect, detect, respond and recover (Pelton and Singh, 2015).
So, a main hypothesis is that organizations define their cybersecurity strategy based on preventive actions, that can be implemented and monitored by trained personnel. Therefore, the costs associated with cybersecurity trainings for the employees responsible with security in this domain are considered investment costs, that result in long term benefits for the organization. In other words, taking into consideration the actual costs that a cyberattack can generate, including a training budget in the organisation's financial planning can save a lot of money in terms of corrective actions, when an actual threat becomes an attack.
But, when confronting different research results, the correlation between the 2 trends does not meet the above hypothesis. Thus, a decrease of budget constraints correlated with an increase in finding specialized cybersecurity professionals, means that organizations, despite of the fact that they are aware of the lack of specialized personnel, do not redirect financial resources in cybersecurity trainings and specialization programs. This fact can be determined by multiple causes like: the sophistication of cyber threats, as their complexity evolve faster than the personnel can be trained, IT specialists are not interested in this specialization as access to critical data comes with additional risks, insufficient training programs and educational resources that can be accessed by cybersecurity experts.
Thus, considering the way humans, companies, government and technologies interact, security education is desirable to strengthen the knowledge of all involved parties, starting with government officials, big IT corporations and citizens with regard to cybersecurity issues (Li & Liao, 2018), in this sense, specialized educational programs having an important role.

2. The need of Cybersecurity educational programs as a main instrument in preventing cyberattacks

Cybersecurity educational programs should represent a valuable resource for a nation, a company or an international organization. According to different studies, graduates of computer science programs should have taken at least one cybersecurity course over the years and more and more universities are introducing new courses regarding cyberspace security in order to meet society's emerging needs regarding data protection.
But, in this context, where technology and the internet evolve with the speed of light, "at least one cybersecurity course" can be consider enough to form a cybersecurity specialist?
Taking into consideration the wide spread of cyberthreats and the multiple and complex typologies of cyberattacks, cybersecurity officers should be well more than well trained in order to be able to working with and protect national security information or back databases.
In order to better understand the complexity of this domain, a diagram representing the main cyberattack types is provided below (Figure 2). Thus, one can understand that a well-built cybersecurity educational program involves resources from multiple domains and, in order to keep in touch with technology's fast evolution, research and development activities and implicitly their associated costs must be assumed.

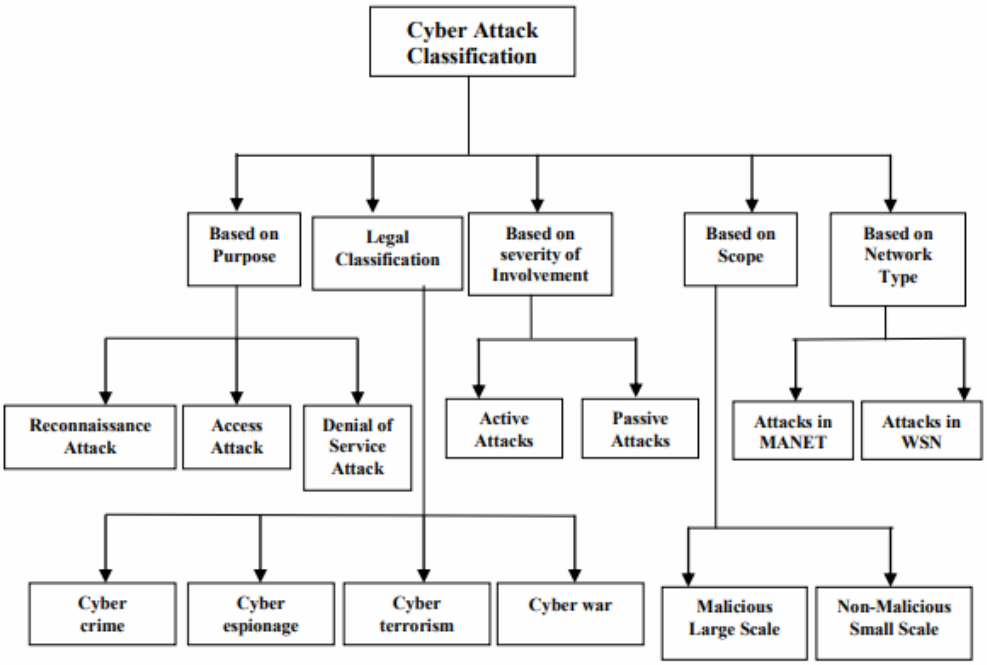

Fig. no. 2 Cyberattack classification diagram
Source: Uma and Padmavathi, 2013

Information security is still a relatively new profession (and its branding as cybersecurity is even more recent), which means there is still some debate about the level of professionalism within it (Furnell et al, 2017). Therefore, governments or companies are still investing more in corrective actions than in preventive strategies. The educational resource has been recently considered as a main priority by different national cybersecurity strategies, or by international organizations like NATO.

The academic environment and the training industry should have a more important role in developing this domain and in building cybersecurity strategies. Skills-dominant approaches and delivering authorized trainings to students or workers represent main resources that form professionals in data security. Even if educational costs or training fees can cost organizations more than expected, there are more benefits realized from making those expenditures. Some studies (Böhme, 2010) highlight that there is a baseline level of security driven by preventive efforts for risk mitigation, but, at some point, the costs level out, reducing external breaches and making organizations realize that it would cost much more to correct than to prevent.

When talking about cybersecurity educational programs as a main instrument in preventing cyberattacks, the main focus areas (education, training and research) and their main determinant factors should result in identifying improvement strategies (Figure 3).

Fig. no. 3 Conceptual model – The relationship between the key elements of cybersecurity education
Source: own research

Thus, a set of recommendations and good practices have resulted from the analysed researches:

- local industries (mainly IT&C companies or the banking sector) should be involved in supporting educational initiatives, such as paid internships and trainers provision;
- government structures should and the academic environment should work in a close relationship, by promoting temporal professional exchange of information and good practices in order to promote security's role in cyberspace;
- international organisations and partners can be a good source of information in this field;
- availability of more virtual training environments in order to connect more specialists from around the world;
- building quality research upon existing capabilities and structure, including experienced investigators, funding, research centres and feasible projects.

Conclusions

Beside the value added to multiple global economy sectors and to the modern society itself, cyberspace can generate a number of risks and vulnerabilities for both public and private sector of a country, even with regional or global consequences.

Thus, the notion of cybersecurity represents a main topic for multiple international organizations that constantly analyse potential threats in order to develop security strategies against cyberattacks. In this context, skills associated with professionals working in this field tend to be more complex than IT-specific ones. Adding complexity in assessing a particular qualification requirement is the risk associated with security operations, security professionals aiming to have a higher level of access to critical data.

Therefore, in order for an organisation, both public or private, to benefit from the support of specialized personnel in preventing cybersecurity breaches, a sustainable approach must be adopted and specialists must act as risk advisors, by thinking in terms of the cost-benefit aspects of cybersecurity investments.

Besides investing in preventive technologies that aim to avoid the negative effects of cybersecurity breaches, organizations must invest first in educating and training their own personnel, so that these technologies can be used in an efficient manner and some of the cybersecurity risks associated with potential future breaches can be transferred in the preventive action zone.

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DIFFERENCES AND SIMILIARITIES IN THE FOOD WASTING BEHAVIOR OF CONSUMERS DEPENDING ON AGE

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Abstract

Food security and food waste are two of the most debated topics nowadays, as they have important effects on the economy, the society and the environment. Every year big quantities of food waste are produced at all levels of the supply chain, from farmers, food producers, retail, hospitality industry and final consumers. As several studies point out that a big amount of the food leftovers are produced by the final consumer, researchers in the field have tried to determine the demographical, behavioural and psychological factors that affect food waste. The objective of this paper is to determine the similarities and the differences in the behavior and perception of consumers related to food waste depending on age. The results of the discriminant analysis have shown that people younger and older than 40 years have similar habits regarding the process of buying, preparing and storage of food. Both generations feel bad for wasting food, but none of them recycles food leftovers. The differences for the behavior of the two generations refer to the fact that the young generations prefer to eat outside their own home, while people older than 40 years prefer to cook and eat at home.

Keywords

Food waste, food recycling, consumers, consumer behavior, generation.

JEL Classification

M10, M31

Introduction

The developments in the social and technological fields have led to a modernization of society in which food has become a common good. As a result, great amount of food leftovers are produced every year (Thyberg and Tonjes, 2016). New consumer trends characterized by overcrowded schedules, an increased emancipation and convenience orientation of consumers have determined individuals to take less care of the efficiency of bought and prepared food. The big quantities of food waste have negative effects on several fields such as economy, society and environment (Heikkila et al. 2016). From an economic perspective, the big quantities of unused food produce big financial losses for all actors in the supply chain (Cicatiello et al. 2016), determined by the use of unnecessary production capacities, resources and overconsumption (Chaboud and Daviron, 2017). The waste produced by food leftovers has a negative impact on the environment by producing greenhouse effects or water waste (Schmidt and Matthies, 2018; Food and Agriculture Organization of the United Nations, 2013; Chaboud and Daviron, 2017). Not less important

are the social inequities, by which a part of the population has too much to eat, while another part is starving. For all these reasons, researchers focus on the factors that determine food waste with the purpose of reducing this phenomenon with several negative implications for our society. As the phenomenon of food waste has increased, the problem of food security in the world has become more actual and important than ever.

Literature review

Several researches have shown that the biggest quantity of waste is produced by the final consumers (Garcia-Herrero et al., 2018; Nikolaus et al. 2018; Stenmarck et al., 2016) and that it is affected by several demographic, psychological and behavioral factors. Taking into account the importance of the consequences of food waste, it is important to determine any kind of factors that can create food leftovers, in order to reduce this phenomenon.

Both attitudinal and behavioral studies regarding food waste have proven the fact that socio-demographic characteristics have a significant impact on the amount of food thrown away. Females have been shown to be more wasteful than males (Porpino, 2016); households with higher incomes buy more food that they end up not consuming before it expires in comparison to lower income households (Jörissen, et al. 2015; Secondi et al., 2015); large families, especially if they have children waste more food per capita than people who live alone (Richter & Bokelmann, 2018; Nikolaus et al. 2018; Porpino, 2016) etc. However, in the context of the current ageing population, it is particularly important to explore the influence that age has on the attitudes and behavior that lead to food waste. Old age is associated with thrift in many cultures and studies have shown that older people tend to waste less food than younger one. For example, Quested et al. (2013) found that when food is prepared by older people, less is wasted, while Visschers et al. (2016) found a significantly higher level of desire not to waste food among older people. In addition, Koivupuro et al. (2012) concluded that people with ages above 64 waste less food in comparison to all other age groups, making them the category that is the most efficient when it comes to food management. These findings were confirmed by a large study on 27 European countries which concluded that individuals with ages between 45 and 54 wasted around on third of their food, while people over 65 wasted only one sixth of the food bought (Secondi et al., 2015). In contrast, Stancu et al. (2016) found age and other socio-demographic characteristics to be less significant in predicting food waste in comparison to psychological traits (e.g., perceived behavioral control) and food related routines (i.e., shopping plans and leftover reuse). In addition, Qi and Roe (2016) found no differences in terms of attitudes and awareness related to food waste based on age and concluded that age segmentation is less likely to provide scholars with significant insights related to food waste than other behavioral and attitudinal segmentations. In spite of these contradictory findings, most of the available studies reinforce the idea that age remains a significant factor in the understanding of food consumption patterns and there are multiple explanations for the way in which age influences the amount of food wasted through an impact not only on attitudes about food, but also in the practices related to cooking and eating.

Scholars argue that the negative experience that people have gone through dramatic political or economic events such as WWII when there was a food shortage or periods of high inflation when food was inaccessible explains why older people tend to waste less food (Visscher et al., 2016). These experiences might have had an impact on older people's attitude about food and made them more concerned about not wasting food. This is supported by studies which show that older people are more likely to be aware about the problem of food waste and to have sought information on how to prevent this (Neff et al., 2015). Studies find that the concern regarding food waste among older consumers is not generated by concerns regarding environmental pollution or social inequities, but rather by concerns related to the financial and moral aspects of waste in general which can be linked

to the way in which older generations were brought up to value efficiency and thrift (Hebrock and Boks, 2017).
Besides attitudinal differences resulting from the way in which different generations were educated during childhood and the experienced that they were exposed to while growing up, studies also point towards the existence of various behavioral differences that result from the changes in lifestyle that happen as individuals grow older. For example, especially when they live alone, older people have more predictable schedules and desires about food which makes it easier for them to accurately predict how much food to buy and to cook (Winter et al., 2016). Elderly people also tend to spend significantly less on food items, partially because they have lower disposable incomes in comparison to most other age categories (due to the decrease in revenues resulting from retirement) and also spend more on food consumption at home and significantly less for food consumed in public places (Chen et al., 2017). In fact, Gaiani et al. (2018) found that elderly people tend to belong to the category of frugal consumers who consume food at home, very infrequently eat fruits and vegetables and declare that they waste almost no food.
Apparently, a big part of the wasted food quantity is determined by inefficient consumption patterns related to food. Especially in developed countries where food expenses represent only a small part of the income of the consumers, so that, there is no incentive for reducing the phenomenon of food waste (Aschemann-Witzel et al., 2017; Nikolaus et al., 2018; Richter and Bokelmann, 2018). Behavior patterns that favor food waste can be observed from the moment of buying the food, during the preparation until serving and consumption (Schmidt and Matthies, 2018). In the buying phase, consumers have the tendency of buying exaggerated quantities of food or they buy products with a short shelf-lifetime that are not consumed until they spoil (McCarthy and Liu, 2017). During preparation time, several consumers don't have the ability to estimate the necessary quantities of food, which leads again to exaggerated quantities of cooked food, that are not consumed (Gaiani et al., 2018). Another typology of modern consumers refers to a conscious-fussy consumer who does not eat the food he/she does not like or who forgets the existing food in the fridge (Gaiani et al., 2018; McCarthy and Liu, 2017).

Research methodology

The objective of the research is to determine the demographic characteristics that affect the consumer's behavior related to food wasting. The 33 items related to food waste have been included in a multiple topic survey, which has been carried out in the period December 2018-January 2019 in the urban population, on a sample of 252 respondents. The validity of the sample related to food waste is given by the Cronbach Alpha value of 0.729.
In this article we focus on the differences of behavior and perception depending on age. The sample has been divided into two groups based on their age: group 1 (defined as G1) consisted of people younger than 40 years and group 2 (defined as G2) included people older 40 years. The sample includes 252 valid responses, out of which 161 respondents with ages younger than 40 years (G1) and 91 respondents with ages older than 40 years (G2). With the help of the discriminant analysis, we have tested with help of the SPSS 20 the significant differences between the two groups. The results are presented in the following.

Results and discussion

The results of the research show that there are behaviors and perception that there are behaviors that show difference for the two age groups and also similar ones. From the 33 analyzed items 15 show significant differences, having $p<0.10$ and 18 items are similar for both groups.
The behavior which shows the highest differences is the habit of eating and cooking at home ($F=48.816$, $p=0.000$). People older than 40 years prefer to eat and cook at home ($M_{G2}=5.08$),

while young people prefer to eat out (M_{G1}=3.41). This is also confirmed by the item, which describes the preference of consumers to eat outside their homes, even if they have food at home (F=22.559, p=0.000), where the mean of perception is higher for the young people (M_{G1}=3.56) in comparison to people older than 40 years (M_{G2}=2.42). Another behavior that differs in a significant way is the planning of the shopping experience. People older than 40 years have a constant schedule for going shopping (F=25.591, p=0.000, M_{G2}=4.10) for instance once a week, in comparison to younger people (M_{G1}=2.83). This is also confirmed for the planning of the shopping experience (F=4.832, p=0.029<0.05), where older people prefer to do a shopping list (M_{G2}=5.18) in comparison to people younger than 40 years (M_{G1}=4.63). Food leftovers are also used differently for feeding animals (F=16.270, p=0.000) or donation to people need ((F=13.450, p=0.000). People older than 40 years feed animals (M_{G2}=4.28) or donate food leftovers (M_{G2}=3.16) more frequently in comparison to younger people (M_{G1}=3.04 for feeding animals; M_{G1}=2.31 for donating food leftovers). It can be observed that feeding animals happens more frequently in comparison to food donations for people in need.

The young generation considers that they throw away more food than the average population (F=5.260, p=0.023) although both groups have an under-average value for this item (M_{G1}=3.10, M_{G1}=2.56). Trying new products (F=9.762, p=0.002) and buying more products when hungry (F=15.833, p=0.000) are behaviors that characterize the young generations (M_{G1}=4.73 for trying new products and M_{G1}=5.29 for buying more, when hungry). Packaging are apparently designed for the middle-aged population, older than 40 years as they don't consider that packages contain too much food (F=3.468, p=0.06, M_{G2}=3.81) in opposition to younger people who consider that packages contain too much food (M_{G1}=4.25). People older than 40 years consider more, that a rich food offer at meals is associated with a social status (F=3.190, p=0.067, M_{G1}=4.78, M_{G1}=4.31)

The re-use of food is also a typical activity for people older than 40 years, who check the "best before" date and consume the products that expire (F=3.812, p=0.052, M_{G2}=4.86, M_{G1}=4.37) or using products cooked in the previous days (F=3.808, p=0.052, M_{G2}=4.88, M_{G1}=4.45). On the other hand the young generation keeps the food as long as possible in the hope that they eat it (F=3.393, p=0.067, M_{G1}=4.78, M_{G2}=4.31) and they rather throw food away, if they don't eat it (F=3.145, p=0.075), although both groups have an under average value for this item (M_{G2}=3.20, M_{G1}=2.76).

Similar behavior and perceptions for the two age groups can be observed for the bad feelings related to food waste. Both the young people and the older people feel bad for throwing away food (F=0.922, p=0.338>0.10, M_{G1}=5.05, M_{G2}=5.27), they have a bad conscious related to the hungry children in the world (F=2.109, p=0.148>0.10, M_{G1}=4.23, M_{G2}=4.64) and they think of the money they have spent for food (F=0.809, p=0.369>0.10, M_{G1}=4.31, M_{G2}=4.54). In spite of these, none of the groups recycle food (F=0.972, p=0.325>0.10, M_{G1}=2.13, M_{G2}=2.37).

Both generations have similar behavior related to the shopping experience, in which both consumers groups buy more products than they have on the shopping list (F=0.735, p=0.392>0.10, M_{G1}=4.94, M_{G2}=4.74) and with the purpose of having a food reserve at home (F=1.374, p=0.242>0.10, M_{G1}=3.78, M_{G2}=3.52). Both consumer groups buy products for general purposes (F=1.7666, p=0.185>0.10, M_{G1}=4.82, M_{G2}=4.52) and they have the ability to prepare receipts with the existing food (F=0.244, p=0.621>0.10, M_{G1}=4.41, M_{G2}=4.53). Both generations state that they don't eat the products after expiration date, even if they look good (F=2.137, p=0.145>0.10, M_{G1}=2.55, M_{G2}=2.92) and as expected, they throw it away when is shows signs of alteration (F=0.185, p=0.668>0.10, M_{G1}=5.65, M_{G2}=5.75). Both groups state that they prefer not to buy products with visual imperfections (F=1.146, p=0.285>0.10, M_{G1}=2.78, M_{G2}=3.03).

Table no. 1 Discriminant analysis results regarding significant differences based on grouping variable age

Item	Mean G1	Mean G2	SD G1	SD G2	F (1,250)	p
I cook and eat at home every day	3.41	5.08	1.72	1.95	48.816	.000
I have a fixed schedule for shopping (i.g. once a week)	2.83	4.10	1.78	2.09	25.591	.000
I prefer to eat out, even if I have cooked food	3.56	2.42	1.87	1.71	22.559	.000
I feed domestic animals with food leftovers.	3.04	4.28	2.29	2.42	16.270	.000
When I am hungry, I buy more products	5.29	4.27	1.82	2.12	15.833	.000
I donate food leftovers to people in need	2.31	3.16	1.67	1.92	13.450	.000
I like to try new products	4.73	3.98	1.73	1.91	9.762	.002
I throw away more food than average population	3.10	2.56	1.83	1.62	5.260	.023
I plan the shopping experience and I do a shopping list	4.63	5.18	1.90	1.89	4.832	.029
I check ”best before” date & consume those that expire	4.37	4.86	1.88	1.94	3.812	.052
I use cooked food from previous days	4.45	4.88	1.67	1.77	3.808	.052
Packages contain more food than I need	4.25	3.81	1.79	1.85	3.468	.064
I keep food as long as I hope to eat it	4.78	4.31	1.84	2.09	3.393	.067
A rich food offer is a social status symbol	2.76	3.20	1.82	1.84	3.190	.075
I throw away food, if I don’t eat it	3.05	2.61	1.88	1.94	3.145	.077
I eat food after expiration date, if they look good	2.55	2.92	1.83	2.09	2.137	.145
I think of hungry children, when wasting food	4.23	4.64	2.18	2.02	2.109	.148
I buy products for general purposes (not for a receipt)	4.82	4.52	1.71	1.75	1.766	.185
I buy more products than need, for having a reserve	3.78	3.52	1.65	1.72	1.374	.242
I buy food products with visual imperfections	2.78	3.03	1.65	1.99	1.146	.285
I spend a lot of time when going shopping	3.99	3.74	1.81	1.91	1.047	.307
I recycle food waste	2.13	2.37	1.82	1.89	.972	.325
I feel bad for throwing away food	5.05	5.27	1.76	1.86	.922	.338
I think of spend money, when wasting food	4.31	4.54	1.86	1.96	.809	.369
I buy more products than mentioned on shopping list	4.94	4.74	1.74	1.80	.735	.392
A big quantity of wasted food well lead to food crisis	3.92	4.10	1.93	2.01	.458	.499
I keep food in optimal conditions for longer freshness	5.08	4.95	1.60	1.82	.352	.554
I have the ability to prepare receipts with existing food	4.41	4.53	1.70	1.85	.244	.621
I throw away food as it shows signs of alteration	5.65	5.75	1.76	2.02	.185	.668
I buy more products at special occasions (Christmas)	4.79	4.88	1.84	1.75	.159	.690
I prepare too much food and it is not consumed	4.23	4.31	1.73	1.90	.114	.736
I buy products with longer “best before” period	4.50	4.53	1.86	1.89	.012	.913
I freeze products in order to avoid their deterioration	3.90	3.87	2.00	2.14	.007	.935

Observation: G1 are people younger than 40 years; G2 are people older than 40 years
Source: Own research results

Even more similarities are observed at the behavior for buying more at special occasions and holidays (F=0.159, p=0.690>0.10, M_{G1}=4.79, M_{G2}=4.88), in the process of preparing more food than it can be consumed (F=0.114, p=0.736>0.10, M_{G1}=4.23, M_{G2}=4.31). Both groups try to keep the food products in optimal conditions for longer freshness (F=0.352, p=0.554>0.10, M_{G1}=5.08, M_{G2}=4.95), they freeze food in order to avoid deterioration (F=0.007, p=0.935>0.10, M_{G1}=3.90, M_{G2}=3.87) and they buy products with longer “best before” period (F=0.012, p=0.913>0.10, M_{G1}=4.50, M_{G2}=4.53).

Conclusions

Several consumer researches have shown that certain basic behaviors are learned from the parents. Eating or cleaning habits are most frequently learned from the parents and therefore there are similarities related to these types of behaviors. The results of our research show that there are also similarities related to food wasting behavior of consumers. The two age groups analyzed in this paper, have similar behaviors related to the buying habits as they have the tendency to buy more products as planned and with the purpose of having certain food reserves at home. Their preference related to the visual aspect of food is also similar, as both generations don't buy food with imperfections or they throw it away when it shows signs of deterioration. Similarities can be also observed when we analyze the preparation and storing of food as both generations affirm that they do their best in order to avoid food leftovers.

Both generations have a bad conscious when wasting food, but in spite of this bad feeling, none of the two groups recycle food leftovers. People older than 40 years have rather the tendency to give food leftovers to domestic animals or o donate them to people in need. In spite of this results, both groups have an under average value for these items showing that this type of behavior related to food recycling is not very frequent.

The results of the research have revealed also differences related to the food habits of people younger and older than 40 years. The main differences are related to the locations where people prefer to eat, whereby people older than40 years prefer to cook and eat at home, while young people prefer to eat outside their house, at restaurants or canteens. Another difference for the two groups can be observed for the planning of eating and buying food. Younger people are more eager to try new products and they have a more impulsive buying behavior by choosing at the moment of buying the products they want. In opposition to this, people older than 40 years like to plan in advance their shopping experience and the products they buy.

The analysis of the difference and similarities of behavior of two groups of consumers of different ages, is important for the determination of changes in the habits of the consumers. On one hand it is important to analyze the existing behavior of consumers related to the acquisition, preparation, storage and consumption of food in order to determine the cause for food waste. Besides by knowing the behavior that produces food waste, interventions can be made in order to reduce the quantity of wasted food. On the other hand, all these changes have an impact on the business environment as there is a switch from eating at home to eating out or ordering food. This change of behavior can be seen as a chance for restaurants, canteens or catering companies. This impacts also the strategy for food waste, in the sense that the waste is produced at the business level and not at the final consumer level.

Food waste and asymmetric distribution of food around the world remain important research topics. The more we know about the food and eating behavior of consumers, the easier it will be to increase the efficient use of food and to reduce the quantity of wasted food.

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FRAMEWORK FOR MEASURING PRODUCT INNOVATION TO SUPPORT SUSTAINABLE DEVELOPMENT

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Abstract
Innovation, in the current highly dynamic and competitive business environment, is the best solution for organizations to improve their performance and ensure their competitiveness and success. One of the most visible and known types of innovation is product innovation, it allows organizations to have competitive advantage by differentiating its production and increasing the quality and variety of goods. The demand for products continues to increase but in the same time, the environmental factors are more and more present in the organization policies, in these conditions, the sustainability aspects related to the product developments are becoming a competitive advantages. The purpose of this paper is to study the relation between sustainable development and product innovation and offer a framework for a better management of product innovation. To have a certain control over the innovation process we propose a measurement framework formed by a set of indicators correlated to the environmental requirements.

Keywords
Innovation, sustainable development, product innovation, measurement indicators.

JEL Classification
O32; O33

Introduction

We are living in an accelerated transition period, marked by complex and profound transformations in all areas of activity. The significance of innovation is reflected primarily in the high rate of development new products and technologies, but the changes are not just about tangible things (Pamfilie & Croitoru, 2018). Within organizations, innovation actions are increasingly oriented towards management methods, organization and business configuration, which contribute to sustainable competitive advantage. At the same time, innovation is manifested in society in general, materializing in new strategies, concepts, ideas and organizations addressing social needs - from the labor market and working conditions to education, health and community development. Organizations may increase the performance of their innovation processes by focusing on capitalization of external innovation resources and adopting innovation principles (Olaru et al., 2015).

The concept of innovation defines synthetically the introduction of the new. The finding and introducing the new represent the main factors that have determined the evolution of humanity throughout its existence. The importance and volume of these activities grew up with the evolution of society. Especially in recent decades, there has been a phenomenal

increase in interest in innovation as a way to achieve sustainable economic growth of organizations and society.
There are studies that empirically determined innovation process lifecycle, composed of key stages of managing innovation as: the creation of ideas, development of innovations, utilization, review, and improvement or abandonment (Pan, 2010). The innovation activities include, among others, research and development (R&D), capital expenditure, human resource development, design and market development. Measuring innovation in the business sector and the organization engagement in innovation activities, of which R&D is one, indicates that mostly organizations innovate than do R&D (Gault, 2018).
Innovative performance is a critical dimension in assessing competitiveness and national progress and innovation is crucial in approaching global challenges, such as climate change and sustainable development (Maier et al., 2018). Innovation is not only the path to success in business environment, but also an essential condition for maintaining in a highly competitive market (Olaru et al., 2013). Customer satisfaction is one of the main components of management systems, so companies that implement them have to be innovative in developing and launching new products or services to match the customers' needs and requirements (Simon and Yaya, 2012).
The work treats sustainable development through product innovation from the perspective of the organization. Sustainable development is the achievement of a better quality of life today without compromising the chance of future generations to the best of life. This means achieving a balance between economic, social and environmental protection. In organizational context, product innovation is about creating a new or improved product in terms of technical-functional features, components, materials, ease of use or other functional features.

Research background

Considering more and more restrictive regulations and given the increasingly importance of sanogenetic and environmental criteria in a highly dynamic and complex competition, many organizations are concerned to improve the performance results in relation to society as a whole, with certain focus on promoting sustainable development principles (Olaru et al., 2010).
According to the vision of sustainable development, progress integrates immediate and long-term goals, local and global action, economic and environmental issues, all inseparable. Sustainable development pursues and strives to find a stable theoretical framework for decision-making in any situation where a human / environmental report is found, whether it be environmental, economic or social.
Sustainable development is defined as being the way of development that, for now, does not jeopardize the chances of development for future generations. This approach includes productivity, harmony, satisfying social, economic and environmental requirements and the concept of intergenerational equity (Summers and Smith, 2014). As a structure, it includes the *energy*, the *environment* and the *human resources* components.
Energy is a component of sustainable development because the way power generation and consumption are currently managed depends the access to energy for future generations. The *environment*, viewed in multiple ways, monitoring, depollution and preventing its further degradation, is a component of sustainable development, as future generations will be forced to live in the environmental conditions they will inherit from the current generation. *Human resources*, viewed because of the education, culture and health of the current population, are an initial condition for the evolution of future populations. The inheritance of an indigenous, uneducated or unhealthy population may be a major handicap for future generations (Vasile, 2019).

Initially, sustainable development was intended to be a solution to the ecological crisis caused by the intense industrial exploitation of resources and the continued degradation of the environment, and primarily seeks to preserve the quality of the environment. The concept has now expanded on the quality of life in its complexity, both economically and socially. To better align cleaner production within business and society, organizations can enable sustainability activities as a catalyst for change (Sroufe, 2017). The subject of sustainable development is now also the concern for justice and equity between states, not only between generations (Burz, 2012; United Nation, 1992).

Sustainable development must be seen as an adaptation of society and the economy to the great challenges humanity faces today. People are at the heart of sustainable development concerns. They have the right to a healthy and productive life, in harmony with nature.

We cannot talk about development without innovation, because innovation is the basis for sustainable development in any field. An effective implementation of innovation by the organizations is essential in adding value so that those remain competitive and also developments in current economic climate (Maier et al., 2014). There is some resistance in an effective innovation management system implementation, but good communication with staff and external partners, as well a leadership focused on competence and awareness could reduce it (Maier et al., 2016).

A company should be aware that in innovation processes management may occur certain risks and cause failure of the potential innovation projects. If the company can identify, assess and address these risks, it will significantly enhance the success and effectiveness of innovation processes management in the company (Lendel, Hittmár and Latka, 2015).

In the model developed by Calik and Bardudeen (2016) to measure sustainable innovation performance in manufacturing companies there are proposed three factors that should be used to assess the economic dimension of product and process innovation: innovation expenditure, number of new sustainable products or processes, sustainable patents and citations.

Through product innovation, the company can achieve a competitive advantage by differentiating its production and increasing the quality and variety of goods that allow it to grow demand and open up new growth opportunities (Leon, Martinez and Castilo, 2005; Suzianti, 2005; Brad, 2008; Brad, 2010; Camisón and López, 2010).

Product innovation refers to the development of goods or services with characteristics or intentions of use that differ significantly from previous products made by the enterprise. Product innovation includes significant changes in technical specifications, components and materials, embedded software, friendly use, or other functional features (Maier, 2014).

The expanded product concept assumes (Brad, 2010):

- The product itself, through its intrinsic properties resulting from conception and "design".
- Product-related processes, product quality relies on the quality of the manufacturing processes and the "technologies" integrated into the product.
- Sales services.
- The associated after sales service, the quality of the product is also given by the value added at the stage of use and withdrawal from use of the respective product.

The expanded product must (Brad, 2010):

- balance and ensure the sustainability of consumption and production;
- reduce environmental impact;
- must increase customer satisfaction.

Research methodology

The majority of data used in our research are secondary data, collected from different bibliographic databases, full-text databases, numeric databases or even special purpose databases. The collection of data was made by the use of keywords and the results were filtered by using Boolean operators and syntax. We evaluate and analyze the obtained data based on several criteria like the date of data collection; we try to have bibliographic sources as current as possible; the dependability or the source credibility; the content of data. The majority of data available in the innovation field are qualitative data, thus the first challenge of the research was to transform a part of qualitative data in quantitative data. For this, we used a content analysis and a grounded analysis of the qualitative data. In order to have a sustainable development we need to have the necessary tools to evaluate the current situation regarding innovation in the organization. In order to develop these tools, we first conduct an extensive review of the existing literature in the domain and related domains focusing on other innovation management models.

There are many ways to measure the productivity of product innovation; therefore, choosing the most appropriate measurement indicators requires a degree of selectivity. For a more accurate choice of indicators to measure innovation, it is necessary to define the indicator term. An indicator can be defined as something that helps us to understand where we are, where we are going (what we are heading for), and how far we are from a certain goal / goal.

For product innovation, we propose the following set of indicators:

- Income received from new product/ service;
- Return on investment in the creation of a new product/service;
- The time to develop the new idea;
- Percentage of ideas materialized in a new product/service;
- Number of products/services with changes in functional and/or technological design;
- Number of products with changes in raw materials, materials and components used;
- Number of products with changes in shape, appearance, dimensions (a new design);
- Number of products/services with the latest technological innovations;
- Number of new products/services placed on the market;
- New methods of increasing the quality of goods;
- Speed of development of new products/services;
- New product/service sales;
- Number of patents / trademarks / models;
- Degree of change of innovation during product realization;
- Product efficiency (result/effort ratio);
- The number of prototypes that reached serial production;
- The number of inventions completed by an innovation;
- Number of technology transfer processes;
- Number of registered national and international patent applications;
- Number of products and technologies produced and techniques with demonstrable impact (or applicability in the economy);
- Percentage of innovation projects from year to year (evolution of innovation projects).

In order to expand the scope of analysis, in this paper we used the empirical research method and used a questionnaire with representative sample of firms (104) to check the degree of innovation in the existing product.

Questions for the interview were (Maier, 2014):

1. How important to your business is the innovation process?
2. Please appreciate the importance of the following types of innovation for your company (Marketing Innovation, Product Innovation, Process Innovation, Innovation in Network Development, Innovation in Human Resources, Administrative Innovation, Strategic Innovation and Policy Innovation).
3. Please appreciate the importance of product innovation indicators.

Research results and Discussions

A percentage of 58% of the 104 firms interviewed considered the innovation process (fig. no. 1) to be very important, and 17% of those interviewed considered the innovation process to be of no importance to the organization they belonged.

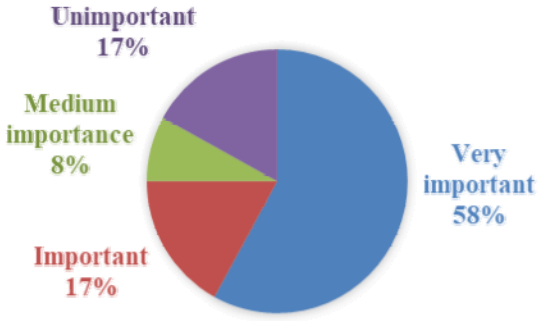

Fig. no. 1 The importance of the innovation process for organizations

Among the seven type of innovation proposed all 104 firms (fig. no. 2) appreciate the product innovation as the most important (92%) followed by marketing innovation (75%) and innovation in human resources (75%), process innovation (67%) and innovation in network development (67%); strategic innovation (50%), innovation of the vision and policy (50%) and the lowest percentage giving is administrative innovation (42%).

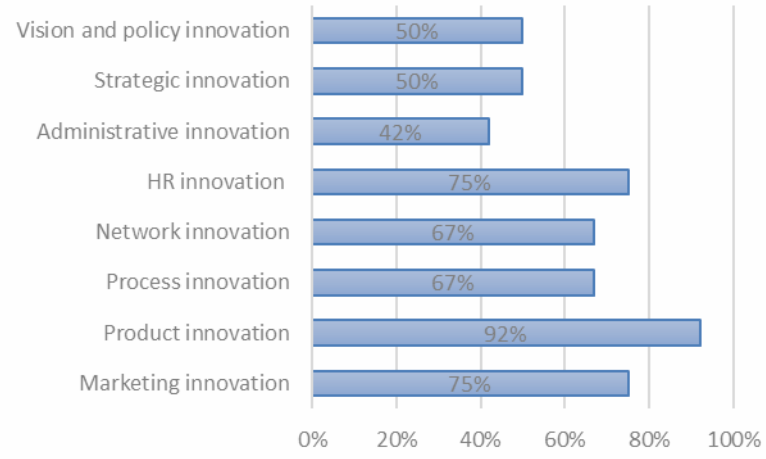

Fig. no. 2 The importance of the innovation types for organization

The measurement indicators proposed for product innovation were evaluated by the organizations (table no. 1) according to their importance. The value of revenue from the new product / service (100%), the return on investment in the creation of a new product / service (100%), the time to develop the new idea (75%), the new product / service sales (75% very

important for the firms surveyed, but also the analysis of the worrying percentages of indicators considered to be of no importance for companies, such as the percentage of innovation projects from year to year / evolution of innovation projects (33%) and the number of products and technologies produced and techniques demonstrable impact / or applicability in economy (25%).

Table no. 1 The importance of the product innovation indicators

Assessment / Indicators	Important	Medium importance	Unimportant
Income received from new product/ service;	100 %	0 %	0 %
Return on investment in the creation of a new product/service;	100 %	0 %	0 %
The time to develop the new idea;	75 %	25 %	0 %
Percentage of ideas materialized in a new product/service;	50 %	50 %	0 %
Number of products/services with changes in functional and/or technological design;	42 %	42 %	17 %
Number of products with changes in raw materials, materials and components used;	42 %	42 %	17 %
Number of products with changes in shape, appearance, dimensions (a new design);	58 %	17 %	25 %
Number of products/services with the latest technological innovations;	50 %	33 %	17 %
Number of new products/services placed on the market;	67 %	33 %	0 %
New methods of increasing the quality of goods;	67 %	33 %	0 %
Speed of development of new products/services;	75 %	25 %	0 %
New product/service sales;	25 %	67 %	8 %
Number of patents / trademarks / models;	33 %	42 %	25 %
Degree of change of innovation during product realization;	75 %	25 %	0 %
Product efficiency (result/effort ratio);	50 %	33 %	17 %
The number of prototypes that reached serial production;	42 %	33 %	25 %
The number of inventions completed by an innovation;	33 %	34 %	33 %
Number of technology transfer processes;	25 %	33 %	42 %
Number of registered national and international patent applications;	42 %	33 %	25 %
Number of products and technologies produced and techniques with demonstrable impact (or applicability in the economy);	25 %	42 %	33 %

The results included and analyzed in this study revealed a number of issues:

- Innovation management provides results irrespective of the industry or size of the company - small, large or high-tech companies do not have a special advantage because the contribution to the growth of innovation depends on the quality of the management effort.
- Innovation management is implemented in an extensive variety of ways across diverse industries, such as products, processes, services or new businesses, thus revealing a wide innovation base and strong innovation potential in the business environment.

- Good innovation management offers a plus with a significant overall impact; between 6 and 30% of additional revenue is provided by innovation projects , with an average of nearly 20%, which is considerable compared to general revenue growth rates of between 5% and 10%.
- However, growth is much lower in those areas of the public sector that do not operate in line with commercial standards.

Conclusion

Although the process of innovation is a very important factor behind the economic growth and prosperity of the global economy today, it is also little understood. Over the past century, industry leaders have learned to master the production process in a way that it no longer functions as an important competitive advantage. The new challenge is to lead the innovation process –exploiting the change, developing new competitive advantages by providing better products and services, running better processes or even delivering completely new solutions.

For individual firms and society in general, the innovation skill is vital to ensure development and competitiveness in the coming future. To be able to innovate, people are well trained and willing to get involved in this investment in innovation. In addition, that is not only because global economic progress is expected of humankind due to innovation, but also because in the situation of diminishing the material resources, no country in the world will be able to develop without creating the conditions for using the most at hand resources, still inadequately used, the human mind.

The renewal of the products and markets to which they are distributed is not sufficient; we need to change the technological processes, the working methods, the working relations, the relations of a company both public and private with its outside, especially with the shareholders, the financiers, the suppliers and, last but not least, the clients.

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QUANTITATIVE ANALYSIS REGARDING THE PROBABILITY OF SPREADING FAKE NEWS BASED ON AGE

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Abstract

The emergence of social media has influenced the way people connect with each other, assimilate and share information and interact with businesses or institutions. Certainly, these new means of communication have brought many benefits, both for companies, as well as individuals, especially in a world in which time has become the most valuable resource.

Unfortunately, recent studies and international debates have pointed out that social media can be a main factor in creating economic and social imbalance. One of the main factors associated with the negative impact of social platforms refers to fake news. Its ability to influence the perception of public figures, companies and state institutions and interfere in important economic, democratic or legislative processes has caught the attention of researchers and international organisms.

This article aims to analyze the routs, factors and demographic criteria which play a part in the dissemination of fake news. The conducted quantitative study has had the objective of analyzing the reaction of individuals when confronted with both information presented in a fake news specific manner, as well as in an objective one. Moreover, it aimed to establish if age can influence the assimilation and spreading degree of fake news.

Keywords:

Fake news, social media, social platforms, digital communication, misinformation.

JEL Classification:

M10, M31

Introduction

In recent years social media has gained popularity across the globe due to the benefits and opportunities it offers. Both individuals as well as companies have progressively embraced these new means of communication and information. A study conducted at EU level points out that 47% of all European companies have used at least one important social media platform in 2017 (Eurostat, 2017). While, individuals use social media platforms to connect with others worldwide and to create, share, comment and gain information based on personal interests, companies use these platforms in order to raise brand awareness, improve marketing, increase sales, develop public relations, involve consumers in product and services development, receive feedback and recruit personnel.

Unfortunately, social media is not only associated with benefits like the ones mentioned above, but also with risks which concern privacy, online harassment, bots, trolls,

misinformation, disinformation, fake reviews and fake news. Moreover, recent important social and political events (2016 US presidential elections, Brexit, national and international protests) have increased the number of critics directed towards these new means of communication. Specialists point out that there is a link between the development of social media and the extreme polarization of topics and debates (Antoci et al., 2019). The above-mentioned situation is especially associated with the phenomenon of fake news which has intensely been debated for the last couple of years and represents one of the main concerns associated with social media. Allcott and Gentzkow (2017) underline that fake news is deliberately created and disseminated with the objective of generating outrage and misinformation in order to gain political or financial benefits. Often fake news is published on anonymous websites which have similar domain names as renowned ones. Moreover, the huge amount of data, together with the diversity of the generated and spread information, makes it impossible in most of the cases to fact check, evaluate and combat fake news.
As recent events have demonstrated, fake news can negatively impact the perception of public figures, companies and state institutions and manipulate the public opinion to take a given action. Obviously, this phenomenon has great implications on the social, economic and political situation of a country, region or international organism. In order to better understand the roots of fake news and its impact, we have conducted a quantitative study analyzing the relation between the spreading degree of fake news and age.

Literature review

The new means of communication

For the last decade, the interest associated with the assessment and analysis of social media has exponentially increased. The popularity of this phenomenon has expanded the development of content and the generation of big data available online. The new means of communication, together with the online integrated search engines, promote the generation of big data as never before in the history of mankind. In this perspective, researchers and companies have developed models and algorithms based on artificial intelligence and machine learning (Pelau & Ene, 2018). Furthermore, instruments and technics which allow the storage, administration, analysis and access of data are constantly being developed (Jimenez-Marquez et al., 2019).
In this context, social media has become an important source of information and an optimum environment for spreading ideas, news and personalized content all around the globe (Kang, Lee, 2017). Moreover, authors point out that important social media platforms support users in interacting with each other inside communities, in sharing ideas and opinions and even in participating in organised events based on their location and interests (Kang, Lee, 2017). In general, social media refers to Internet based applications which include social platforms, multimedia sharing websites and blogs.
Chung (2017) points out, that with the technological development, news sources have become more complex while internet users have been offered the possibility of becoming active communicators and creators of content, rather than passive receivers of information. Moreover, in the online environment, both news platforms as well as the public have the role of acting as information sources for internet users (Chung, 2017). For this reason, the information quality of the published news has become an important issue in the academic environment, as well as for companies and public institutions. Sundar et al. (2017) emphasize that the main concern of readers is to establish if the encountered news is trustworthy, precise, objective and readable. Furthermore, the authors point out that information perceived as having a low quality is not considered by readers in the process of taking decisions. Moreover, the perceived quality of news is essential for the readers' acceptance or rejection of the presented information or message. The development of social

media and its popularity has also influenced the criteria on which readers analyse the quality of news.

When evaluating the credibility of news or articles published on online platforms, Lee-Won et al. (2016) suggest that social media interactions (likes, comments and shares) play a significant role. Users translate these social media metrics, which in most cases are presented alongside the article or news, as popularity or virality indicators of the published content. Authors point out, that some media organisations take editorial decisions and evaluate the performance of their journalist based on the generated social media specific interactions (Cherubini, Nielsen, 2016). These metrics not only influence the website traffic but offer precious feedback regarding the generated impact of the published articles or news (Chung, 2017). The public appreciation or sharing represents a certain degree of support for the presented information (Stavrositu, Kim, 2014).

Knobloch-Westerwick et al. (2005) suggest that internet users tend to select and read news articles if these have explicitly been recommended by others. In this regard, a higher number of reads determines a longer exposure of the recommended article. A study conducted by Chung (2017) points out that internet users tend to associate online available news articles, which have generated a high number of social media specific metrics, with a higher quality and credibility in comparison to articles which lack social media interactions. This observation implies that for some readers social media metrics represent an important indicator which shows the acceptance and approval of other users and therefore the associated news article can be interpreted as a trustworthy information source. Furthermore, the author emphasizes that in a situation in which social media metrics are not available, the indicator of quality associated with a news article is represented by the credibility and reputation of the media source. In this perspective, Chung (2017) suggests that social media metrics are more important for a media organization which lacks a good reputation and credibility.

The above-mentioned observations signal an important issue associated with the new means of communication. Even though the primary objective of social platforms is to connect people all around the world and offer them the possibility of sharing information and co-creating content, one can observe that the developed social platforms facilitate an online environment in which quality, morality and ethics play a secondary role. Even so, a study conducted by (Mander, 2017) emphasizes that there is an increasing trend regarding the use of social platforms which is reflected through the average two hours spent daily by users on social media platforms and on messaging applications in 2017.

Mostly, the academic field has focused on the positive aspects associated with social media and social platforms. The major part of the available research has the objective of establishing business, image and economic opportunities related to these means of communication. Nevertheless, in the last couple of years it has become clear that social media can also be associated with negative aspects and risks which can jeopardize the lives and perception concerning individuals, communities, companies and society (Baccarella et al., 2018).

The fake news phenomenon

Individuals use social media platforms in order to connect with others without being limited by geographic boundaries, but at the same time they disconnect from the individuals who stand in front of them. This type of social behavior has long-term effects on the way individuals develop their thinking and acting patterns, facilitating the appearance of superficial behavior which lacks moral and ethical principles. Moreover, negative aspects related to social media include addiction, online harassment, trolling, privacy violation, paid reviews and of course fake news, a new concept, which in recent years has captured the attention of specialist worldwide.

Lazer et al. (2018) define fake news as false information distributed and spread with the purpose of deceiving individuals. Moreover, this phenomenon includes news articles which deliberately contain false information, fact that can be proven, in order to mislead readers (Allcott, Gentzkow, 2017).

Unfortunately, through their infrastructure, social media platforms facilitate the spreading of this phenomenon. The huge amount of news available online makes it impossible to analyze the veracity of the published information and of the primary news source. This was not the case with traditional media where the source was always traceable.

Authors point out that in general fake news are „pseudo news" which are presented as being factually correct but lack real facts. Moreover, this type of news is either the result of a deliberate disinformation campaign or represents the outcome of a mistake which can be considered misinformation (Hannah et al., 2015). Recent debates emphasize that fake news include sensationalism, due to which millions of readers worldwide are attracted and engaged (Baccarella et al., 2018). This observation is supported by Chang et al. (2016) who point out that the top 20 fake news, which were published throughout the 2016 US presidential campaign, have generated a higher number of interactions on social media in comparison to the top 20 news articles generated by renowned media publications.

As Kietzmann et al. (2011) note, important social media platforms possess the necessary instruments in order to motivate online users to post and share personalized content and to join groups and communities based on interests and location. As individuals share, interact and spread content, the risk of disseminating misinformation, content without copyright and fake news arises. Allcott and Gentzkow (2017) point out that during the 2016 US presidential election more than 100 websites, which have been created with the objective of spreading fake news, have been managed by adolescents from Veles, Macedonia.

In conclusion, the spreading of news on social media platforms is associated with high risks related to misinformation and disinformation, because the verification of the information's source and author is time-consuming and, in some cases, impossible.

Factors determining the spread of fake news

When analyzing the impact of fake news and its spreading patterns, some authors have pointed out the responsibility of social media users. Alkhodair et al. (2019) note that a major part of online active individuals has the tendency of spreading breaking news or trending topics without verifying the veracity of the information. In this context, one should understand that every single individual, who is active in the online environment and interacts with others, can influence the spreading degree of false information. Colliander (2019) conducted a study which proves that a negative feedback related to fake news and exposed by online users through comments, can determine a negative reaction of other readers, who encounter these comments, and therefore can contribute to the combat of the disinformation. On the other hand, if fake news is supported through positive comments, the spreading degree of the false information increases, determining a higher impact among internet users. Moreover, a recent study made public by Pew Research Center (2016) noted that more than 23% of Americans have voluntarily or involuntarily contributed to the spreading of fake news. Tantau et. al. (2018) pointed out that gender and age play a significant role in the dissemination of fake news, while Pop and Ene (2019) emphasized the importance of the educational level on the spreading degree of false information.

Although economic, political or ideological interests are key factors and motivators which determine the publishing and spreading of fake news, the above-mentioned findings demonstrate the importance and the responsibility of internet users in mitigating this phenomenon.

Research methodology

The aim of the paper is to analyze the spread of fake news among the younger generations and the older generations, and if age is a determinant for their acceptance among the two demographic categories. In order to assess the impact that fake news have on people from the two age groups, a survey was performed on 504 people, out of which, 322 were younger than 40 years and 182 were older. The interviewees were given two sets of posts made on Facebook. The first set consisted in two posts containing text as well as photos, while the second set only contained text. One of the posts was written in a subjective, provocative manner, while the other was more focused on facts and was written in a more objective manner (Table no. 1). In the first set, the photo included in the subjective post contained a violent image from a Romanian street protest, while the second one contained only a photo of the Romanian Government's building.

Table no. 1. Survey questions

Survey question number	Objective post	Subjective post
Question 110	Tens of thousands of Romanians have peacefully protested in front of the Government. They have manifested their discontent with the way in which the current coalition governs. What they asked for and how the Government representatives answered.	Revolting images that captured the moments when the peaceful protesters were aggressed and beaten without mercy by the riot police! Read the terrible confessions made by protesters caught in the inferno created by authorities.
Question 111	Romania has registered a 48% increase of the price of natural gas in the last year. According to declarations made by the representatives of the Romanian Industries and Services Committee of the Chamber of Deputies, the increase has been caused by the liberalization process.	HISTORICAL increase caused by the incompetence of the political class! The price of natural gas has tripled! How will the invoices from the following years change and how many Romanians will freeze in their homes due to the lack of money? Click on the link for further information.

For each post, interviewees had to answer two questions (110a, 110b, 111a, 111b). First, they had to grade on a 7-points Likert scale, the probability that they would share the post. Secondly, they had to evaluate the probability to choose one option against the other, if they had to share one of them. The percentages for the probabilities to share the two posts had to sum up to 100%. Responses related to the two sets of posts were evaluated in SPSS using the discriminant analysis.

Results and discussion

Results of the analysis show a higher probability for the objective post to be shared (Table no. 2 and Table no. 3). The rating on the Likert scale was 3.785 for the first objective post, while the rating for the second objective post was 4.039, as opposed to 3.480 for the first subjective post and 3.357 for the second subjective post.

The difference between the means of the Likert scale ratings are statistically insignificant for both age groups (younger/older than forty) for the first set of posts (question 110a), and for people older than forty for the second set of posts (question 111a). The higher

probability that people from both age groups share the objective post, as opposed to the subjective post, is based on question 110b (p value <0.05, F stat 29.29, 29.67 respectively) and question 111b (p value <0.05, F stat 62.14, 8.615 respectively).
The analysis of the percentages' means, measuring the probability to share one of the two posts, shows that there is a higher probability for people under forty to share the subjective content that also included a photo, as opposed to people over forty (average 41.99% chance for the subjective post to be shared by people under forty and 38.68% chance for the subjective post to be shared by people over forty). This result may also be due to the content of the post, which describes protests where many young people participated. In the case of the second post, which only included text, there was a higher probability for older people to share the subjective content - 43.69% probability, as opposed to 37.15%, probability for the post to be shared by someone under forty. This result is in line with results of research performed by Guess et al. (2019), who found that people over 65 were the most predominant disseminators for fake news, and that conducted by Tantau et al. (2018), where a higher engagement rate of older people to Facebook posts that are written in a subjective, clickbait specific manner was identified.

Table no. 2. Discriminant analysis results for the influence of suggestive pictures on the spread of fake news (question 110)

Variable	Mean in objective post	Mean in subjective post	Standard deviation objective post	Standard deviation subjective post	F value (df:1,502)	P
Q110a	3.785	3.480	2.07	2.203	2.566	0.110
Q110b	59.16	40.79	27.00	27.03	58.21	0.000
Q110a – Age<40	3.69	3.521	2.03	2.153	0.555	0.457
Q110b – Age<40	57.94	41.99	26.40	26.47	29.29	0.000
Q110a – Age>40	3.94	3.406	2.15	2.29	2.660	0.105
Q110b – Age>40	61.31	38.68	2.25	2.21	29.667	0.000

*Note: Significance: *** for p<0.01; ** for p<0.05; * for p<0.10*
Source: Own research results

Table no. 3. Discriminant analysis results for the influence of suggestive words on the spread of fake news (question 111)

Variable	Mean in objective post	Mean in subjective post	Standard deviation objective post	Standard deviation subjective post	F value (df:1,502)	P
Q111a	4.039	3.357	2.098	2.211	12.628	0.000
Q111b	60.66	39.51	29.52	29.78	64.055	0.000
Q111a –Age<40	4.07	3.20	2.10	2.179	13.27	0.000
Q111b – Age<40	62.84	37.15	29.23	29.23	62.14	0.000
Q111a – Age>40	3.97	3.62	2.10	2.25	1.184	0.278
Q111b – Age>40	56.80	43.69	29.80	30.45	8.615	0.004

*Note: Significance: *** for p<0.01; ** for p<0.05; * for p<0.10*
Source: Own research results

The difference of the overall means for the Likert scale ratings and the allocation of the probability percentages for the two sets of posts show only a very slight increase in the

spread of the fake news post which included a photo (3.480 mean for 110a and 3.357 mean for 111a; 40.79 mean for 110b and 39.51 mean for 111b).

Conclusions

As internet users have become active communicators and creators of content, fake news has started to spread. While awareness regarding this phenomenon has raised, a growing number of researches was conducted in order to assess the state of the fake news dissemination (Guess et al., 2019; Pew Research Center, 2016), as well as to identify what influences its acceptance and distribution (Colliander et al., 2019; Pop and Ene, 2019).

The goal of the paper was to complete a prior research regarding the fake news phenomenon, conducted by Tantau et al. (2018), delivering a current status of the spread of fake news on social media platforms and the influence that age has on the acceptance of fake news.

The research assessed the preference of the population for social media posts written both in a subjective, provocative manner and in an objective manner. Results of the study have shown that when given two options of content, one written in a subjective and provocative manner, and one written in an objective manner, more facts oriented, there is a higher probability that people choose to share the objective one. Results regarding the propagation of fake news depending on age were different for the two cases included in the study: while people under 40 years would share fake news accompanied by a photo more than people over 40 years would do, the latter category would share the fake news consisting only of text. However, the content of the posts could have been one of the reasons for this difference in results, as the first case was referring to protests where many young people participated.

The reason for the outcome of the study could be that internet users using social media have become more educated regarding the fake news phenomena and can identify content which may represent misinformation or click-bait, when given the two options of an objective piece of news and a subjective, provocative one, referring to the same matter, side by side. However, as the Tantau et al. (2018) research has underlined, when navigating on social media, users do not question the trustworthiness of the information as much. Further research could offer more insight into the matter by interviewing social media users regarding their behavior towards news distributed on these platforms.

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A CHINESE BUSINESS: THE BELT AND ROAD INITIATIVE

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Abstract
Most of the Asian economies are integrated into regional manufacturing networks and are connected themselves through financial and trade flows, with China often at the center. China's Belt and Road Initiative, also known as the "Silk Economic Belt" and the "21st - Century Maritime Silk Road", is rooted in the ancient Silk Road and constitutes one of the biggest projects in the world history. The paper attempts to present this Chinese initiative and to briefly analyze its key dimensions. The methodology is based on a quantitative research method. The information was gathered through desk research. Multiple secondary data that were collected from a significant literature review were analyzed and synthesized. The paper demonstrates that the BRI represents a multidimensional initiative and, therefore, should be analyzed in a holistic way. Also, it shows that the Chinese initiative has benefited the world in developing infrastructure and promoting regional and global cooperation among the countries along the Belt and Road Initiative.

Keywords
Belt and Road Initiative, China, business, Silk Road, Xi Jinping.

JEL Classification
F00, F15, O53.

Introduction

After the fall of the European communist regimes the globalization process spread very rapidly all over the world. The exponential increase in cross-border production, trade, and investment has led to a deeper integration of the national economies. In this respect, the world's overall level of global connectedness, which measures the depth and the breadth of countries' integration with the rest of the world, attained its peak level in 2017 (Altman et al., 2019).

The free movement of goods, capital, information, and people has profoundly changed the way the world economy and businesses function. The Fourth Industrial Revolution is continuously transforming today's societies, political and economic systems, and businesses through numerous technological advances such as the Internet of Things, artificial intelligence and big data. The digital technologies have significantly reduced the costs (e.g., transport and logistics costs, cross-border payments) and led to the expansion of trade and businesses around the world (World Trade Organization, 2018). The mixture of four key transformations- waves of technological disruption, ecological imperatives, multipolar

international relations, social discontents- has given birth to a new phase of globalization, Globalization 4.0, that is shaped by a plethora of phenomena and events such as Brexit, massive immigration, terrorism, and China's Belt and Road Initiative (BRI) (World Economic Forum, 2019).

In spite of the fact that the People's Republic of China (PRC) occupied the 39th place out of 42 countries according to the globalization index for 2016 (Weiß et al., 2018), it has remained the global factory and the world's biggest exporter, and became the world's largest market for several products such as automobiles and smartphones (Autor et al., 2016; Lund et al., 2019). Most of the Asian economies are integrated into regional manufacturing networks and are connected themselves through financial and trade flows, with China often at the center (United Nations, 2019). In this respect, China's BRI, also known as the "Silk Economic Belt" and the "21st -Century Maritime Silk Road", is rooted in the ancient Silk Road and constitutes one of the biggest projects in the world history. It has been gradually implemented since 2013 and linked more than 150 nations and international organizations (Tweed, 2019).

As Asia is going to keep its status as the main engine of the world economic growth, the BRI will continue to promote the economic integration of many countries from Europe, Asia and Africa (Laudicina et al., 2019). Since its emergence researchers worldwide have tried to answer several questions related to this initiative such as:

- What does the BRI mean in today's global economy?
- What is the role played by China's BRI in the world economy?

The paper attempts to present China's BRI and to briefly analyze its key dimensions. The paper is organized as follows. The second section of the paper illustrates the literature review. The third section discusses the research methodology. The results of the research are displayed in the fourth section of the paper. The paper ends with conclusions.

Literature review

The China's BRI has captured the attention of researchers, policymakers, academics and entrepreneurs all over the world since 2013. This is why the BRI has become a subject of interest in the literature from recent years. The BRI has been defined from different point of views as follows:

- "a systematic project, which should be jointly built through consultation to meet the interests of all, and efforts should be made to integrate the development strategies of the countries along the Belt and Road" and "a way for win-win cooperation that promotes common development and prosperity and a road towards peace and friendship by enhancing mutual understanding and trust, and strengthening all-round exchanges" (National Development and Reform Commission, 2015, p. 1).
- "a reflection of China's emergence as a major economic power, a driver of global economic growth and a catalyst of regional economic integration" (Liu & Dunford, 2016, p. 327).
- "an important measure in enabling China to implement all-round opening up, and a major platform for promoting mutual benefit in the current era" (Xi, 2017a, p. 546).
- "a meta-discourse on the Silk Road and a new manifestation of China's soft power, of its "peaceful" and "multilateral" rise" and "a response to China's domestic economic woes, serving to postpone the decisive moment when Chinese production will need to be transitioned from a low-cost model ("Made in China") to a value-added production model ("Created by China")" (Laruelle, 2018, p. x).
- "a key policy initiative of the PRC" that "spans more than 70 countries and represents a major driver of future investment in global infrastructure, trade and economic development" (KPMG, 2018a, p. 2).

- "an essential element of China's further economic reform process itself… linked to the economic reforms of the Third Plenum of the 18th Party Congress, which focused on market allocation of resources with discussions indicating the senior leadership's thinking" (Yu, 2018, p. 226).
- "a vehicle to open markets, expand export overcapacities, generate employment, reduce regional inequalities, promote political stability and security through development as well as prosperity and to restore Chinese spheres of influence in the Eurasian landmass and beyond" (Umbach, 2019, p. 1).
- "is essentially a business proposition and it does not carry with it a dose of 'extraneous' conditions, such as those relating to macroeconomic imbalances or governance, and nor does it imply the creation of an alliance" (Baltensperger & Dadush, 2019, p. 3).

In spite of the fact that there is no universal definition of the BRI some of its main characteristics can be identified. First, China's BRI deepens economic globalization, contributes to sustainable development across countries and regions, and represents a trigger for economic progress across the world (United Nations Development Programme, 2017). Second, the initiative promotes mutual benefit, prosperity, peace, and friendship in the numerous countries and regions across Europe, Asia and Africa (Fig. no. 1).

Fig. no. 1 China's BRI: The Economic Corridors

Source: Chaudhuri, P. P., 2019. Opinion: India nudges China toward Belt and Road changes, Geopolitical Intelligence Services, 04.01.2019. https://www.gisreportsonline.com/opinion-india-nudges-china-toward-belt-and-road-changes,politics,2762.html#modal.

Third, the BRI helps China to expand its overseas investments and to boost its economic development, creates business opportunities for Chinese companies, strengthens the cooperation between Chinese and foreign companies, and facilitates the penetration of many foreign markets (KPMG, 2018b). Fourth, the BRI represents a major initiative of Xi Jinping, the general Secretary of the Chinese Communist Party and the President of China. Fifth, China's BRI represents a multidimensional initiative (e.g., political, economic, trade, etc.).

Research methodology

In order to reach the aims of the paper, the authors used a quantitative research method. The information was gathered through desk research. Multiple secondary data that were collected from a significant literature review were analyzed and synthesized. The main sources were journals (e.g., Area Development and Policy, Asia Europe Journal), books and reports of international organizations (e.g., United Nations, World Trade Organization) from the fields of economics, international affairs, and business, and were found in electronic databases (e.g., Springer) and libraries (e.g., the Central University Library Carol I of Bucharest, the Romanian Academy Library).

Results and discussion

The BRI has already entered in its sixth year of existence. As the twenty-first century reimagining of the ancient Silk Road, China's BRI was mentioned for the first time in a speech given by the President of PRC Xi Jinping at Nazarbayev University from Astana (Kazakhstan), on 7 September 2013 (Xi, 2013). Today, more than 70 countries of the world are geographically located along the BRI (Baniya et al., 2019) but the initiative already involves 84 countries (rising from 65 countries in 2015) and 15 Chinese provinces (Umbach, 2019). In light of its global presence China's BRI has several key dimensions as follows:

- The political dimension. The Chinese initiative provides an important space for cooperation and mutual benefit among the countries along the BRI. There are five cooperation priorities (Table no. 1) and several multilateral cooperation mechanisms such as the Shanghai Cooperation Organization (SCO), ASEAN Plus China (10+1), Asia-Pacific Economic Cooperation (APEC), Asia-Europe Meeting (ASEM), Asia Cooperation Dialogue (ACD), Conference on Interaction and Confidence-Building Measures in Asia (CICA), China-Arab States Cooperation Forum (CASCF) or the Bao Forum for Asia (National Development and Reform Commission, 2015).
- The economic dimension. The BRI encompasses six economic corridors: the New Eurasian Land Bridge (NELB) with four centers (Yekaterinburg, Krasnodar, Almaty, Astana), the China-Mongolia-Russia Economic Corridor (CMREC) with two centers (Novosibirsk and Irkutsk), the China-Central Asia-West Asia Economic Corridor (CCWAEC) with three centers (Tehran, Istanbul, Kabul), the China-Indochina Peninsular Economic Corridor (CICPEC) with five centers (Yangon, Kuala Lumpur, Bangkok, Hanoi, Singapore), the China-Pakistan Economic Corridor (CPEC) with four centers (Rawalpindi, Bahawalpur, Islamabad, Karachi), and the Bangladesh-China-India-Myanmar Economic Corridor (BCIMEC) with three possible centers (Lhasa, Dhaka, Yangon) (Derruder et al., 2018). All these economic corridors are connecting the two pillars of China's BRI, namely the Silk Road Economic Belt and the Maritime Silk Road Initiative (Toma & Gradinaru, 2018). Huge investment projects have been and will be implemented in countries along these economic corridors such as the building of subway lines in Moscow (Russia), the construction of railway tunnels in Laos and of the Peljesac bridge in Croatia (Belt and Road Portal, 2019). China's investment in other BRI countries has surpassed US$50 billion in the period 2014-2016 (Xi, 2017b).
- The financial dimension. In order to sustain the numerous projects of the Chinese initiative, different financial and banking institutions have been and will be established such as the Asian Infrastructure Investment Bank, the BRICS New Development Bank and the Silk Road Fund (National Development and Reform Commission, 2015). In this respect, the Asian Infrastructure Investment Bank already provided US$1.7 billion of loans for 9 projects in BRI participating countries and the Silk Road Fund made US$4 billion of investment in other projects in the period 2014-2016 (Xi, 2017b).

• The trade dimensions. The total trade between China and other countries along the BRI exceeded US$3 trillion, and the Chinese companies set up 56 economic cooperation zones in over 20 countries in the period 2014-2016 (Xi, 2017b). Most of the trade gains stem from a higher integration of BRI participating countries in various regional and global value chains (Baniya et al., 2019).

Table no. 1. Cooperation priorities of China's BRI

No.	Cooperation priority
1	Policy coordination: promoting intergovernmental cooperation, building a multi-level intergovernmental macro policy exchange and communication mechanism, expanding shared interests, enhancing mutual political trust, and reaching new cooperation consensus, etc.
2	Facilities connectivity: improving the connectivity of the infrastructure construction plans and technical standard systems among the countries along the BRI, jointly pushing forward the construction of international trunk passageways, creating an infrastructure network connecting all sub-regions in Asia, and between Asia, Europe and Africa step by step, promoting green and low-carbon infrastructure construction and operation management, etc.
3	Unimpeded trade: improving investment and trade facilitation, removing investment and trade barriers for the creation of a sound business environment within the region and in all related countries, enhancing customs cooperation, expanding trading areas, improving trade structure, expanding mutual investment area, improving the division of labor and distribution of industrial chains, etc.
4	Financial integration: deepening financial cooperation; making more efforts in building a currency stability system, investment and financing system and credit information system in Asia; strengthening financial regulation cooperation, establishing an efficient regulation coordination mechanism in the region, etc.
5	People-to-people bonds: promoting extensive cultural and academic exchanges, personnel exchanges and cooperation, media cooperation, youth and women exchanges and volunteer services, so as to win public support for deepening bilateral and multilateral cooperation; enhancing cooperation in and expanding the scale of tourism, strengthening cooperation with neighboring countries on epidemic information sharing, increasing cooperation in science and technology, etc.

Source: National Development and Reform Commission, 2015. Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road. Issued by the National Development and Reform Commission (NDRC), Ministry of Foreign Affairs, and Ministry of Commerce of the People's Republic of China, with State Council authorization, 28.03.2015. http://en.ndrc.gov.cn/newsrelease/201503/t20150330_669367.html.

Therefore, the multidimensional approach of BRI expresses the need to analyze this topic of interest in a holistic way. First, it reveals that the Chinese initiative leads to the so-called "inclusive globalization", a new paradigm that builds new platforms for relations among many countries of the world and promotes their cooperation and mutual benefits. Second, China's BRI is seen as a potentially important tool to help achieve the Sustainable Development Goals as it focuses on building infrastructure capacity and increasing connectivity with global impact (Renwick et al., 2018). Third, the BRI shows China's growing political and economic influence worldwide and its aspiration to become the biggest economic power of the world. In search for the global economic supremacy China has made huge efforts to reduce the gap between this Asian superpower and the United States of America such as the rapid development of its banking system and the

internationalization of its currency, renminbi (Toma et al., 2017). This is why the BRI demonstrates once again China's desire to reshape not only Eurasia but the global order (Rolland, 2017).

Conclusions

Since the launching of China's BRI a plethora of researches has emerged and developed in recent years. The political and economic ascendency of China, one of today's main global actor, cannot be denied.

The importance of the paper is given by its theoretical contributions. First, it provides a better understanding of China's BRI by presenting different approaches related to this subject of increasing interest all over the world. Second, the paper demonstrates that the BRI represents a multidimensional initiative and, therefore, should be analyzed in a holistic way. Third, it shows that the Chinese initiative has benefited the world in developing infrastructure and promoting regional and global cooperation among the countries along the BRI. Fourth, the paper asserts that the BRI cannot be separated from China's desire to achieve the status of the biggest world economic power.

Further researches might expand the analysis by taking into account other dimensions of China's BRI.

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EFFECTS OF THE FOURTH INDUSTRIAL REVOLUTION ON ISRAELI LABOR MARKET

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Abstract
In this article we aim to discuss the implications of the Fourth Industrial Revolution (Industry 4.0) on the employment market in Israel, from the perspective of disadvantaged populations who find it difficult to enter the job market today. In the article we present the results of indebt interviews with three umbrella organizations which collaborate on the basis of three factors: employment organizations, employers and employees. The findings lead to a series of actions that each factor must adopt in order to better cope with the expected changes in the future employment market. The conclusions point to the fact that employees should become more active about their career development, employers should be more involved in employee training, and employment organizations should be more involved in identifying new needs for workers and employers.

Keywords
Industry 4.0, future of jobs, reskilling, up-skilling, lifelong learning, Non-Profit Organizations

JEL Classification
A10, D7, D8, E24, J08

Introduction

The future labor market presents both challenges and prospects for growth and innovation. Specialists in the field speak of necessary changes in the structure and characteristics of the labor market. The changes are the product of technological developments, demographic changes and globalization. A new concept called "The Fourth Industrial Revolution" (Industry 4.0), was born. It will have an impact on the way governments, organizations and academics choose their best strategies of growth, the best way to survive competition, how to manage their supply chain, to train their employees, service their costumers, control environmental impact, choose their strategies of social corporate responsibility, in order to maintain sustainability over time (Schwab, K. 2016)

This paper presents Industry 4.0, seen from several angles and underlines its effects on the labor market.

We will stress the implications of the expected changes in the employment market from the aspect of vulnerable populations, and the role of employment organizations in preparing these populations for the future labor market.

Literature Review

The Fourth Industrial Revolution (Industry 4.0). Definitions

Germany (2011) was the first country to coin the term Industry 4.0 as connected to engineering based on high tech strategies (Mosconi, M, 2015). Later on, we came across the term in management and economy. Pan at al. (2015, p. 1537) suggested that "Industry 4.0 represents the ability of industrial components to communicate with each other".

Kovacs at all, (2016, P.122) also define the fourth industrial revolution as "Industry 4.0 conception is the introduction of intelligent systems (artificial intelligence – AI, Information communication technology – ICT) linked to network (the internet of things -IOT), which realize self- regulation production; machines, people, products, equipment, that will communicate with one another".

Piccarozzi et al., (2018) identified six methodologically studied related categories that influenced Industry 4:0:

- ***strategy***- governments and organizations' strategies will remodel following the changes brought by Industry 4.0;
- ***value chain***- Industry 4.0 will be responsible for greater strength and flexibility of the business structure;
- ***competitiveness***- Industry 4.0 will add to steady global competition;
- ***technical components*** – Industry 4.0 brings new levels of information technology tools, simplifies smart manufacturing and logistics processes, by using 3D printing, Big Data, IOT, Cyber Physical System (CPS), Internet of services;
- ***smart factory***- Industry 4.0 will innovate and lead to the birth of new, customized products and shorter product lifecycles;
- ***internet of things***- the combination between internet new technologies and industrial value.

Industry 4.0. Influence on the Labor Market

The Future of Jobs Report (2018), World Economic Forum, and ILO-International Labor Organization (2017) speak of the impact of Industry 4.0 on the labor market. Industry 4.0 brings both benefits and limits. On the one hand, it improves the job productivity and creates new high-quality jobs. On the other hand, it threatens the relevance of today's jobs and professions. The changes brought by Industry 4.0 speak of the need to acquire new skills or capabilities in the very near future.

In this new context, governments, businesses, non-profit organizations, employees, and academic institutions will be responsible for reskilling and upskilling present and future employees. Table no.1 presents what specialists consider to be the ten critical future workforce skills.

Table no. 1 The 10 most important workforce skills

in 2020	in 2015
1. Complex Problem Solving	1. Complex Problem Solving
2. Critical Thinking	2. Coordinating with Others
3. Creativity	3. People Management
4. People Management	4. Critical Thinking
5. Coordinating with Others	5. Negotiation
6. Emotional Intelligence	6. Quality Control
7. Judgment and Decision Making	7. Service Orientation
8. Service Orientation	8. Judgment and Decision Making
9. Negotiation	9. Active Listening
10. Cognitive Flexibility	10. Creativity

Source: Future of Jobs Report, World Economic Forum, 2016

The conclusion we draw after examining (table no.1):

- soft and non-cognitive skills are imperative;
- the rapid changes will require individuals and business to cultivate the capabilities of lifelong learning according to age and gender. According to the World Population Project by the Unites Nations (2015), in 2050 we expect to see about 34% of the population over the age of 60 in Europe;
- employment relationships will move towards freelancing and temporary arrangements.

The relationship employees - employer will be different. We are likely to see more outsourcing by organizations, among them Non-Profit (Gotesman Bercovici, E. et al., 2017) and the evolution of the Gig-Economy (Jolley. D. 2018). This new kind of relationship can also create a new sharing economy that enables people to get what they need from each other without intermediaries (Honeycomb 3.0).

Along with the new skills required, the management system will change and become more automatic.

After examining more than 2000 companies from all over the world related to the level of automation and use of digital processes, Price Waterhouse Coopers, a leading player in the consulting industry, examined the current level of integration of automated business sequences and the forecast for the next five years.

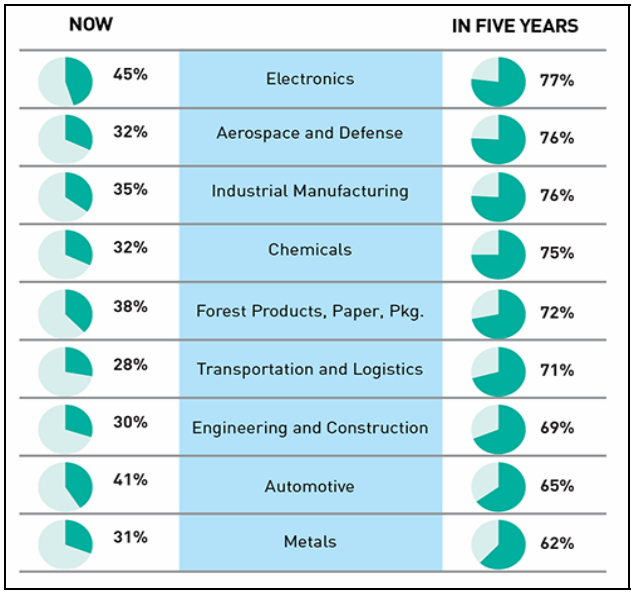

Fig. no. 1 Industry 4.0: Building the Digital Enterprise

Source: Geissbauer 2018 Study by PWC

Industry 4.0 and the Labor Market in Israel

Israel's unemployment rate is relatively low (4.1% in February 2019). There is an increase in hourly wages, along with a high number of work hours. Though, we notice spot gaps in the participation of certain populations in the labor market. In addition, those who work deal with unfair promotions. According to Taub Center (2018), those populations are: Ultra-Orthodox Jewish population (10% of Israel's total population), Arab population (20% of Israel's total population), Israelis of Ethiopian origin (2% of Israel's total population), people with disabilities (7%-13% of Israel's total population between age 20-44) and other peripheral populations, can't compete with the majority group (non-Orthodox Jews) in terms of employment- earnings and promotion. It is estimated that by 2059, the proportion of

Arabs and Orthodox Jews in Israel will increase to 50% of the total population (The Israeli Central Bureau of Statistics, 2018).
Following the expected future changes in the labor market, governments, businesses and Non-governmental Organizations must take more action on behalf of those population for closing those gaps.
This article maps some of these solutions and offers new points of view.
In this article, we chose to focus on the perspective of employment organizations (nonprofit organizations/business), employers, and marginalized employees), regarding the implementation of the future labor market in Israel.

Research Methodology and Findings

Alongside government services it is estimated that in Israel function about 200 employment organizations for underrepresented or weak populations in the labor market. Among them are organizations that are incorporated as non-profit organizations or as businesses. Some are nationwide and some are regional.
We collected information from three umbrella Israeli organizations that advise and link dozens of employment organizations to businesses: Joint-Tevet, Zionut2000, Eretzir.
We performed in-depth interviews with program managers of these organizations and analyzed data they had pulled together on the issue between 2017-2019.
We examined the issue from several points of responsibility view of the candidate, employer and the employee organization.
We asked "How will the recruitment processes of new employees and the promotion of existing employees change in light of Industry 4.0?"
In Table no. 2 we present the current state of these processes and the necessary changes to be made in accordance with Industry 4.0.

Table no. 2 Current versus Future stages of employment needs

	Candidate point of view	Employer point of view	Employment organization point of view
Current preparation before entering the labor market	➢ Expectation that new knowledge will be supplied by others (like government, employers, employment organizations)	➢ Responsibility for market adaptation is on government, employment organization and academy	➢ Provide only short-term professional solutions
Future preparation before entering the labor market	➢ Self-assessment of capabilities, skills, strengths and weaknesses ➢ Autodidact of new technologies, professional knowledge	➢ Industry incorporation to jointly study the future employment needs of their industry ➢ Collaboration with other sectors (as academy, government, non-profit-organizations) ➢ partnership in funding of professional training	➢ Developing managerial ability to identify long term employment needs. ➢ Identifying specific employment needs for different industries ➢ Provide new types of training for candidates (like lifelong learning, flexible thinking, team work, big data analysis, basic technological skills)
Current recruitment process	➢ Candidate is passive in the processes	➢ Do not share with candidate what the recruitment process will	➢ Keep the knowledge about the employer and the

		look like ➢ Screening process is based on a shallow reading of the resume or a very short telephone interview	preoccupation process inside and not enough is transferred to the candidate ➢ Focus on presenting the candidate's employment experience rather than his skills
Future recruitment process	➢ Candidates are more active in the recruitment process, reveals curiosity, asks questions, flexible in dealing with new ways of work	➢ Wider participation of the candidate in the screening and recruitment process ➢ Broadening the recruitment channels in social media ➢ Expand their recruitment tests, in a more interactive way with the candidates for enabling them to show their soft skills	➢ Research the new needs of the employer and pass it on to the candidate ➢ Teach candidates to be more independent in the process ➢ Teach candidates how to present soft skills in the process ➢ Accompany the candidate also after the recruitment period
Current employees promotion processes	➢ Employees are waiting for the employer to offer them promotion ➢ Promotion is usually perceived as management promotion and not up-skilling or knew knowledge	➢ Promotion is seen mainly on the basis of granting management level or salary rise	➢ Are not involved in those stages
Future Employee promotion processes	➢ Independently and actively promote their professional knowledge	➢ Promotion should also be seen in the ability to teach employees new professional areas relevant to the future organization and new skills	➢ Should be more involved in those stages by encouraging candidates to apply for promotions, and provide new training for the employers
Current Training processes	➢ Expects the organization to pass new knowledge, and only during certain career periods	➢ Professional training is usually done in a classroom with a teacher	➢ Enter the field only on demand of employers
Future Training processes	➢ The employee has to adapt self-lifelong learning skills	➢ Independent learning through technologies ➢ Learning through experience and mentoring by others employees	➢ Should initiate tests of future needs, and begin initiating training for employers
Current Preparation for retirement	➢ Is not aware of all his social rights ➢ Is frightened of the changes-socially and economically ➢ Is removed	➢ The organization deals with the cultivation of young workers	➢ Few organizations are involved in a second career for people age 45+, while the needs of this population are rising

	occasionally from their responsibilities and new knowledge		
Future Preparation for retirement	➢ Be more proactive in finding solutions independently for themselves	➢ Inform hits employees about their rights prior to retirement ➢ Encourage its employees to continue working after official age of retirement ➢ Create supporting infrastructures that enable employees to pass on their knowledge.	➢ Develop more tools and knowledge to accompany employees in their second career even at old age

Source: Authors, 2019

From table no. 2 we can learn that employees should be more active in their career developing and not wait for external sources to lead them on to developing new capabilities, skills and professional knowledge.
Employers should work together with other companies and sectors to provide new solutions for new and existing workers.
Employment organizations should be more active in understanding the new changes in the field and escort employees for a longer period.

Conclusions

The Fourth Industrial Revolution will affect the jobs of the future, the way in which organizations work and the characteristics of employees, employers, and employment organizations. These organizations should pay more attention especially to weak populations who find it difficult to enter the labor market. There is no doubt that these populations, whose numbers are in continuous growth in Israel, will require additional attention in order to be able to join the labor market. Given the small number of subjects interviewed, we suggest that further research will be done with more employers and employment organizations in Israel.

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DEVELOPING FOOD SUPPLY IN ACCORDANCE TO CUSTOMERS' NEW EXIGENCIES

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Abstract
Food security and safety are emblematic for well-being, social and economic progress. Considering the limited resources of land and water, in order to attain this goal can be possible only through an increase productivity and a proper technological progress. The food system is under continuous pressure of change, new regulations and different requirements for commodities and trade efficiency, which is the second important pillar of food security. This paper aims to highlight the trends in the last 50 years in terms of food supply and preferences on the Romanian market in comparison with the European evolution. The analysis revealed some important changes in the consumption behaviour of Romanians in the last decades with an important increase in product as milk, dairy and vegetables and decrease in the quantity of supplied meat. Compared with other European regions, Romania has an important supply of cereals and vegetables, and a weak supply of fish, seafood, sugar and sweeteners.

Keywords
food security, food safety, food balance, food supply and demand, food import and export.

JEL Classification
L66, Q17, Q18

Introduction

Food Safety is a relevant aspect which countries and organisations should consider thanks to its important contribution to good health and to the opportunities of economic and development growth of regions or countries (Fung, Wang and Menon, 2018; Hu et al., 2019). Maintaining food safety can be achieved only through a proper food containing resources to ensure the entire food demand. In this regard, food supply should keep up with the increase population worldwide. An important component of food supply is the agricultural food production, directly influenced by the area of cultivated agricultural fields and its exploitation efficiency (Chavas, 2017). Having in mind that land and water availability for agriculture is limited, increasing food supply can be done only by increasing productivity (Popp et al., 2012).

Literature review

Food security refers not only to the immediate supply of protein and energy, but also to the sustainable provision of a healthy diet, including accessibility (as a price) and the

availability (as quantity) of food, as part of our diet (Martindale, 2015). It is clear in this case that food security do not refer only to quantity, but also to quality of life and food safety factors (Martindale, 2015).

By its nature, agriculture, production, processing and distribution of food cannot be "***absolutely controlled***" processes; Consequently, extending more to companies which adopt strategies of reducing any risks, as much as possible (Roberts, 2018), is more important. The relevant elements of a food safety culture are described in Fig. no.1.

Fig. no. 1 Food safety program
Source: Wallace, Sperber and Mortimore, 2018, p.154

Even if a company manages to create a solid food safety culture, there are many other challenges once with the growing complexity of global food supply chains, new variations in food safety regulations appears and there is always a lack of uniform requirements between different commodities or countries (King et al., 2017).

Especially when discussing about meeting customer requirements in terms of food quality, we should consider „***any dimension, chemical or organoleptic property that gives the product the attribute to be suitable for use***", according to J.M. Juran (Dima et al., 2004). Quality characteristics are categorized differently in the literature, according to Oprean & Kifor (2002) quality is: satisfaction, utility, purpose; satisfying internal and external clients; compliance with standards and specifications; availability of goods at the requested time, place, quantity, price; using a quality management system for production; obtaining the merchandise with an appropriate profit; obtaining a competitive advantage; or according to Olaru (1999) quality means: economic characteristics; aesthetic aspects; security attributes; construction complexity and ecologic dimension.

Within the current highly dynamic economic environment, the technological progress evolved so much, that in many situations the difference in the buying decision is made by small differences in terms of aesthetic aspects, ecological impact, etc. Thus, the symbolic dimension gained an increased importance, buying goods and services not only for their utility, but also for the associated feelings as freedom, comfort, performance, power etc. (Dima et al.,2006). Particularly, when it comes to food quality, there are three main dimensions that should be considered: (1) safety features, (2) composition and (3) quality characteristics, each one with several dimensions, as described in the following figure:

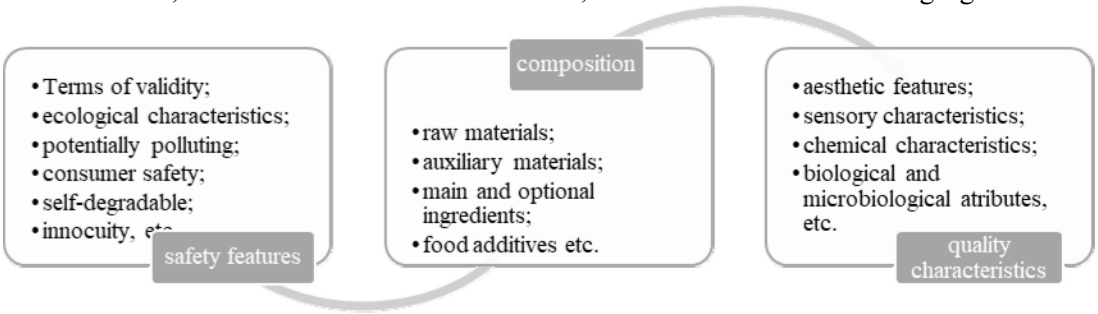


Fig. no. 2 Quality characteristics of food
Source: Adapted from Dima et al., 2004

These are the main characteristics considered by users when they compare products and take

the decision to buy. At the same time these characteristics are used by companies to select their products on the market.

The importance of trade in the supply of food

Trading food commodities is needed to meet the differences between internal production and the demand on the market in terms of quantity, quality and price. Along with the growing distribution, more efficient transport methods and new technologies in the food processing industry, the trade with food commodities has grown significantly over the past decades.At the same time, the population got access to a wider range of products, their choices and preferences have evolved, leading to an increase in imports, especially of meat, fruit and vegetables. The increase in demand for a larger category of products, required improved methods for consumer protection, also to adapt to national food and nutrition policies. Consumer preferences became increasingly complex in terms of nutritional, toxicological, organoleptic and aesthetic characteristics of food. Moreover, consumers are mainly interested in the production method, searching for bio/organic products, in the origin of food, asking for more local products as part of the slow food trend to support the economy assigning food as an important role for health, but also to encourage the local economy (Dima et al.,2006). Increasing food quality is needed in satisfying the consumer needs and also in increasing of the international trade.

The relation between the economic and metabolic market

A particular aspect of food products is that, apart from their economic value (quantity, price, quality, etc.), their metabolic contribution (nutrients, energy, etc.) is important in terms of the consumers health and well-being. Thus, a difference between an economic and a metabolic market for foodstuff can be noticed. On the metabolic market the balance between demand and supply of nutrients - structure requirements - is more difficult to reach, compared to the relation on the economic market in terms of food demand and supply - quantity requirements (Dima et al.,2006). Customer requirements in terms of quantity and structure of food don't often meet the metabolic necessities, thus reflecting in the overall quality of life.

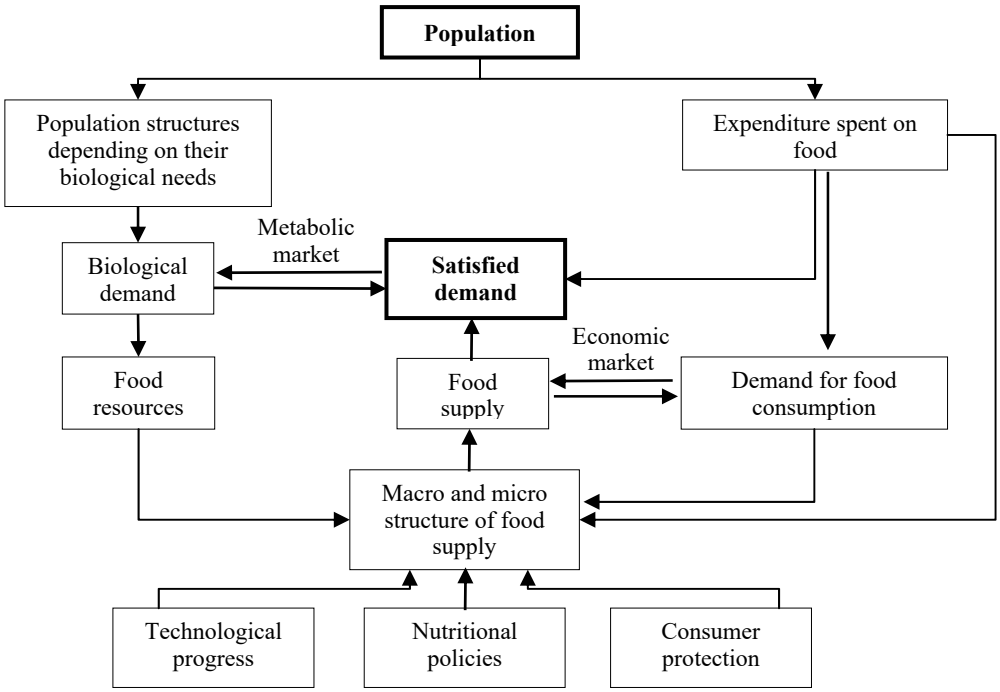


Fig. no. 3 Correlation between the metabolic and economic food market

Source: Dima et al., 2004

Improving the balance in supply and demand on the metabolic market is also an important goal of the national and world-wide policy towards consumer protection. The relation between the economic and metabolic market also is described in Fig. no. 3.
Population access to food in terms on quantity and quality (structure) depends on internal production and imports. Lately, we can notice an important change in terms of food options from ***what raw materials we have*** to ***what raw materials we need for a certain receipt***. Thus, the customer is more in control of what he likes to eat, gaining access to a much more varied and affordable range of raw materials.

Research methodology
In order to fulfill the objective of our research, we used a secondary data analysis to study the tendency in the supply and demand of food in Romania. We used the latest data available on the website of Food and Agriculture Organization of the United Nations. We especially focused on food production quantities, import and export quantities for each of the main important categories of food. We also aimed to identify changes in the structure of food supply which is well connected with the demand on the market. In the second part of our analysis we studied the food balance in terms of food supply kg/capita/year and kcal/capita/year. In some case the most recent data available was between 1961-2017, in others only between 1961-2013 were available.

Results and discussion
Based on the available data on Food and Agriculture Organization of the United Nations, we performed an analysis of food production, imports and exports for each of the following categories: (1) cereals, (2) meat, (3) fruits and vegetables and (4) milk and dairy products. Depending on the availability we identified for each category the evolution in the last 50 years.
In the case of cereals it can be seen an important increase in the internal production, exceeding 27 billion of tonnes in 2017.

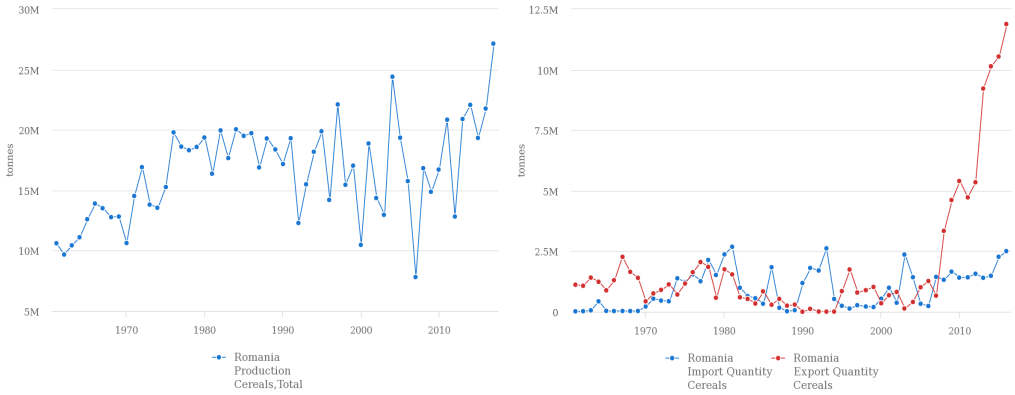


Fig. no. 4 Romanian cereals production, imports and exports
Source: FAOSTAT, 2019

This can be explained by policies which support the agriculture by significant founding in countries, in order to increase productivity. In 2017 the production of cereals in EEC (296 billion of tonnes) was more than double compared to Western European Countries (WEC) with a production of 120 billion tonnes of cereals.

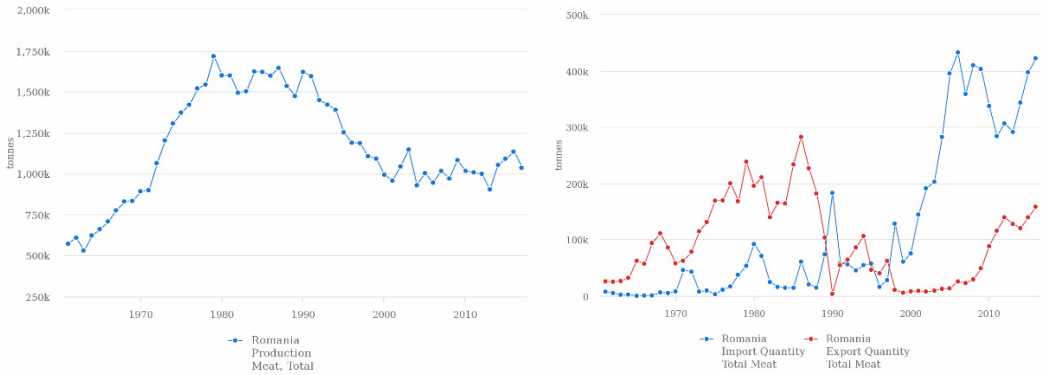


Fig. no. 5 Romanian meat production, imports and exports
Source: FAOSTAT, 2019

This increased production combined with a low processing capacity in terms of food industry explains high exports of 11,8 billions of tonnes compared to imports of 2,5 billion tonnes in 2016. When it comes to meat, things are different. Romanian production of meat, reached around 1 billion of tonnes in the last years, declining sharply between 1990 and 2000 along with an increase of imports for this category of products. This growth is also reflected in the high amounts of meat imports in Romania after 2000, most probably because of better prices and significant contracts with large supermarket chains.
As can be seen in the Fig. no. 5, Romania registered an amount of 422 thousand tonnes imports and only 158 thousand tonnes export of meat. The analysis of fruits and vegetables production revealed that Romania produced in 2017 around 3,2 billions of tonnes vegetables and 2,6 billions of tonnes of fruits. The vegetable production can be differently noticed according to Fig. no. 6.

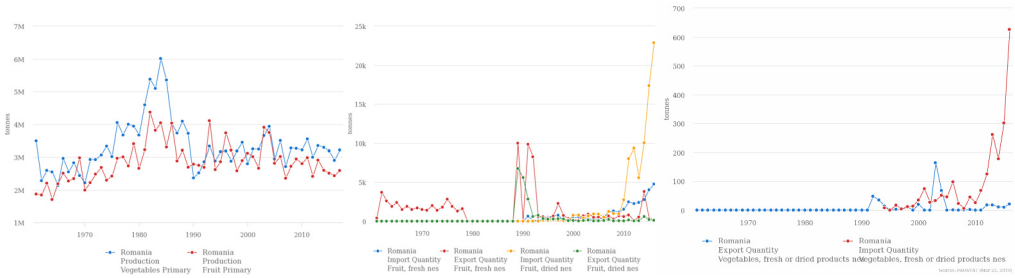


Fig. no. 6 Romanian fruits and vegetables production, imports and exports
Source: FAOSTAT, 2019

Exploring the imports and exports of fruits, it can be noticed an substantial increase for dried fruits, reaching 23 thousand tonnes in 2016, while fresh fruits recorded 5 thousand tonnes. In this case, exports of fruits are irrelevant, around 0,2 thousands of tonnes for fresh fruits and 0,1 thousand tonnes for dried fruits in 2016. Also, an impressive growth was recorded by vegetables imports in Romania, with more than 100% increase from 2015 to 2016 with a volume of 626 tonnes imports and an unimportant volume for exports of vegetables 21 tonnes in 2016.
In case of milk and dairy products, Romania recorded a decrease in production reaching a value of 4,3 billions of tones in 2017. For this category of products EEC had a constant performance while WEC increase their production, surpassing EEC performance.

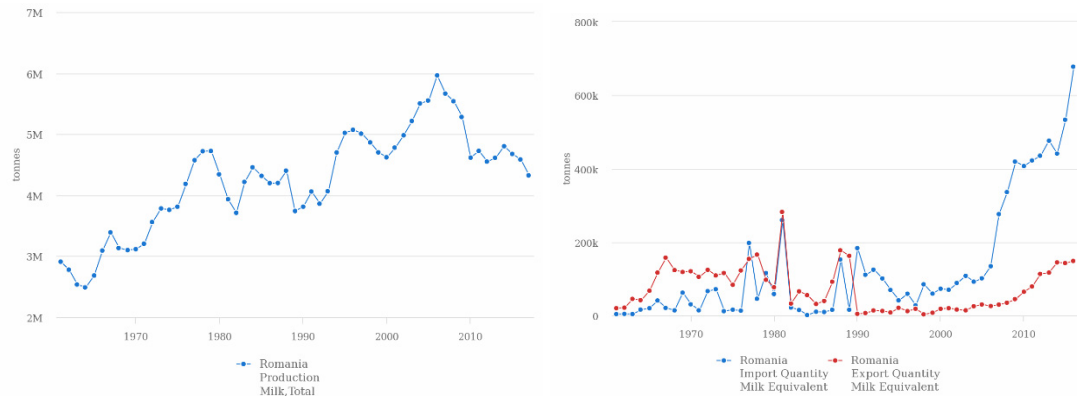


Fig. no. 7 Romanian milk & dairy production, imports and exports
Source: FAOSTAT, 2019

Romanian imports of milk and dairy products grew more than three times, up to 670 thousands of tonnes in 2016. For this category of products, there was also an increase in the export volume, registering 148 thousands of tonnes of milk and dairy products exported.
To better understand changes in consumer preferences and food diet in Romania, an investigation in the supply quantity (kg/capita/year) was performed. Besides the most important four categories explored so far, we added fish and sugar.
It the last 50 years, the following major changes can be observed in food supply which are directly related to food demand:

- the quantity of milk and dairy products has doubled, becoming the most important category of food demand on the market;
- cereals remains the second most important food product, with a decrease of 25% in present, compared to 50 years ago;
- vegetables are as equally important as cereals but, in their case a positive evolution can be observed, as their quantity doubled during the last decades;
- fruits also doubled their quantity in Romanian food supply;
- meat production recorded a completely different tendency, with an important increase until 2005 and, after that, with a constant decrease, with a share of 20% less in the last year;
- the last two categories: sugar and sweeteners and fish & seafood have the smallest share in the overall food supply, but these categories have doubled in size compared to 50 years ago;
- the same tendency was also recorded in the case of alcoholic beverages, their quantity being doubled, compared to previous times.

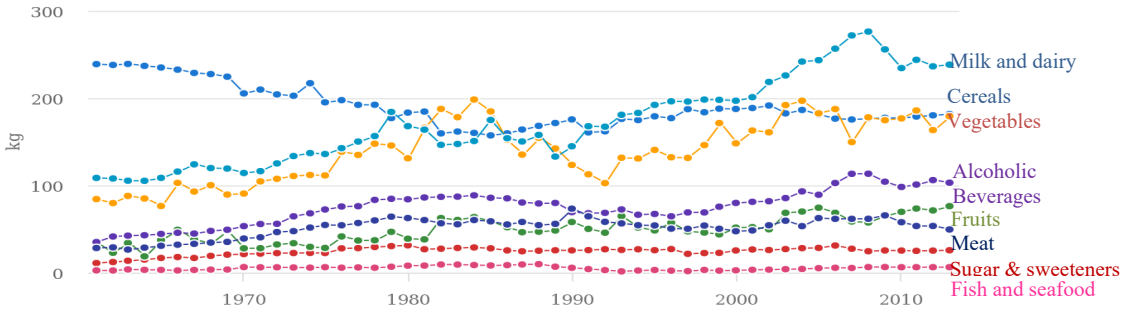
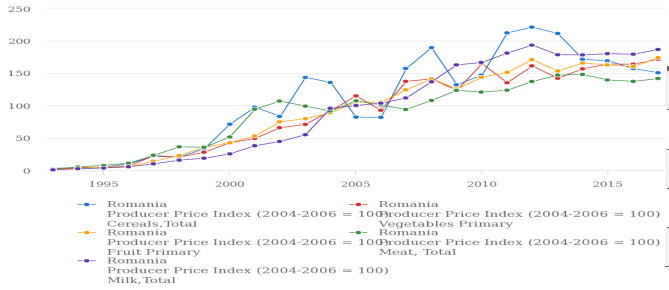


Fig. no. 8 Romania food supply quantity (kg/capita/year)
Source: Adapted from FAOSTAT, 2019

Price increases are closely linked to rising demand for milk and dairy products (187%), followed by fruits and vegetables (172-174%), cereals and meat, respecting the exact order as in Fig. no. 8. Price increase can be explained also by an important increase in imports of milk, dairy products, fruits and vegetables. Even if meat imports was pretty high, for this category the price increase was more moderated given the declining demand.



Item	Percentage in 2017
Cereals	151%
Vegetables	172%
Fruit	174%
Meat	142%
Milk and dairy	187%

2004-2006=100%

Fig. no. 9 Romania Producer Price Indices – Annual
Source: FAOSTAT, 2019

A more detailed comparison for food supply quantities between Romania, Eastern Europe, Western Europe and the entire European region is summarized in the following table:

Table no. 1 Food supply quantity (kg/capita/year) in 2013

Item / Region	*Romania*	*Eastern Europe*	*Western Europe*	*Europe*
Milk and dairy products	238.33	171.05	261.29	215.11
Cereals - Excluding Beer	181.72	145.92	114.85	132
Vegetables	179.19	121.46	97.5	115.1
Meat	49.4	68.75	85.28	77.34
Fruits - Excluding Wine	76.17	67.79	107.64	94.93
Sugar & Sweeteners	25.59	44.43	45.64	41.75
Fish, Seafood	6.22	17.08	21.45	21.85

Source: FAOSTAT, 2019

The data proof that in Romania there is a much higher supply of cereals and vegetables than in the rest of Europe, a much lower meat, fish, sugar and sweeteners supply compared to EEC or WEC. In case of milk and fruits we have a better supply than EEC but smaller than WEC. All these facts are influenced by population purchasing power and our culinary cultural heritage.

Conclusions

Current food security and safety requirements refers not only to immediate supply of protein and energy, but also to an accessible and sustainable healthy diet. There are new challenges and factors that could affect food safety, and the culture of food safety developed at the organization level which becomes more and more important.

We need to clarify the quality characteristics of food in order to obtain a balance between the metabolic and economic market of food products. There is often a higher difference between demand and supply of nutrients (on the metabolic market) compared to the balance between food demand and supply (on the economic market). Population access to food, both in terms on quantity and quality (structure) depends on the internal production, imports and exports and also by the purchasing power of the population and price of food commodities.

Studying the trends in demand and supply quantity of food in Romania, compared to other European regions, and also changes in the structure of food supply revealed some important behaviour and food preferences of our population. An important increase in the production

of cereals leads to an increase of exports for this category of products and an increase of their supply on the market, more than the European average (both in EEC or WEC). The opposite was recorded in the case of meat, the production decreased, the imports had an important increase but, still the supply on the market of this type of products is smaller than the European average. In case of fruits and vegetables their production remained almost constant, but their imports recorded high values and this fact led to an important supplied quantity (kg/capita/year) on the Romania market, for vegetables more than the European average and for fruits better than the EEC average but under the WEC average. National production of milk and dairy products slightly decreased but, it was offset by a significant increase of the imports of this category with a supply quantity (kg/capita/year) over the European average, between EEC and WEC values. Fish and seafood are still rare products in the Romanian diet possible because of its price. These changes are mainly determined by the development of our country, the increase in the purchasing power of the population but, at the same time, the food cultural heritage is still influencing the current demand on the market, being not so exposed to multiculturalism and migration.

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THE ANSWER TO A SUSTAINABLE AND COMPETITIVE TOURIST DESTINATION – THE ADVANTAGES OF A DESTINATION MANAGEMENT ORGANIZATION IN PREDEAL, ROMANIA

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Abstract
The main function of a Destination Management Organization (DMO) is to ensure quality of services and attract tourists in the areas where local development is necessary, in order increase the economy level. The mountain resort Predeal, Romania, has not experienced any industrial development in the past so it is a city highly dependent on tourism activities such as winter sports, night life and national competitions. In order to achieve a competitive and successful tourist destination, the collaboration between the public and private sectors is vital. Both quantitative and qualitative research methods were used in the present paper, concluding that there is a pressuring need for an organization intended to manage Predeal as a tourist destination.

Keywords
Destination Management Organization; tourism; local development; cooperation; public sector; private sector

JEL Classification
Z18, Z30, Z32, Z38, L83, M10, M38, R0, R11, R58

Introduction

In recent years, the tourism industry has been subject to change, continuously growing and becoming more and more diverse. Revenue coming from tourism has been the main recovery source for many national economies in the context of the latest global financial crisis. Since the crisis started in 2009, tourism has slowly increased at an international level, culminating with a recorded growth of 7% in 2017 (UNWTO Secretary-General Report, 2018).

According to Adrian Voican, vice-president of the National Association of Travel Agencies in Romania, in 2017 the total number of tourists choosing Romania as a holiday destination has reached 12 million people, out of which an impressive 9.5 million were Romanian citizens (domestic tourism). (Mihai, 2017) (Andrews, 2007) With statistics clearly indicating that there is a growing interest in Romania as a tourist destination, the question is, are there the necessary conditions to create memorable experiences for its tourists?

Every destination is multifaceted, with a variety of stakeholders that ought to be satisfied. Establishing a common purpose and collaborating to successfully achieve it is the key to

offering compelling experiences for tourists in a chosen destination. According to UNWTO, destination management organizations (DMOs) are defined as "coordinated management of all the elements that make up a destination (attractions, access, marketing, human resources, image and pricing). It takes a strategic approach to link up very separate entities for the better management of a destination. Its role is to lead and coordinate activities under a coherent strategy or plan, serving the interests of all stakeholders" (UNWTO, 2007).
Introducing a law on Destination Management Organizations in Romania (Law no. 275/2018) will create a series of challenges, including the need for a new organizational and cooperative model.
Predeal is nationally known for being the city with the highest altitude in the country, ranging from 1030 to 1100 meters. Moreover, it is also the only mountain resort that has not experienced any industrial development, even though it is the only one that is oriented towards tourism and services, particularly due to its remarkable winter sport facilities.
Given that tourism is the main source of income for the community in Predeal, improving the destination management system will ensure the sustainability and competitiveness of the city as a tourist destination.
The Braşov Tourism Forum, held in March 2019, concluded that for the efficient development of a destination, the involvement of every citizen, whether entrepreneur in tourism or not, is compulsory. Short term, the main target must be the establishment of the Destination Management Organization at a local level, then at a county level, and last, but not least, at a national level.
DMOs represent the critical implementation arm of a tourism strategy, a significant and integral component of the tourism supply chain. The purpose of this paper is to evaluate the necessity of setting up an organization intended to manage Predeal as a tourist destination.
The paper will start with an analysis of Predeal as a tourist destination. Research on the tourists from Predeal and a management analysis have been conducted through a mixed research methodology, consisting of both quantitative (questionnaire) and qualitative research (interviews). The paper will focus on the mission and objectives of the DMO Predeal in the current Romanian legal framework.

Literature review

Gunn defines a tourist destination as a geographical area, where one can find all the elements that satisfy tourists' expectations and contribute towards a memorable experience: the natural resources, the accessibility of the means of transport, touristic product offers, the availability of touristic attractions, availability of promotion and access to information for tourists on location, but also prior to their arrival at the destination (Gunn, 1994). However, in order to achieve a competitive and successful tourist destination, the local people play a vital role, as they are the ones that contribute directly and influence the experience of tourists, through the customer service they provide, as well as through simple everyday social interactions.
The management of a destination in the era of globalization is done through dedicated structures that are meant to organize the synergies between the relevant local players in the tourist sector of a destination, in order to achieve the double effect: satisfaction of both tourists and locals, but also generating profit for the community (Rotariu, 2008).
Destination Management Organizations are designed to contribute to the development of an integrated mechanism to ensure a coherent implementation strategy on all levels, thus providing a solid foundation with a positive impact on all players involved (Pike, 2008). Improving the destination management system will ensure the sustainability of the sector, and DMOs will have an integrating role, providing the city's vision of development as a tourist destination, as well as coordinating and supporting the development of a competitive destination.

Cooperation is a fundamental brick in building a destination (Camillo, 2015). As a result, the coalition of many relevant stakeholders and shareholders in a destination is necessary to ensure that everyone is working towards a shared vision and a shared goal, namely the sustainability and competitiveness of the destination. Even though the focus of the DMOs typically consisted in marketing activities, these structures ought to extend their role and to become a strategic leader in the development of a destination. Today, many destinations have a DMO that helps lead the way, as it represents a very important ingredient for success for any tourism destination (UNWTO, Destination management).

The main role of a DMO consists in fulfilling marketing, promotional and sales activities, as well as coordinating the long-term destination planning and management, since the consumer perceives and buys a destination as one integrated product (Bieger & Müller, 1998; Bieger, Beritelli & Laesser, 2009; Pearce, 1992; van Harssel, 2005).

DMO Predeal will be in charge of gathering local entities (relevant stakeholders from the local tourism sector) aiming to develop and manage Predeal as an appealing tourist destination. With a focus on marketing and product development, the goal of the DMO is going to be to create a unique experience, that will excite and intrigue tourists.

The primary functions of the Predeal DMO will be: leadership and direction; working with partners to create the strategy and development plan for the destination; research and data collection; supporting or coordinating implementation of the strategy and development plan by all partners; directly implementing certain elements of the strategy and development plan.

The main objectives of the DMO will be the following: to define the local vision statement; to create an operational common fund; to organize regular stakeholder consultations; to identify the local competitive edge – Unique Value Proposition; to ensure product development, packaging and presentation, as well as be in charge of the marketing strategy; to take charge of the inter-sectorial coordination (horizontal approach); to ensure cooperation and coordination with other DMOs in the region; and take charge of the efficient cooperation and management of local tourist information centers.

In order to achieve these objectives, the establishment of the DMO Predeal will be built with upon consideration of the following factors:

a. Funding. Predeal DMO could be a very relevant institutional catalyst and a main player for attracting funds, especially those that are non-reimbursable, free and open for many relevant stakeholders and shareholders from its structure. It could raise funds in the locality and in the conurbation area, especially in those localities that are rural through various financing programs, mainly those financed by European Commission (EU funding, online content) and national government, but also by International Financing Institutions, foreign governments, other foreign public or private donors.
b. Capacity building. DMO Predeal ought to be the most important institutional provider for the building capacity interest of its members, and a very active promoter of the destination as a whole. As the most important aspect of the attractiveness of Predeal resort consists in the beauty of its natural landscapes, the tourism practitioners from this destination need to increase their efforts to improve their capacity to manage the local natural resources in a sustainable way (OECD, 2001). According to mid and long-term strategy, tourism is a priority for the economic development of Predeal and its conurbation (Predeal city strategy for local development).
c. Local community engagement. Tourism development must be part of the regional policies, mainly due to the undeniable economic, social and environmental benefits that it brings to the locals in a destination (Luštický et al., 2012). A tourist destination implies the harmonious cooperation between a multitude of elements, a

cumulated effort of the whole community: not only staff in the tourism sector contribute to success, but each and every individual who lives in a destination and interacts with the tourists (Stange et al., 2011).

Methodology

The present research has been conducted with the purpose of validating the necessity for setting up an organization aimed at managing Predeal as a touristic destination. For primary research, data were collected through a mixed research methodology: a questionnaire aimed at tourists who have visited Predeal, and two in-depth structured interviews with stakeholders and shareholders rom the region.

The main reason for choosing to interact with both tourists and stakeholders was so that the research includes data and opinions from both parties, each of the them being equally important in the present study.

Questionnaire

Questionnaires are amongst the most popular quantitative research methods. On the one hand, questionnaires have great advantages, such as the fact that they can be sent out to a large number of participants, they allow "plenty of time for the respondents to formulate their responses" and, due to their anonymous nature, "any embarrassment on the part of the respondent" is avoided. (Collins, 2010, p.128) However, on the other hand, there are also a number of disadvantages to questionnaires, such as "large time delays waiting for responses to be returned", as well as the risk of receiving incomplete answers, which leads to the invalidation of the entire questionnaire and the inability to make reference to the data in the results analysis. (Collins, 2010, p.128).

When designing and distributing the questionnaire, particular attention has been given to maintaining a clear distinction between stakeholders and tourists, since tourists, under the stakeholder theory, can also be regarded as stakeholders (Freeman et al., 2010).

The aim of the questionnaire was to assess tourist satisfaction with the facilities and customer service in Predeal. It contained 9 questions and was distributed during the period of 20th December 2018 and 20th February 2019. A non-probabilistic sampling method has been used and the questionnaire has been distributed to 836 tourists. A total of 208 questionnaires have been returned and validated, meaning that there has been a 24.88% response rate. A detailed discussion on the statistical analysis of the findings, is included in the Results section below.

Interviews

Structured interviews have been chosen as the research method to collect stakeholder opinions on the present issue. Even though structured interviews have been criticized for interfering with the free flow of information between interviewer and interviewee, in the present paper this research methodology has been chosen over semi-structured or unstructured interviews in order to ensure consistency of themes across the three interviews. (Myers, 2013) In order to minimize the risk of restricting the interviewee, the interview consists entirely of open-ended questions, which enables the respondent to freely express their opinion at length. (Collins, 2010, p.136)

In order to provide a variety of opinions, particular attention has been given to the profiles of the chosen interviewees: they both have a vast experience in the tourism industry in Predeal, but their area of expertise, as well as their roles are different. As a result, their opinions cover all the five components of the tourism industry: accommodation, attractions, transport, travel organizers and destination organizations. (Evans et al., 2011, p.35) The first respondent, Marius-Catalin Campeanu is the director of the National Tourist Information and Promotion Center with the main task of coordinating the entire tourist activity of Predeal resort town. The second respondent, Antoni Kuhnen is the Owner of AVCO Consult, having over 40 years experience in the hotel and hospitality industry.

Results and Discussion

Questionnaire: the tourist perspective

According to the research, the highest number of tourists visiting Predeal (55%) are aged 24-39 – mostly millennials, closely followed by people aged 40-55 (35%). The research reveals that the lower and upper limits of the age groups are the ones that travel the least, accounting together for only 10%. This result leads us to conclude that the resort is a dynamic one, as it is mainly young people that manifest an interest in it. This could be an important factor when arguing that Predeal would highly benefit from the development of new attractions, such as nightlife or other social events (for example, festivals), which will attract more tourists.

The majority of individuals are female (60%), with only 40% males – which could lead us to argue that more efforts should be concentrated towards targeting male subjects in promotional initiatives. Moreover, the study also revealed that 88% of individuals travelling to Predeal are currently in employment.

As expected, the great majority of visitors choose Predeal as a holiday destination (81% of respondents), which is another argument towards the need to further develop tourist facilities in the area. As a secondary reason, people from the sample may travel to the area for business purposes (12%) or just to visit family or friends (7%). The respondents were not able to identify any other reasons for visiting the area.

When asked about specific activities they seek when travelling to Predeal, 29% of the participants said that they were in search for relaxation, 24% said that they do it for the nature, 19% do it for sports activities, and 11% claim that they are in search of adventure. Business was chosen by only 4% of the respondents, with nightlife and religion ranking the lowest, chosen by less than 1% of the participants.

This calls for a plan of action in which one could decide either for strengthening the strong points even more by improving the existing infrastructure (trails, sports facilities, tourist circuits, bouldering and climbing etc.), or by capitalizing the weak points into actual assets – themed and adventure parks, culture events and concerts, film and theatre festivals and a more active nightlife.

The tourist satisfaction (Figure 1) was measured on a Likert scale from 1 to 5, with 1 representing the minimum level of satisfaction and 5 representing the maximum level of satisfaction. The average satisfaction was measured at 3.9, which can be assessed as very good. The variance corresponding to this distribution is relatively low (0.83), which asserts for a concentration of positive opinions around the average.

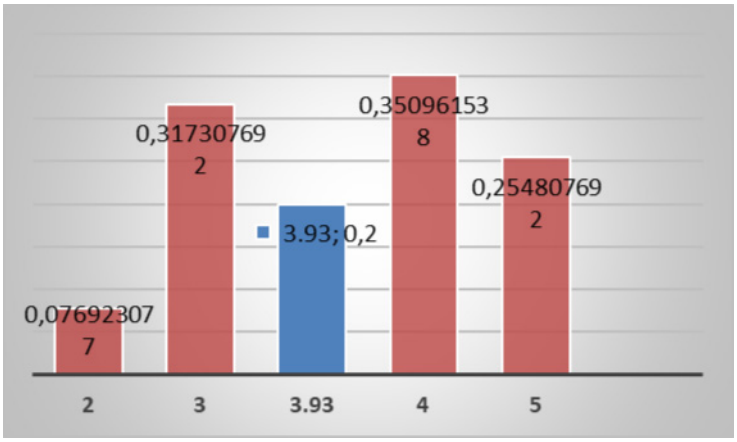

Fig. no. 1 Distribution and mean of the overall tourist satisfaction

Source: Authors' own processing

Interviews: the Stakeholder perspective

Interview 1: Marius-Catalin Campeanu, Director of the National Tourist Information and Promotion Center in Predeal

When asked about the state of local tourism in Predeal, the first respondent answered that this is a good one, registering an impressive increase in the number of tourists from 100,000 in 2009 to an estimate of 230,000 in 2018. His answer supports the statistics presented earlier in the Introduction – tourism has increased in the past few years, both at a global level, as well as at a national level.

Talking about the strengths of Predeal as a tourist destination, the respondent mentioned the natural resources and the popularity of the ski area, being in accordance with the reasons why tourists visit Predeal, as resulted from the questionnaire. However, he also referred to the resort's tourist routes and the potential to develop cycling circuits, which is intriguing considering that the questionnaire data reveal that only 11% of those that travel to Predeal do it in search of adventure. Referring to weaknesses of the town he spoke about the lack of involvement of the private sector to complete the tourism offer; the lack of tourism development strategy and definition of the unique value proposition; but also to the general disregard towards certain standards (including EU regulations) of the offered services.

Regarding the management and organization of the tourism industry in Predeal, the respondent said that there are no organizations/associations established in the private sector in Predeal and as a result, they have never had an impact on the evolution of tourism in the city. Moreover, when taking about the collaboration between the private and the public sector in the tourism field in Predeal, this was negatively classified as the "main barrier getting in the way of a faster, healthier, more strategic development of the resort".

Through his statements, the respondent supports the hypothesis of this paper that the establishment of a DMO is necessary for the sustainable and competitive development of Predeal as a tourist destination: "I believe that the only solution to create a competitive destination, at any level and in any corner of Romania is the cooperation between the public and the private sector, as well as embracing full transparency in the decision-making process. It is essential that individual interests are turned into mutual interests; that is the key to successful development".

Interview 2: Antoni Kuhnen, Owner of AVCO Consult

According to the second respondent, Predeal as a mountain resort has not taken optimal advantage of the general development the region has been enjoying, compared to other destinations from Prahova Valley or Poiana Brasov, for example.

Talking about strengths of Predeal, the respondent referred to the proximity of the ski-slopes to the main road and the good supply of snow during the winter season. However, as a weakness, the respondent argues that the winter season is too short to provide enough revenue for the resort, there's a lack of promotion and there are not enough modern leisure opportunities and entertainment.

When asked about the management and organization of Predeal, the interviewee referred to another weakness of the resort: the fact that the people working in tourism in the private sector are not trained enough to give tourists a memorable experience. Therefore, the entrepreneurs from Predeal need to take initiative and not wait for the local governance to interfere in their business. Furthermore, he believes that in order for the associations in the private sector in tourism in Predeal to become effective, there is a pressuring need for an in-depth marketing study that will indicate the nature of changes that need to be made and measures that need to be implemented. He states that everybody should be involved in the process of developing tourism in Predeal, focussed and motivated towards attracting customers. This sustains the validity of the argument made in the Literature review that local community engagement and capacity building are fundamental for further development of the tourism sector in Predeal in general, so also key for the DMO.

Another key point made in the interview is that the collaboration between the private and the public sector in Predeal, in the tourism field is vital to successful development – argument that also implies the necessity for a DMO in Predeal.

Conclusions

The majority of tourists visiting Predeal females, aged 24-39, with a job, travelling for relaxation, nature and sports. This result leads us to the conclusion that the resort is a dynamic one, mainly chosen by young people. As a result, one of the main conclusions of this study is that Predeal should focus on strengthening their position as a relaxation destination, put more emphasis on promoting its biggest assets, such as nature and sports, but also try to transform the weaknesses, such as business and nightlife, into opportunities.

Regarding the satisfaction of tourists visiting Predeal, the questionnaire data analysis clearly indicates that this is ranked very highly. However, the interviews with the stakeholders indicate that they are not satisfied neither with the activity of the associations/organization from the private sector, nor with the involvement of local administration, local people and other bodies from the private society in developing local tourism, therefore setting the framework for the creation of a DMO. The overall interpretation of the results of the research is that there is a great need for improvement of the relationship between local authorities and stakeholders, reinforcing the need of a partnership between the two in order to foster a clear vision and direction for tourism in the Predeal region, and not only.

DMO Predeal will work at the centre of local activities, having the mission to develop a competitive and sustainable tourist destination, by involving all relevant stakeholders and engaging the local community. The main purpose will be to increase awareness of Predeal as a tourist destination, to boost local economy and increase the local quality of life, great emphasis being put on implementing a sustainable development plan for tourism (OECD, 2001). As discussed in detail in the Literature review, the main objectives of the DMO will be concerned with the organization, development and promotion of Predeal as a tourist destination, ensuring the smooth communication and collaboration between the different parties in the community – namely the private sector and the public sector. This new instrument for Romania, in a true conceptual meaning, will help Predeal reposition itself as one of the most important mountain resorts in Romania.

One of the main limitations of this study is the reduced input of stakeholders, which has been limited to two interviews. For a better understanding of the issue from a stakeholder perspective, future quantitative research should be conducted, focusing on gathering the opinions of larger numbers of local stakeholders, from different areas of activity. Another weakness of the present study is that it solely focuses on domestic tourism and does not, at any point, make reference to inbound tourism. Given that statistics indicate that there is an increasing number of foreign tourists choosing Romania as a holiday destination, future research should also investigate the role of inbound tourism in the development of Predeal. (Mihai, 2017) Last, but not least, the quantitative research was conducted during the peak season for mountain resorts, which is during the winter months, and consequently the results cannot be generalized for all seasons. One must acknowledge the fact that the present research is only a pilot research, which should be taken over and continued by the local DMO: the same questionnaire should be conducted over a longer period of time and in different months of the year in order to capture KPIs.

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TOURISM COMPETITIVENESS IN EASTERN MEDITERRANEAN BASIN. LEBANON CASE

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Abstract
The paper presents a short overview on the current state of Lebanon in terms of competitiveness in tourism. There are a lot of weaknesses, as the political instability in Lebanon consist the most important reason why the number of tourists visiting the country has dramatically decreased in the past years. Several data from the Travel and Tourism Competitiveness Index have been analyzed in order to conclude where Lebanon is at, in comparison with the other countries from the Eastern Mediterranean basin.
Still, the paper proposes actions such as enforcement of environmental sustainability regulations, promoting the natural and historical resources and encouraging investments in those areas, could help stimulate the country's potential.

Keywords
Tourism competitiveness, Travel and Tourism Competitiveness Index, strategy, Eastern Mediterranean basin

JEL Classification
Z32, Z38, R58

Introduction

In 2017, the travel & tourism industry continues to be the main driver of growth, creating jobs, reducing poverty and promoting development and tolerance throughout the world. This industry contributed US$8.3 trillion to the global economy (10.4% of global GDP) and created 313 million jobs (1 in 10 jobs around the world) in 2017. (WTTC, 2018).
In 2017, the travel and tourism in Lebanon contributed around 18.4% of the country's global GDP and supported respectively 17.9%, of total employment. (WTTC, 2018). In order to improve the competitiveness of the tourism sector in Lebanon, one has to analyze all country's tourism indexes and their change over years and deduce strategies that could significantly contribute to promoting sustainable and integrated development.
To measure the overall performance of tourism sector in a destination in comparison with most countries over the world, the World Economic Forum (WEF) developed the Travel and Tourism Competitiveness index (TTCI) reports with collaboration of experts in this domain

and supported by major travel and tourism organizations such as UNWTO*, WTTC† and IATA‡.

Short review on tourism competitiveness

What is competitiveness? There are actually a number of definitions out there. The World Economic Forum, which has been measuring competitiveness among countries since 1979, defines it as "the set of institutions, policies and factors that determine the level of productivity of a country".

The overall travel and tourism competitiveness is determined and driven by the competitiveness of each of the components of the macroenvironment (economic, social and cultural, political, technological) (Bălan et al., 2009, p. 980). From a tourism perspective, the success of the industry is intertwined very specifically with the performance of energy, technology, telecommunications, agriculture, and transportation sectors (Crouch & Ritchie, 1999, p. 138). Sustainable development of tourism destinations and environmental preservation have an increasing role in the improvement of tourism competitiveness (Huybers and Bennett, 2003)

Ring-beck and Pietsh (2013) have identified 5 elements from the Tourism and travel competitiveness index that are correlated most closely with country's steady growth performance score. Affinity for T&T, Safety &Security, Environmental Sustainability, Price competitiveness, and Policy rules and regulations among 14 pillars are considered the most effective elements on tourism industry's growth. Dwyer and Kim (2003) indicate that the destination competitiveness is greatly reliant on the Core resources of a destination which includes: natural resources, cultural resources, heritage and created resources. Crouch and Richie (1999) considered that natural resources are the most valuable resources for a tourism destination. Moreover, Gooroochurn and Sugiyarto (2005) considered the following indicators: price competitiveness, human tourism, infrastructure, environment, human resources, and openness as some of the most effective indicators to classify destination according to their competitive strengths.

Literature Review. Tourism overview in Eastern Mediterranean Basin

The current part of the article concentrates on the numerical aspects of tourism with regard to the Eastern Mediterranean basin (with regard to Turkey, Israel, Lebanon, Jordan and Egypt) as well as the touristic policies in these areas. This correlation is of great importance because it can create an overall image of the functionality of these policies reflected in the number of tourist arrivals. The complexity of this particular touristic area of the Eastern Mediterranean Basin has also been increased by the political instability of the area and the fight to diminish its effects. For this reason, this chapter will concentrate on the number of tourist arrivals while taking into consideration causes of growth and decrease, as well as policies and tourism strategies that can help increase tourist numbers.

* United Nations World Tourism Organizations
† World Travel and Tourism Council
‡ International Air Transport Association

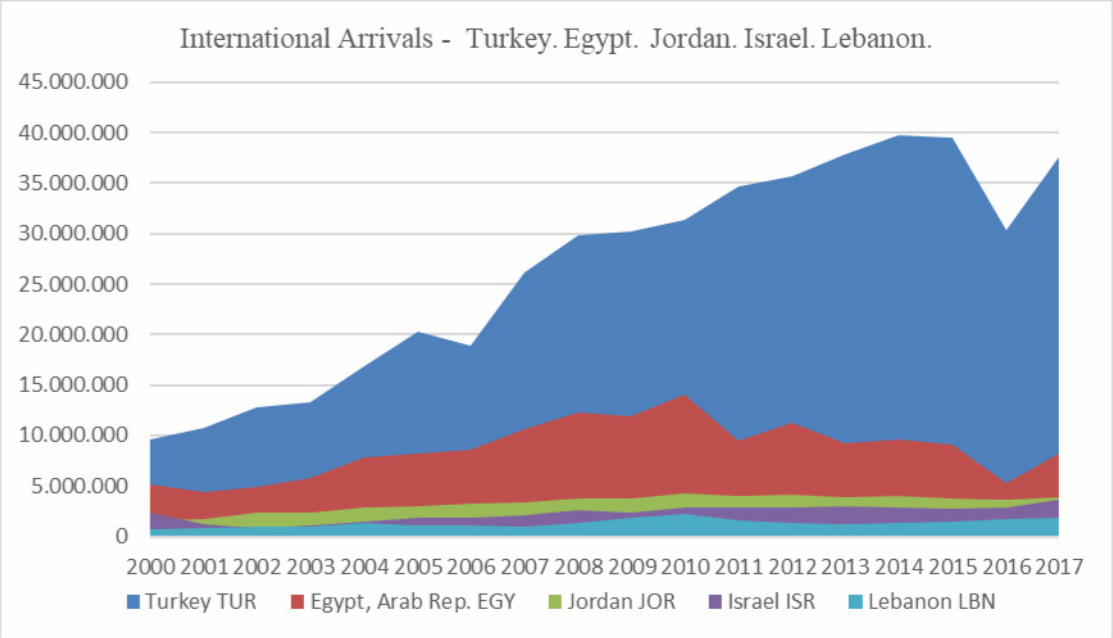

Fig. no. 1 Number of tourist arrivals influenced by political instability
Source: data.worldbank.org interpreted data for Turkey, Egypt, Jordan, Israel, Lebanon

The graphs above represent the interpretation of data taken from data.worldbank.org. The charts start with the year 2000 in order to better observe the how political instability influenced the number of tourist arrivals. Graph number one allows for the study of Turkey, while also creating a full comparison between the three countries in the current article. For better observation graph number two captures the situation of Israel and Lebanon in more depth.

Thus, by studying graph number one, in can be observed that the lows of international arrivals coincide with the increase in terror incidents in 2006 and the Turkish Coup in 2016.

In the case of Israel, tourist lows coincide with the Israel – Palestinian Conflict – Operation Defensive Shield in 2002 and the Gaza War in 2008 - 2009. By comparison, Lebanon presents the exact opposite example. Due to the heightened political stability and security the country had a record number of visitors in 2010, with a total of 2,351,081 arrivals. On the other hand, the protests influenced by the Arab Spring that followed in 2011 were immediately reflected in a decrease of tourist numbers over the next period of time. What is more, the all time high of 2010 has not been reached ever since.

Tourism is considered an important branch of the economy that needs peace to grow. At the same time, tourism that was extremely affected during the Arab Spring despite the fact that the western countries showed a political sympathy for the political ideology followed after the Arab Spring. (Butler and Suntikul, 2017)

The most affected Arab country among those analyzed is Egypt, which experienced a very turbulent period from which it has not recovered up to this day. Not surprisingly, the most affected industry was tourism which experienced a decrease from a 19% contribution to the GDP in 2007 to 11.2% in 2013. Taking into consideration the total decrease, it is estimated for Egypt to recover to its initial number of visitors only in 2025. (Saeid 2013)

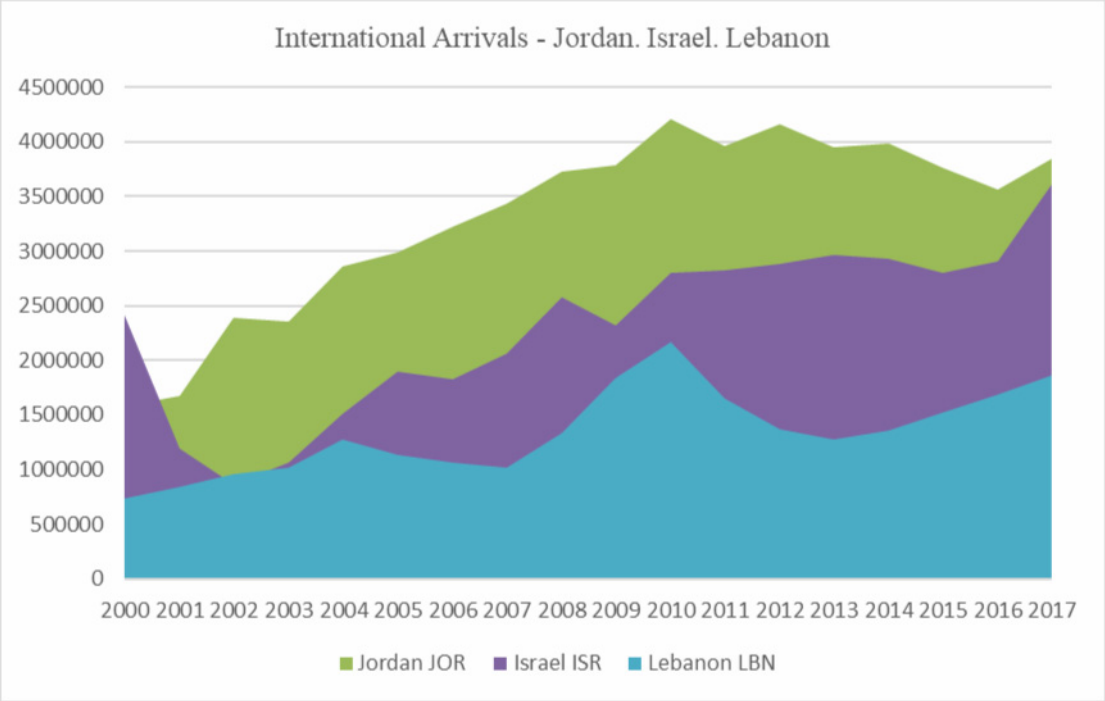

Fig. no. 2 Country comparison Jordan. Israel. Lebanon - International tourist arrivals
Source: data.worldbank.org - interpreted data for Jordan, Israel and Lebanon

The graphs above represent the interpretation of data taken from data.worldbank.org. The charts start with the year 2000 in order to better observe how political instability influenced the number of tourist arrivals. Thus, it can be observed that the lows of international arrivals coincide with the increase of the terrorist incidents in 2006 and the Turkish Coup in 2016.
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Egypt and Jordan have a very peculiar cultural heritage and are ranked in the first 64th out of 133 nations in tourism. In terms of pricing its tourism, Egypt is extremely competitive and in position number 5 amongst the nations that are major players in tourism (Alexbank, 2010). However, the political instability led to a decrease of tourists from 2010 until the present day, as can be observed in figure 1. In the same time, graph number 2 only emphasizes the same situation with regard to tourism decrease applied in the case of Jordan. Due to instability in the region caused by the Arab Spring and internal turmoil, the number of tourists visiting Jordan have dropped.
To sum up, the information given above establishes a cause-effect relation between political stability and/or instability and the popularity of a destination with regard to the number of tourists that visit it.

Tourism and travel competitiveness of Lebanon and region' countries
The table below shows the overall competitiveness index of Lebanon, Jordan, Israel, Egypt and Turkey among 139 countries based on the Travel and Tourism Competitiveness Index reports developed by World Economic Forum from 2009 till 2017. This index covers the

factors of general index of Environment, tourism policy and regulations, Business Environment and Infrastructure, Human, Cultural and Natural Resources.

Table no. 1 The Travel and Tourism Competitiveness Index – Comparative analysis

	2009		2011		2013		2015		2017	
Country/ economic index	Overall Index/ 133	Score	Overall Index/ 139	Score	Overall Index/ 140	Score	Overall Index/ 141	Score	Overall Index/ 136	Score
Lebanon	N/A	N/A	70	4.03	69	4.04	94	3.35	96	3.37
Turkey	56	4.2	50	4.37	46	4.44	44	4.08	44	4.14
Jordan	54	4.25	64	4.14	60	4.18	77	3.59	75	3.63
Egypt	64	4.09	75	3.96	85	3.88	83	3.49	74	3.64
Israel	36	4.5	46	4.41	53	4.34	72	3.66	61	4.79

Source: World Economic Forum, Travel and Tourism Competitiveness Index reports 2009-2017

Giving the above ranks, it is obvious that Lebanon is not in a good position among its competitors in terms of tourism competitiveness, whereas it ranked in last positions among those countries in 2017. Therefore, Lebanon needs to strengthen its tourism strategies to reinforce its position among its competitors.

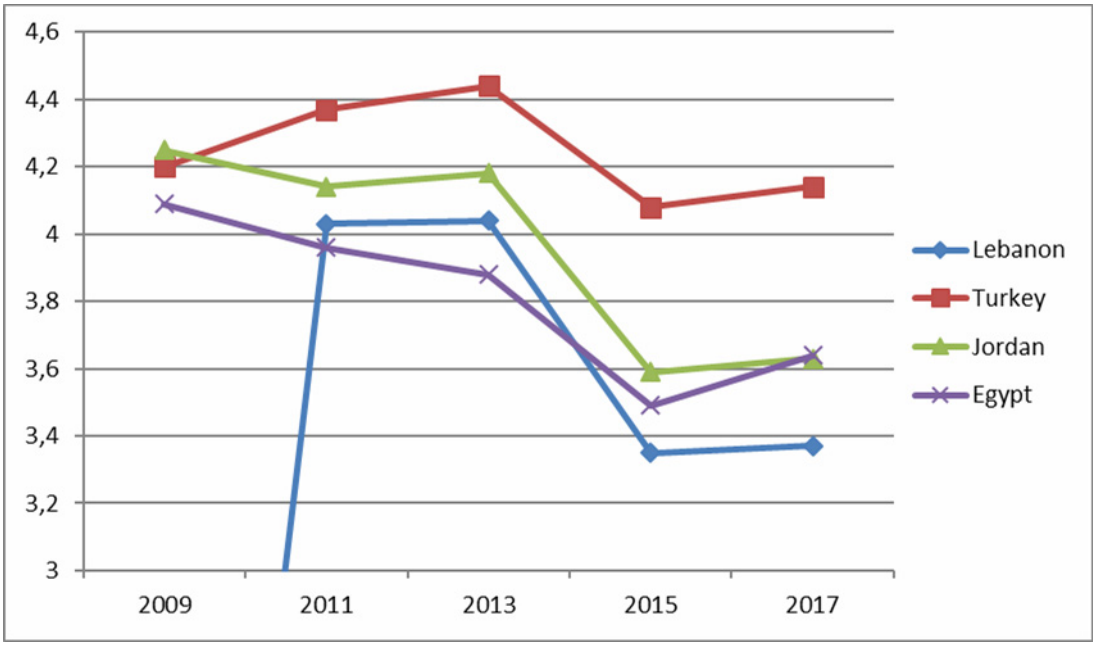

Fig. no. 3 Travel and Tourism Competitiveness Index in Eastern Mediterranean Region

Source: World Economic Forum, Travel and Tourism Competitiveness Index reports 2009-2017

Lebanon entered the Index for the first time in 2011, ranking 9th in the region and 70th overall. Based on the database from UNESCO World Heritage List, the country has a number of cultural sites, such as five World Heritage cultural sites (Anjar, Baalbek, Byblos, Qadisha Valley and the Forest of the Cedars of God, Tyre) and 10 other sites on the on the Tentative List. (UNESCO, 2018).

The World Economic Forum and its data partners (Deloitte, IATA, IUCN, UNWTO and WTTC) have introduced new indicators to the Competitiveness indexes elements and made some updates to the original 14 pillars in order to keep the Travel & Tourism Competitiveness Index methodology up to date and to respond better to policy requirements. In order to have a broader vision about the progress of tourism sector competitiveness in Lebanon, the article recorded the ranks of the main common indexes from 2011 till 2017 in the below table.

Table no. 2: The Travel and Tourism Competitiveness Indexes of Lebanon

Tourism Index/ Global rank	2011 /139	2013 /140	2015 /141	2017 /136	Differences 2017-2011
Safety & Security	123	116	130	125	-2
Price competitiveness	55	68	59	27	28
Environmental Sustainability	125	127	129	110	15
tourist service infrastructure	29	27	33	64	-35
Air Transport Infrastructure	56	67	80	81	-25
Ground and port Infrastructure	100	110	89	86	14
Prioritization of T&T	39	38	29	33	-6
Health & hygiene	48	33	39	47	-1
Natural resources	139	136	140	128	**11**
Cultural resources	98	68	84	97	**1**

Source: Compiled from the World Economic Forum's Travel and Tourism Index Reports of 2011, 2013, 2015 & 2017.

A brief view to travel & tourism competitiveness capacity of Lebanon through 2011-2017 shows an improvement of some indicators as price competitiveness (28 pts), ground and port infrastructure (14pts), natural resources (11pts) and environmental sustainability (15pts) in 2017 compared to 2011. Still, it revealed a regression in other indicators such as air transport structure (-25pts) and tourist service infrastructure (-35pts),

Basically, tourism infrastructure was well developed in the country (ranked 29th) in 2011 but this index continues to fall at 64th place in 2017. Moreover, price competitiveness index improved from 55th place in 2011 to 27th place in 2017. This index enclosed Ticket taxes and airport charges, hotel price index, purchasing power parity PPP and Fuel price levels.

However, in order to further improve Lebanon's T&T competitiveness, ground transport infrastructure should be further developed (ranked 100th in 2011 and 86th in 2017).

Security perceptions remain the biggest barrier for the T&T sector, preventing Lebanon to achieve stronger growth. Lebanon perceptions have improved but still remain poor) and should be a main concern for Lebanese government (123rd in 2011 to 125th in 2017).

In addition, environmental sustainability must be taken into consideration as it registered bad records among the other indexes during the period of study (125th in 2011 and 110th in 2017).

Conclusions

From the study above one can easily draw the conclusion that Lebanon does not hold a strong competitive position by comparison with its neighbors. Unfortunately, this is not due entirely to internal factors but also the influence of negative events happening in the region.
On the other hand, the article also shows the fact that recovery from a negative event is possible and the best example in this case is Turkey who managed to recover from the negative events of 2016 with a strong tourism strategy.
The tourism strategy of Lebanon focuses more on the development of rural areas and the preservation of historical sites. After a primary analysis of the Lebanese tourism strategy it is easy to observe that their touristic legislature is more centralized than in the case of Turkey that focuses its attention on both national and regional involvement of institutions and stakeholders. However, the Ministry of Tourism does mention the need to "institutionalize rural tourism at the level of local communities" (Lebanon Rural Tourism Strategy). However, the strategy mentioned earlier dates back from 2016. The only recent data that could be found is a press interview with Lebanon's Tourism Ministry who mentions the fact that the Ministry will do all it can to ensure tourist's safety during the visit.
Although the data might be insufficient to create a comprehensive view of the tourism strategy of Lebanon this document and the analyzed data could lead to a positive effect on debating the existing situation and having some first steps on rethinking, reanalyzing and why not, innovating the strategy that could lead to attracting more tourists.
In this context, promoting the country's natural and historical resources and encouraging investments in those areas could help stimulate the country's potential. Moreover, inducing new protected areas could be one of the strategies that contribute in strengthening Lebanon's tourism competitiveness. Regarding the Human Resources and labor market, government must support policies that promote gender equality and youth employment, and invest more in tourism education and training. In addition, educational institutions must work with industry and governments to address the sector's talent challenges.

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THE IMPORTANCE OF INTERNATIONAL EXCHANGE PROGRAMS IN STUDENTS SUCCESS MINDSET AND INTEGRATION WITHIN THE ECONOMIC-BUSINESS CONTEXT

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Abstract
This article examines the scientific and educational approach of the students practical training as well as the resulted intangible outcomes acquired on the working ground, within the contemporary business context, based on the literature review and the recent theoretical and empirical developments in terms of research, theory and practice.
The purpose of this research paper is to provide an analytical framework based on the existing literature of the actual educational and business context, within the dynamic global economic landscape and propose a complementarity relationship between the societal, entrepreneurial and leadership dimensions and the students growth mentality, in their journey towards educational and professional development.
The quantitative research methodology of this article provides an examination of an international exchange program within the tourism industry (U.S. Summer Work and Travel) aimed at students enrolled in academic educational programs. The role of education was highlighted through assessments of findings of the literature review pertaining to the importance of a success mindset in students achievements, from the cognitive perspective.
In the first part, the article focuses on theoretical and conceptual explanation of the characteristics pertaining to the personality, motivational, and self-influence of the great achievers, while in the second, as part of the research project, a 360 degrees evaluation is performed based on a survey addressed to students, related to the U.S. Summer Work and Travel - an international cultural exchange program organized by the Bureau of Educational and Cultural Affairs within the U.S. State Department.

Keywords
International exchange programs, internships, academic education, growth and success mindset, global business context, entrepreneurial leadership.

JEL Classification
I25, I26.

Introduction

The greatest force transforming the global business and economic context within our century, is without a doubt, the unstoppable trend of globalization as competition sharpens the strategy of every business, conglomerate entities capable of generating economies of scope and scale are being eroded by the emergence of smaller and more flexible networked

forms of enterprises, challenging the traditional strategic management and reshaping the dimensions of the business world.
Under the auspices of numerous factors leading to instability in all the industries the successful individual chooses to adopt an entrepreneurial mindset, employing the best knowledge of the past models and rapidly adapt it to the current conditions (Gunther McGrath and MacMillan, 2000). Today's knowledge revolution, the dynamic changes of the economic, technical and social landscape, is forcing organizations to continually adjust their practices and keep the pace with the transformations. The traditional industrial business enterprises and corporations are going through a metamorphosis, leaving behind hierarchical and top down forms of organization, in the favor of outsourcing most of their processes. The Organization for Economic Co-operation and Development (OECD) in June 2003 signaled that the historically unprecedented economic dynamism of the last two centuries and the divergence in performance across countries are the two most important features of the world we inhabit. The dynamism is the product of institutions, practices and attitudes that emerged in Western Europe over an extended period, while the divergence is the result of the uneven spread of this form of rapid growth. New world requires new approaches, and learning is the key to the strategic management of an accomplished life, from both the educational and professional career perspective. Learning becomes a continuous necessity throughout life, rethinking the way in which we do things, embracing experimentation under the state of uncertainty (Lüftenegger, Schober, Van de Schoot, Wagner, Finsterwald, Spiel, 2012). Everything around us changes at a staggering pace and by far the rate at which technology evolved had doubled in just the past couple of years essentially affecting industries, economies, markets, but most importantly, the way we do business and how we position ourselves within the global economic and social environment (Carnall, 1990).
Just as the business environment, all the other aspects of life are equally affected by the continuous state of change, particularly education plays an important role in the development of the young students as it provides them with the building blocks they need for the future, helping them decide about the career path they will be pursuing. On a global scale, it appears that an increasing importance is attributed to the developing international exchange and internships programs, considered as an ideal way to test drive possible jobs and explore different career options for the young students. The U.S. Summer Work and Travel Program is designed to reach educational goals through international cultural contacts, as well as providing an excellent working experience benefiting the students future professional career path as well as the social environment that will later on assimilate them.

Problem statement: The increasing importance of strategic vision

The nature of the environment in which we make our choices is rapidly changing and an individual such as a business, has to well know its own capabilities, the elements of its potential and weaknesses and how to acquire the resources necessary that will lead to progress and development. As such, in these times of uncertainty, strategy becomes more and more a consuming concern for everyone, from business leaders, regular citizens to students who have to continually adapt their lives to the dynamic transformations, as their aspirations grow and achieve greater complexity, their strategic choices become more significant and the context is as important as their own identity. Just as in the case of a business entity, students choosing a career path are confronted with the challenging process that requires thoughtful decision making and strategic planning. A series of determining factors have to be taken into consideration from the early stage of the process, particularly as the future depends on the choice they make early on in life (Blackwell, Trzesniewski, Dweck, 2007).
It becomes apparent the transitional aspect of our lives and the consequences that are very dependable on the importance attributed to the strategic decisions employed, as well as the

mindset of organizations and individuals (Drucker 1999). A success mindset is acquired based on continuous learning, creativity and exerting innovation, and bold initiative is the differentiating element of today's successful individuals (DeHeaven, 2008).
Breaking certain patterns of habits and trying to do things differently poses some challenges for certain people who may have difficulties with it, however just like everything else, creative thinking is a bundle of skills and techniques that our brain is able to quickly learn (Greenfield, 2013). The greatest opportunities are found in volatile environments and scarce times, and only those individuals who have cultivated a success mindset and to whom dealing with challenges seems embedded into their DNA, manage to outgrow the pressure of complexity and confusion (Krass,1999). A growth and success mindset incorporate a set of character traits and skills which enables the individual to use the uncertainty towards its benefit by identifying potential opportunities in areas where others may not think of it as being possible. Today's generation is motivated by different type of goals, from helping people within their communities, to service innovation facilitating processes and life itself; the goals should match the performance and the behavior should match the goals (Blanchard, 2003). Individuals who possess a high degree of confidence and believe in their own abilities are better equipped to overcome failure and their level of self-confidence comes from having sustainable values and knowing themselves well. Many young people nowadays choose to start their own business, hence many companies adopted jobs cutting being forced to raise up to the challenge of balancing market and moral wisdom, caused by the recent downfall of the global economy (Eamonn, 2005). How exactly do we manage to achieve this fine balance at our society level, training, educating and shaping the new generations into embracing the continuous trends of transformation and manage to stay true to the core values of the society? Research reflects that individuals who score low in *Hoffstede's uncertainty avoidance index* seem to be better equipped to handle the discontinuous changes specific to our world today. Particularly for students who have a broad mentality, change is just another word for growth and a synonym for learning to be better, which is why they are the best candidates to make a difference in their own life and that of others (O'Rourke, Haimovitz, Ballweber, Dweck, Popović, 2014). Operating in conditions of change is extremely disturbing and confusing at the same time, posing tremendous challenges to the individuals who require creative discontinuous upside-down thinking. Learning nowadays, becomes a continuous necessity throughout life, rethinking the way in which we do things and embracing experimentation under the state of uncertainty it had become essential (Handy, 1994). Nevertheless, the training component within the educational dimension of the students development, besides the transfer and the accumulation of information, it is aimed at acquiring the necessary skills and techniques that are applicable in the real life and the challenging working environment.
Graduate, professional schools, colleges and universities are increasingly introducing specialized divisions and departments to educate and train specialists and future leaders, however leadership is a more of a practical and applied topic, better learned on the job itself, especially in summer jobs, internships and exchange programs. The theoretical approach learned in school sets the base of knowledge, however valuable character traits and true professional leadership skills are gained from the real working experience, by directly interacting with colleagues, customers and mentors, celebrating little achievements and learning from making own mistakes. Teaching and educating young students and preparing them for a professional career, often involves elements of complementary disciplines such as ethics, leadership, psychology, management, economy, politics, sociology, etc., and it takes a well-educated person to understand the complex implications and real-life applicability.
All these intangible aspects of life are highly situational and contextual, better observed when exercised in real working conditions, which defines the practical dimension of the

educational process (Handy, 1994). Research showed that the students that are exposed to leadership while working, participating in seminars learning about management styles and skills, strategies and theories specific to leadership, particularly where students come in contact with the diversity and the difficulty of problem-solving, distinguishing in their own minds the advantages, as well as limitations of leadership and the special chemistry that develops between leaders and followers. The educational dimension enables students to discern and define situational variations and nature of contexts in which relationships can develop, as well as the role that mentors and supporters have in their evolution (Goleman, 2006).

Millennials as a generation, are eager to make an impact in the world and profoundly affect the society, being innovators of products, services and business models, in their pursuit for their dreams and passions, making use of their personal experience acquired in the working field and studying various academic specialties (Strauss, Howe, 2000). In the 21st century, there is a growing trend towards the transfer of knowledge aimed at enhancing the students ability to effectively acquire concrete problem-solving skills and apply ingenuous teaching methods of growth mindset induction that grab the attention of students and actively involve them in the learning process (Schroder, Moran, Donnellan, Moser, 2014).

On a global level, entrepreneurial leadership training courses are increasingly designed to target the young students and aspiring future professionals, making education a competitive advantage and a real investment, that effective organizations appreciate as being an asset, especially when practical experience may be lacking.

Research questions/Aims of the research

As the society is rapidly changing and the career span is shorter on average, the need for intelligent people in organizations is increasingly growing, it is obvious that the education systems around the world need to be redesigned and aligned with the requirements of the contemporary environment, as to motivate and build up the skills, talents, self-confidence and the student's abilities to communicate and manage in the real life. Organizations, equally need to partner with the education systems and consciously help shape up the students professional profile, resulting in an ideally equipped and capable future work force. On the same note, organizations need to foster the opportunity for students to grow while they work and develop critical thinking abilities, practical and analytical intelligence. Companies could become learning grounds for groups of mixed ages and different types personality profiles working together, outgrowing the students intrapersonal and interpersonal abilities, offering them a realistic picture of the world they are preparing to enter into. On the other hand, the academic world could adapt faster to the dynamic waves of changes and introduce tasks and case studies inspired from the business environment and assign real problems to be solved by the groups of students, conferring to the study process a professional type of purpose. Summer Work and Travel is considered to be the largest U.S. public cultural exchange program, which has experienced tremendous growth in the past 20 years and the J-1 exchange visitor programs suffered transformations as the U.S. foreign policy priorities and initiatives have changed with the time.

The main objectives of the research activities were to:

- Provide a comprehensive review of the program, while understanding how the program contributes to the overall improvement of the students, determining development of their professional career and life perspectives, ultimately influencing the local Romanian environment which assimilates them as active work force.
- Understand the reasons for students participation and the impact of the program on acquiring self confidence and esteem, towards a healthy and well-balanced mentality of hard working and success – key factors in the development of the future local romanian business entities, both in terms of cultural exchange and contribution economic vitality.

● Asses the experiences of the SWT participants in terms of their own appreciation and satisfaction with the outcome, including their overall views on personal and professional gains, as a result of their active involvement within the program. Such programs encourage students to discover, produce and evaluate knowledge, seeing the real-life applicability of the theoretical concepts learned, the students level of understanding and information absorption rate increases dramatically, so is their competence, social skills and overall capability of reasoning (Betsy, 2018).

Research methods and survey findings

The overall global trend is to embrace education as being the gateway towards a better adapted society to the transformational changes, to the point where the well-developed countries are increasingly supporting entrepreneurial and leadership specialized training and funding programs. Integrated in this article, is a quantitative research evaluation of the SWT program based on a survey conducted in 2017, addressed to 437 students that have returned from their working and traveling experience in the United States. The purpose of the survey was to reflect the benefits and outcome of the program based on the students feedback that have actively participated with in the Summer Work and Travel Program and who were willing to share their impressions, followed by an analysis of the survey answers and the drawing conclusions. The online survey of Summer Work and Travel alumni was conducted on 30th of October 2018 and the survey was closed on 20th of December, 2018. The survey was addressed to a total of 2800 of SWT participants that had just returned from the SWT program in the United States and covered topics such as their overall experience in the program, the professional aspect as well as the impact of the program on participants perspective of work, traveling culture and life. Survey data was compiled and thoroughly reviewed, amounting a total 437 alumni who had completed the survey, of which 260 females and 177 males, with an average age of 22.2 years, concluding in a comprehensive assessment of the outcome of the SWT program organized for summer of 2017.

The survey findings conclude the success of the program, it's operations and reforms, participants reporting high levels of overall satisfaction of both the program 96.4% and of personal and professional gains as a result of their involved participation. For example, 94.9% of participants consider that the experience gained during the program will help their future careers, due to the cultural exchange being their primary motivation for joining the SWT program. Cultural exchange is an important characteristic of the program, directly influencing the creation of a better work environment and a friendly climate for the local employees in the Romanian labour market, in addition to providing a better service experience for customers. The cultural exchange goals are also reflected in the students reports of making lasting friendships with peers from the United States and other nations. The majority of participants have favorable views toward the SWT program stating that they learned specific work skills, 95% of students praised the gaining of experience living on their own in the U.S and earning money for traveling, and at the completion of the program highly recommending the program to their friends. Pertaining to their level of education, the most substantial category of participants recorded were alumni from college (51.3%) and university student bachelor programs (29.3%), master students (18.8%) and doctorate students only (0.7%). Data reflects that a total of (78.7%) have enrolled in SWT for the first time, and in addition to the exchange program organized in 2017, a small fraction of students have also participated in the past in several J1 exchange visitor programs (16.5% 2nd participation and 4.8% third or more times).

When participants were asked to describe their professional experience level 46.9% responded that they have under one year of work experience, 16.7% have worked one to two years, and 8.5% of students were actively involved in the labour market (two to three years) while 19.7% did not have any prior working experience. When asked whether they

participated along with one of their friends 51.5% stated that they enrolled in the SWT program together with friends, while 45.5% participated on their own and 3% with a family member. Only 10.8% of students declared that they visited the U.S. prior to the SWT program, while a vast majority (89.2%) of the participants have seen the American land for their first time. Creating a favorable climate for the students to gain valuable work experience that would benefit their career and the societal environment that would assimilate them later on in life, is among the goals of the SWT exchange program, and the survey reflects that the majority of students agreed that the program provided and taught them specific work skills. On a scale from one to five most of the participants rated their working experience an average of 3.17, where fun was corresponding to number three and very useful, corresponding to number four.

As the types of the jobs available to exchange students enrolled within the SWT program are within the tourism industry, where the required skills are specific to hospitality and customer services, it presents a high level of dependency on seasonality (State Gov. 2019). In fact, according to the U.S. employers, there is a seasonal labour shortage and the absence of the program would have a negative impact on the smooth management of the business and a big negative impact on the ability to efficiently operate providing satisfactory customer service, affecting the revenues and the economic environment (Visa State Gov. 2019).

Our survey data indicates that the majority of participants (89.4%) consider the acquired work experience to have been: excellent (29.7%), very good (31.8%) and (27.9%) good, interacting with fellow colleagues and customers, thus contributing to and benefiting from the positive culture within the workplace and the surrounding community. Along the years, the students enrolled within the SWT program gained valuable insights about the American culture, it's people and their way of life and a better understanding about providing hospitality service or doing business. When inquired about the professional skills and abilities developed along the duration of the program, 35.2% referred to it as being excellent, 29.3% as very good, 24.7% consider it to be good, while 2.7% stated it was fair.

The knowledge attained through this type of real life working experience, has a crucial importance on the individual's evolution scale, as it further develops taking shape as valuable skills and character traits that stand at the base of the students professional identity, preparing them for the future ahead and helping them to better integrate within organizations and business environments back in their countries of origin (Alliance Exchange, 2018).

The majority of students (92.5%) chose to travel at the completion of the SWT program, visiting major cities and famous touristic attractions, making use of certain skills learned during the program and interacting with people of different nationalities making lifetime memories, as reflected in the research issued in 2017 by Eureka Facts, LLC.

Table no 1. Student's top reasons for participation in SWT program

Student's Main Reasons	Percentage
Learning about the American way of doing business	5.4%
Interacting with different cultures	15.5%
Learning specific work skills	2.0%
Traveling in the U.S.	16.4%
Earning money	3.1%
Gaining work experience for degree program	3.3%
Experience living alone in a different culture	36.0%
Improving English language skills	18.2%

Source: Eureka Facts, LLC - August 22, 2017

When asked about socializing and networking with the American people and other nations, the survey statistics reflects that a staggering 94.7% of the young students rate it with maximum importance to them. Overall, the majority (84.2%) of participants reported that they enjoyed their stay in America, having a beneficial experience while in the U.S., expressing positive opinions and good overall perceptions regarding the working environment, local culture and traditions.
Most participants (94.5%) agreed that their American experience helped improve their English language and gained better understanding of the local way of life and doing business (Guidance Directive 2013).
Nearly all the participants (96.4%) were very satisfied with the SWT Program, considering it to be a successful program, suitable to be recommended to a friend or family member, and 47.1% of students stated that they will be applying again in the future, while 44.2% said that they might be enrolling again in the SWT program.

Conclusions

As the world continues to open up and globalize, so is the connectivity and educational, cultural, economic exchange, providing multiple academic and professional opportunities to young students. The interdependency of countries and the growing consumer demands has made the education system, labour market and business environment exciting and challenging at the same time. By assessing the wide spectrum of the global systems complexity, the conclusion to be drawn is that today's business organizations and enterprises need to foster a culture in which employees feel encouraged and are motivated to contribute, attracting well-qualified labor force able to generate good performance in strategy innovation, creativity of ideas, product and portfolio management. Young students ought to embrace a growth mindset, continually learning and making extensive use of the abundance of information available to them in order to analyze the society trends and determine whether a certain initiative is appropriate for their future career, and then further decide on development plans and strategy to follow. Students may take advantage of the unveiling opportunities to increase practical learning on the working ground within the dynamic business environment, in order to benefit from the perfect mix between the theoretical concepts studied in school and its applicability in real life and achieve the most efficient learning experience.
Through international exchange programs and internships young students gain a broader perspective when working closely along experienced people and managers, observing the passion and drive which fuels them to take on the operation challenges, in such a way that students may feel well inspired by their actions and apply the discipline and thinking patterns in their own way of life. Besides creativity and innovation, the success formula relies on the basic cognitive principles and learning mechanism which implies questioning, theorizing, testing or reflecting on a problem, a dilemma to be solved, or a challenge to meet. All of these are learned in school and perfected in real life practice and keeping up with the dynamic trends and thinking ahead can help to better plan goals and strategies in order to have the ability to take advantage of the best opportunities that arises.The organizations today value people who are determined and prepared to invest time and energy to keep ahead of the game by continuously learning, they are respectful and dedicated to their work. Practicing students enrolled in exchange programs, internships should take advantage of knowing this and try their best to absorb a good volume of knowledge and practical experience as to make a relevant impression through their active involvement in the assigned operational activities.
On the home front, the local lauthorities recognize the importance of removing barriers to employment and measures to reduce skill mismatches, especially for the young population,

and consider a new strategy of welcoming foreign workforce from certain countries (Eurostat, 2019). Meanwhile the private business sector is making efforts of successfully attract employees that posess the skill-based requirements and increase their retention level by offering them extra training to determine a growth of their abilities and knowledge - essential for applying lean principles in production or implementing optimization systems within the companies and of critical importance in today's competitive market.
Besides teaching the theoretical principles and concepts, the goals of the educational system may concentrate on increasing the practical training and students involvement in workshop activities, aiming towards shaping the workforce of tomorrow, future managers, entrepreneurs and business leaders. A balanced educational system fosters an encouraging environment and develops the students potential, so that they believe that performance records are attainable in school as in career and life, enabling them to feel motivated and concentrate all their efforts and abilities into achieving greater goals.

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GREEN BUSINESS MODEL INNOVATION: ENHANCING BUSINESS PROCESSES THROUGH APPLICATION OF ARTIFICIAL INTELLIGENCE IN ORDER TO REDUCE THE ECOLOGICAL FOOTPRINT

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Abstract
Business Model Innovation today is mostly driven through software-based solutions which are used to digitize business processes, mostly leading towards a digital transformation of an enterprise. That transforms the existing business models either in incremental steps or in a radical way by creating and introducing entirely new value propositions to business concepts. Whilst entrepreneurship has the target to maximize margins, the ecological footprint often is not considered in the focus of business strategies.
The only restrictions in terms of sustainability the majority of companies comply with are those given through regulations by the government in order to be compliant under the terms of corporate social responsibility. The barriers corporations are facing in the attempt to transform their business into a green business model has several occasions, essentially it is the trepidation of financial effort to transform the existing business models into green ones. Furthermore, there is a shortage of knowledge, awareness and skills within the entire value chain of companies to implement green business models (Bisgaard, T. et al., 2012).
The approach to improve the ecological footprint of business processes is still not exhausted and explored in the industry yet. The approach to establish an eco-friendly business is still overruled by the greed for profits of the shareholders. The authors of this paper will use a descriptive research method and an inductive approach to investigate and present the contribution of artificial intelligence on the innovation of green business models and their impacts on sustainable business processes and operations.

Keywords
Green Business Model Innovation, Artificial Intelligence, Sustainability, Business Processes.

JEL Classification
M14, M21, O31

Introduction

There are a lot of discussions in public and debates of scientists dealing with the challenge of companies to create sustainable business in order to diminish the environmental pollution risks of business operations. All approaches and concepts of companies emphasize on the importance of using sustainable resources to manage the reduction of the ecological

footprint. This pertains not only to the manufacturing industry but also to other industrial sectors, the stakeholders and shareholders as sustainable business always includes the entire value chains.

While the shareholders of companies attempt to increase their profits, environmental managers focus on the compliance with current environmental regulations, customers are pushing companies to produce or sell sustainable products or services due to an increased awareness towards sustainability and in the same time are willing to pay for those higher prices (Clarke et al., 1994).

In the middle of this area of conflicts, entrepreneurs have to decide on which of those impulses they base or transform their business model upon. Still there is a common prejudice that complying with environmental stipulations or any other law usually is not resulting in a positive financial return (Osterwalder and Pigneur, 2010). Contrary the broad major opinion of entrepreneurs, transforming the business into a green business model can precede to financial, environmental and innovation results. (Bisgaard et al., 2012).

Furthermore, companies have the potential to differentiate their products or services from their competitors being more sustainable and greener than their competitors. Besides that, alternative resources for materials are sought due to increasing costs and supply risks for material that have scarce resources. (Bisgaard et al., 2012).

Additionally, to adapting the existing business model, corporations can implement new technologies such as artificial intelligence into their business operations with the target to improve the business processes and reduce the ecological footprint whilst capturing the economic value in a life-cycle perspective (Toma & Naruo, 2017).

The main concepts of the paper are green business model innovation and artificial intelligence and contains the investigation on how to improve business processes in combination of both. The term green business model innovation has so far, no established internationally acknowledged definition. Focusing on the term business model innovation, the most valid academic contributions are publications by Osterwalder, Chesbrough, Gassmann and Ries. According to Osterwalder et al. a business model depicts the structure a corporation creates, delivers and captures value (Osterwalder et al, 2014). The green approach into the business model innovation is a game-changer for the redefinition of old industries and the creation of new industries, where the cornerstones are business, technology and environment (Mandapaty and Mc Clure, 2016). The term artificial intelligence has been defined in different ways. For the purpose of that paper, artificial intelligence is defined as the skill of a digital computer or robot, that executes tasks in conjunction with human beings, with the difference of having the capability to process large volume of data, recognize patterns and learn by higher extend then humans. (Marr, 2018 and Akerkar, 2019). Organizational changes through usage of artificial intelligence is the most successful in the following areas, such as human interaction, situational analysis, support in the decision-making process and the prediction of forecasts (Bitkom and Dfki, 2017).

Research methodology

The authors used a descriptive research method to achieve their research objective. Information was gathered from numerous sources of secondary literature, mainly specialist books and articles from the domain of information technology, management and innovation or publications in the field of green strategy, focusing on green business model innovation and the challenges and approaches companies already deducted. Furthermore, an inductive approach is chosen to draw a conclusion on the effects artificial intelligence executes upon business processes inducing towards a green business model innovation.

Influence of Artificial intelligence on business processes

Elaine Rich already defined in the year 1983 a very elegant definition of artificial intelligence as "artificial intelligence is the study of how to make computers do things at which, at the moment, people are better." (Rich, 1983). Artificial intelligence developed to a great extend since then through scientific research and is gradually implemented in many business processes to support and enhance business operations. In this paper, it is solely focused on the integration of artificial intelligence into business processes of procurement, production and after sales service. The available functions of artificial intelligence are described in the following to establish an understanding for possible scenarios of dedication.

Surveillance: The strength of intelligent systems is the continuous surveillance and examination of big data. Through pattern recognition deviations or anomalies can be detected in real-time and corresponding measures can be initiated right away (Castro and New, 2016).

Recognition: By simultaneous processing of data which receive the application either of sensors or use big data of other processes, precious information could be retrieved. This is better known as data mining, using algorithms to automatically extract empiric correlations between different objects of data bases (Gentsch, 2018).

Predict: An application of artificial intelligence is not able to predict and foresee the future when initially practiced, usually those are based on findings of the past and especially on the quantity and quality of the historic data available. The competitive edge to conventional methods is the capability to process big data in minimal time and autonomously draw conclusions. Through continuous learning of big data, the prognosis improves continuously.

Interpretation: Compared to traditional data analysis methods processing mainly structured data sets, artificial intelligence enables -due to the learning aptitude and pattern recognition- the interpretation of severe classifiable unstructured data sets and signals such as pictures, videos, audio and text data (Castro and New, 2016).

Interaction: This function allows systems to be fully automatized with respect to interactions between the physical environment, with machines and humans. The use of sensors and cameras allow robots to interactively percept their environment, utilize voice and gestures in combination with extraction of big data to communicate with machines, humans or among themselves.

Given the functions of artificial intelligence, their influence on business processes in the selected divisions procurement, production and after sales service are investigated.

Procurement: The general task of procurement is to purchase goods and material in a cost-efficient and accurately timed for the further processing in the value chain of a company. Normally, the purchasing process is drained in a specified procedure with given values as delivery time, best price and others. By implementing artificial intelligence, especially the functions of interpretation and interaction, are applied and maintaining the access to the connected data bases, the artificial intelligence assigns the required products to the appropriate suppliers to request an offer. After receiving the quotes, the artificial intelligence chooses for the best one according the predefined attributes and donates the order to the supplier, informs the initiator and surveils the delivery time. With all these collected data, a supplier ranking can be generated and utilized for future tenders.

In summary, the artificial intelligence adopts most of the routine work in procurement and enables the employees to concentrate on other tasks.

Production: In the production process goods have to be produced in time, economically priced and in highest quality in order to be competitive globally. In order to reduce high costs of machine breakdowns, artificial intelligence fosters predictive maintenance applications by retrieving all the necessary data of the machine sensors and hence calculates the next maintenance date. With these data and information, the maintenance deficiencies can be diminished and protect against major damages (Bitkom and Dfki, 2017). In

production, the functions surveillance and prediction of artificial intelligence are applied, as data has to be surveilled continuously and historical data has to be evaluated to establish a correct maintenance prognosis.
After Sales Service: Furthermore, the monitoring of big facilities (for example wind power plants or oil-rigs) is time consuming and cost-intensive. The exertion of drones with cognitive abilities, for example, renders records of the relevant components and sends them to a central artificial intelligence to evaluate the data. The surveillance of the facilities thereby occurs continuously and in the same time avoids cost-intensive machine failures (BITKOM, DFKI, 2017). It also reduces the insertion of service technicians to travel to those locations which is saving travel times, that means less costs for the vendor of the machine but also at the same reduced environmental demise.
The examples above demonstrate, that the application of artificial intelligence substitutes human tasks where reasonable in a more efficient, failure-free modality. Still, the human interference in important decisions and processes on the merits of the case will not be eliminated.

Green Business Model Innovation: incentive models and life-cycle models
According the definition of Gassmann et al., business model innovation implies the modification of at least two of the four core elements - value creation, customer offering, customer segment, revenue stream - of the existing business model (Gassmann et al., 2013). Corporations are constantly striving to change their existing business models to keep up with their global competitors due to the new upcoming, mainly digital technologies. Besides, companies are increasingly confronted by the stakeholders with the requirement to actively adopt and comply with the corporate social responsibility (Schneider and Schmidpeter, 2012). The corporate social responsibility in this particular case is highlighting on the ecological perspective of sustainability only and goes beyond the legal compliance onto a proactive commitment under public surveillance by the society, customers and competitors (Schneider and Schmidpeter, 2012). That is the driver for entrepreneurs to green their business models by adapting their products, internal processes, services or change their whole value chain with the purpose to differentiate from their competitors. Especially the customers' demand for sustainable products and services as well as their disposition to pay for those requirements and the increasing costs of resources leads corporations to consider creating a green business model (Bisgaard et al, 2012).
In this paper the definition of green business model innovation is understood as an enterprise changing parts of their business model with the target to capture the economic value whilst reducing the ecological footprint in a life-cycle perspective (Bisgaard et al., 2012). The clustering of green business model innovation is categorized between incentive and life-cycle models. Incentive models are business models where the ownership of a product or its functionality is kept and paid by their owners but are incentivized by their customers for a green value chain of production, maintenance or disposal (Bisgaard et al., 2012). Life-cycle models are zooming on greening the entire value chain within a life-cycle perspective. (Bisgaard et al., 2012).
The incentive models are briefly explained in the following section.
Functional sales: In this business model the service provider inherits the supervision of a products use-phase, receiving incentives in case the product performance and durability is increased, maintenance and repair is reduced and the energy-efficiency improved whereas the ownership of the physical product persists with the provider (Erek, 2019).
Energy Saving companies (ESCO): The provider of the business model of ESCO takes over business operations or the facilities of corporations and is paid according the achievements in energy savings – it is a win-win situation for the customer who remunerates less if the

consumption is fewer and gets compensated if the savings are less than contractually agreed upon (Bisgaard et al., 2012).
Chemical Management Services (CMS): CMS is the contractual engagement of a supplier as a strategic partner (long-term) who earns profits through the management of chemicals combined with a related service by minimizing the consumption of chemicals, which leads to more sustainability in the production processes of the customer (Fora, 2010).
Design, Build, Finance, Operate: This business model is a green operating model or public-private partnership (PPP) based on a long-term contracts in order to decrease life-cycle costs, especially applied in the construction business.
The life-cycle models are summarized in the following section.
Green Supply Chain Management (GSCM): The target of GSCM is to degrade toxic materials and purchase products in the most sustainable way possible within the supply chain in order to meet the increasing demands for environmentally sustainable comportments (Fora, 2010).
Take Back Management (TBM): Producers find cost-effective ways to recover products from their customers or suppliers by taking over responsibility for waste management through take back mechanisms of the downstream use of their products (Bisgaard et al.,2012).
Cradle to cradle (C2C): In this business model, the responsibility of suppliers for their products goes beyond the usage of it, where the incentive of designing and producing products lies in the reusage of components as technical or biological nutrients. (Fora, 2010).
Industrial symbiosis (IS): This systems approach is tagging on business opportunities to leverage idle resources towards a greater extend in sustainability with the target of cost reduction within the circle of participating companies by shared utilization of resources (Lombardy and Layboum, 2012).

Enhancing Green Business Models by application of Artificial Intelligence

The enhancement of innovative green business models through the application of the functions of artificial intelligence are investigated on two exemplary, selected green business model innovations, functional sales and green supply chain management.
In functional sales the service provider is contracted with the supervision of a product and earns profits by sustainable performance during the use-phase. The functions prediction and surveillance of artificial intelligence enhance the targets of the green business model functional sales by the extraction and evaluation of big data gaining deeper and faster insights on the status quo of the products in use. Thereby, the service provider can rely on professional predictions and historical data gained by artificial intelligence and reaches both targets, firstly, increasing the overall performance of the products in the use-phase in order to be incentivized and secondly the purpose of his business model to be green.
Green supply chain management is implemented to create a green supply chain to diminish harmful components in products as well increasing the ecological footprint. By implementation of artificial intelligence into green supply chain management, the functions interpretation, interaction and surveillance complement the aims of the business model. With set parameters the artificial intelligence helps to process enormous amount of data in fewest time, recognizes certain patterns and draws conclusions autonomously. The supply chain is optimized and speeds up the response times within the different process steps through communication, analysis and prognosis in real-time.

Conclusions

Green business model innovation and artificial intelligence are complementary to achieve the purpose of creating sustainable business processes to a higher extend than conventional green business models. By implementing green business model innovation in combination

with artificial intelligence, corporations inaugurate new markets and strengthen their global competitiveness due to higher entry barriers. Furthermore, it is a reasonable approach to respond to the increasing demands of customers and other stakeholders towards sustainability. The challenge for entrepreneurs is to fully understand the diverse potential of the functions of artificial intelligence to support a green business model and learn how to implement them in their business operations.

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RELIABILITY OF SOCIAL MEDIA PLATFORMS AND ONLINE NEWS AS SOURCE OF INFORMATION FOR CONSUMERS

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Abstract

The development of the internet has changed radically the way people communicate and inform themselves. The traditional information sources and communication of news have happened with the help of classic media such as television, radio or newspaper. The development of the internet and especially the appearance of the social media, have increased the interaction between consumers, allowing them to communicate in real time, from one part of the world to another, overpassing space barriers. Moreover, in the era of social networks, the online users were allowed to be content creators, by freely posting different information, opinions and comments on the internet. In opposition to the classic media, where all published information has passed through an editorial check, in the present time when users are content creators, anyone is allowed to post anything without any further control. This situation has led to the appearance of fake news, fake reviews and other similar uncontrolled information in the public online space. In this paper there are presented the results of a research about the attitude of consumers related to fake news and online information sources. With the help of the discriminant analysis, there are presented the differences of opinion for people older and younger than forty years. The results show that fake news is a general phenomenon and that the two generations have similar perception for several situations. The main differences for the perception of consumers are related to social networks, of which the young generation is fonder of it. The people older than 40 years have stronger believes related to the improvement of legislation regarding the information posted on the internet and regarding the check of the read information.

Keywords

Social media platforms, online communication, fake news, consumer, information.

JEL Classification

M10, M31.

Introduction

Online communication and social media networks have had a crucial role on the nowadays interaction between individuals, having both advantages and disadvantages. The positive contribution of online communication refers to a higher degree of interaction, the real time communication and an easier way to overcome space barriers. The negative aspects refer mainly to the quick spreading of false or untrue information (Jang & Kim, 2018), the misuse of private data posted in the online environment (Haynes, et al., 2016) and the addictive use

of social media networks (Baccarella, et al.; 2018). The development of fake news was possible, because of the misuse of the feature of social media networks to allow each consumer to freely create, write and post any information on the internet. In opposition to classic media, where each information was checked in the editorial office of the publication, nowadays any message can now be posted with the help of social media and other content websites. What initially has been a great advantage of online users, to express their opinions and taughts with the help of the internet, has become nowadays a big disadvantage because of the fake, misleading content posted online. Several authors point out the fact that the biggest amount of fake news, is posted intentionally with the purpose of gaining financial, economic or ideological gain (Jang et al. 2018). In spite of the fact, that it is difficult to quantify the effect of fake news, the public opinion is concerned about the confusion it can create by undermining the right of consumers to be well informed (Jang & Kim, 2018). In the following paper there are analysed the perception of the consumers related to the trust in online information and the phenomenon of fake news.

Literature review

The role of Internet and social media in the communication of individuals

Social media represents a very important activity of the present consumer and it is a source of information and a media channel for following and spreading latest news and trends worldwide (Kang, Lee, 2017). Over the past decade, social media has registered a significant increase with estimates of more than 32% of the global population using social media platforms in 2016 (Emarketer, 2016). It is expected that the number of worldwide users to reach a monthly number of more than 3.02 billion active social media users in 2021 (Statista, 2018). Facebook is the first social network, which had more than 1 billion monthly active users at the beginning of the year 2017 (Chaffey, 2019).

Social media has undeniably transformed the way people communicate and it has created new opportunities for individuals and brands. Social media allows a higher interactivity between users and besides, they can generate content and develop their online behavior (Szolnokia et al., 2018; Pelau & Acatrinei, 2019). The users can express an opinion about the news and information posted on social media by liking, sharing or commenting on them. These number of likes, shares, and comments received by a post, are used as a tool for measuring the engagement of users (Kumar et al., 2018). This information are useful for companies and advertisers for improving their communication with the customers, by having an impact on the online presence of companies, their marketing activity, product development and other consumer oriented activities (Scheiner, et al., 2016). The major changes brought by social media platforms are related to a direct communication between companies and their target audiences by developing a more personal interaction and because of the fact that messages can be sent in real time. The disadvantage of these developments is the fact that not only consumer communication, but also negative news is spread very quickly. The change in communication generated by social media has modified the way users search and trust the information they encounter on these platforms. Moreover, the content posted by different entities can be misleading, therefore users must pay attention and trust what they read only after double checking the information.

The fake news phenomenon

It has been proven that fake news generates a complex impact and implications on public matters (Allcott & Gentzkow, 2017), being a widespread phenomenon of the digital information age. Nowadays, the fake news phenomenon refers to the online publication of intentionally or knowingly false information (Klein & Wueller, 2017). Fake news is generated by people, “fakesters”, who create an article with fake content often injected to an original real and trusted news content (Gravanis, et al., 2019). The term “fake news” has gained popularity especially after the 2016 US election and it was even voted as the “word

of the year" by Collins Language Publications, as its usage increased by 365% since 2016 (Hunt, 2017).
While the concept isn't new – false information and mistruths have been circulating for as long as stories have been told – smartphones, the internet and social media have given it a new lease of life and a new high-speed distribution mechanism. Modern technology and digital communication enable any news to spread like wildfire, from one consumer to another, before anyone's has analyzed its accuracy. The rapid distribution of fake news is due to the widespread use of Social Media which offer a proper ground for immediate sharing and circulating news with the users having no means of quality checking over the shared content (Gravanis et al., 2019). According to Nielsen & Cherubini (2016), more news organizations use social media platforms for editorial content and as well for evaluations of journalists' performance. Knobloch-Westerwick et al. (2005) demonstrated that people select specific online news article more often if there are explicit recommendations.

Research methodology
The conducted quantitative research aims to determine if age has a significant impact on the spreading degree of fake news and on the perception of social media platforms. In this perspective, throughout December 2018- January 2019, a multiple topic survey has been completed by 252 individuals, out of which 161 with ages younger than 40 years (defined as group G1) and 91 with ages older than 40 years (defined as group G2). The sample includes 132 women and 120 men, all of them having residency in the urban areas. Moreover, the survey has tested 23 items related to the new means of communication, social media and fake news. The respondents had to evaluate the included items based on a 7-points Likert scale.
The reliability of the data is given by the Cronbach's Alpha=0.718 for the dataset related to fake news. Furthermore, with the help of the discriminant analysis we have tested the different perception of individuals regarding the surveyed topics depending on their age.

Results and discussion
The results of our survey show that there are different perceptions regarding the evaluated items depending on the age group of the respondents. From the 23 analysed items, 8 present significant differences having $p<0.10$, while 18 have registered similar perceptions in both age intervals. As can be observed in table no. 1, the 8 items which have generated different evaluations among the two age groups are related to the understanding degree of social media platforms as information and communication sources, the trust associated with the online encountered information and the perception of fake news and the risks it implies.
The item which points out the highest difference between the two analysed age intervals refers to the evaluation of social media as a platform which allows individuals to access content and information based on their personal interests ($F=22.402$, $p=0.000$). Individuals younger than 40 years seem to better understand the characteristics associated with the new means of communication, especially with social media platforms, as well as the possibilities and opportunities these tools offer ($M_{G1}=4.86$). On the other hand, respondents older than 40 years have a higher reticence regarding social media as source of information and personalized content ($M_{G2}=3.86$). This affirmation is also supported by three other items. The perception of Facebook as a great way to interact with other people is more widespread among people younger than 40 years ($F=14.788$, $p=0.000$, $M_{G1}=4.81$) in comparison to individuals older than 40 years ($M_{G2}=3.90$). Moreover, younger respondents have registered a higher acceptance of social platforms as important sources of information ($F=10.235$, $p=0.002$, $M_{G1}=5.11$) and perceive online groups or communities as a great way to gather information of interest ($F=7.803$, $p=0.006$, $M_{G1}=4.72$).

Table no. 1 Discriminant analysis values based on grouping variable age

Item	Mean G1	Mean G2	SD G1	SD G2	F (1,250)	p
The information and content available on social networks correspond to your personal interests	4.86	3.86	1.50	1.79	22.402	.000
Social platforms, like Facebook, are a great way to interact with other people	4.81	3.90	1.70	1.98	14.788	.000
Social platforms are an important source of information regarding events and trending topics	5.11	4.42	1.55	1.79	10.235	.002
Participating in groups/ communities on social networks represents a great way to access information of interest	4.72	4.07	1.73	1.83	7.803	.006
I trust all the information I read and do not check if these are true or not	2.02	2.41	1.31	1.73	4.091	.044
I trust the information posted on Facebook, Twitter, or Instagram	3.36	2.93	1.63	1.64	4.038	.046
I believe that the legislation regarding the publishing of false information (fake news) should be improved	5.91	6.27	1.43	1.28	3.970	.047
I often check the truth of the information read on social media	4.94	4.56	1.57	2.05	2.761	.098
Most of the content and information published on social networks presents a high level of trust	3.26	3.01	1.46	1.56	1.689	.195
I do not trust websites that in the past have posted false information	5.81	5.47	2.24	1.75	1.556	.213
I tend to read stories and articles with sensational titles, such as Breaking News	3.47	3.81	2.01	2.13	1.532	.217
I'm bothered by the existence of articles which include untrue information	5.89	6.12	1.51	1.45	1.339	.248
Social networks are a tool for disseminating fake news	5.31	5.09	1.39	1.60	1.271	.261
On the Internet, I only read news posted on some renowned sites	4.78	4.54	1.71	1.93	1.032	.311
I can distinguish real information from fake ones (fake news)	5.01	4.82	1.33	1.67	1.018	.314
Blogs, publications and online newspapers are an excellent source of information and present a high level of trust	4.32	4.10	1.55	1.73	1.000	.318
I would be willing to pay in order to have access to real information	3.62	3.83	1.90	2.15	.629	.428
I often read articles which include false information (fake news)	4.21	4.06	1.74	1.81	.427	.514
Social platforms are used to manipulate the public opinion	5.00	4.87	1.49	1.66	.386	.535
Often, I believe certain information, which turn out to be untrue	3.16	3.29	1.66	1.70	.343	.559
I often check the truth of the information read on the internet	4.77	4.70	1.52	1.80	.097	.755
I would be willing to pay a fee for the removal of false information from social networks	3.26	3.34	1.97	1.98	.094	.759
I often check the truth of the information read in the written press	4.31	4.36	1.75	1.82	.039	.844

Observation: G1 are people younger than 40 years; G2 are people older than 40 years
Source: Own research results

The interpretation of the registered results referring to the trust related to online information or news and the checking of the online encountered content emphasises that younger people are more reticent when reading online articles or news stories (F=4.091, p=0.044,

M_{G1}=2.02) and have a higher tendency of checking the online available facts (F=2.761, p=0.098, M_{G1}=4.94), in comparison to individuals older than 40 years (M_{G1}=2.41). In spite of the differences, both generations had an under-average value for this item, so they don't trust all the information they read. The same is valid for the information posted on social media networks (F=4.038, p=0.046), where both generations have an under-average evaluation. It must be mentioned that the young generation (M_{G1}=3.36) rather believes the posts on social media networks in comparison to people older than 40 years (M_{G2}=2.93). Both generations consider that the legislation for combating the fake news should be improved, having an over average value for this item, but there a significantly higher believe in this sense, for the people older than 40 years (F=3.970, p=0.047, M_{G1}=5.91, M_{G2}=6.27).
Both generations have an under average value for the affirmation related to the trust in the information posted on social media networks (F=1.689, p=0.195>0.10, M_{G1}=3.26, M_{G2}=3.01), and the young generations affirms that they check the truth of the existing posts (F=2.761, p=0.098>0.10, M_{G1}=4.94, M_{G2}=4.56). Both generations affirms that they do not trust sites, that have posted fake news in the past ((F=1.556, p=0.213>0.10, M_{G1}=5.81, M_{G2}=5.47) and that they rely mainly on information read on renowned sites (F=1.032, p=0.311>0.10, M_{G1}=4.78, M_{G2}=4.54). All respondents state that they do have the ability to distinguish real information from fake news (F=1.018, p=0.314>0.10, M_{G1}=5.01, M_{G2}=4.82) and they seldom believe in information, which happens to be untrue (F=0.343, p=0.559>0.10, M_{G1}=3.16, M_{G2}=3.29). Both groups have an average estimation of the frequency of getting in touch with fake news (F=0.427, p=0.514>0.10, M_{G1}=4.21, M_{G2}=4.06).
Referring to the similar perception of the evaluated items, there can be observed that individuals belonging to both age intervals would be willing to pay in order to remove fake information from the virtual environment (F=0.629, p=0.428>0.10, M_{G1}=3.62, M_{G2}=3.83) and have online access to real facts and data. Moreover, the members of both age categories are convinced that social media platforms facilitate the spreading of fake news (F=1.271, p=0.261, M_{G1}=5.31, M_{G2}=5.09) and have expressed their disappointment regarding the existence of false information (F=1.339, p=0.248, M_{G1}=5.89, M_{G2}=6.12).

Conclusions

Social media has become part of our daily routine both at personal level as well as in our professional activities. The developed tools offer users the possibility of sharing, commenting or co-creating content and of interacting with each other. On the other hand, companies use social media platforms to better integrate their marketing and communication strategies. Due to its constantly growing popularity, social media has attracted the attention of researchers and specialists, who point out that besides the positive aspects of these new means of communication, there are also risks associated with the use of online platforms (Tantau et al., 2018).
In this context, the conducted study has been carried out with the objective of analysing if individuals' perception regarding social media and fake news depends on age. In terms of the perception and awareness related to the existence of fake news, the generated results emphasise that there are no significant differences between the two defined age groups. Moreover, individuals belonging to both age intervals have expressed their willingness to pay for tools which target the removal of fake news.
On the other hand, the results of our survey show that younger people are more aware of the functionalities and facilities of social media platforms. Moreover, individuals younger than 40 years have a stronger sense regarding the risks associated with online platforms and declare having a lower level of trust in information accessed online in comparison to people older than 40, who have a lower tendency of checking the online encountered content.

Previous researches have shown that demographic criteria like age, gender and education level can influence the spreading degree of fake news (Tantau et al., 2018; Pop, Ene 2019). The results of researches referring to social media and fake news probably depend on the debated topic and on the environment in which these have been carried out. Moreover, in this survey, the direct affirmation has been measured, in comparison to other studies, where the reaction of the consumers has been evaluated. To sum up, the conducted survey has revealed perception differences between individuals younger than 40 years and those belonging to the plus 40 years age group in terms of their perception regarding social media as an important information source, the trust level associated with the online content and the awareness related to social media functionalities and instruments.
In order to better understand the impact of social media on social, economic or political events and the acceptance degree of these new means of communication among individuals, further researches need to be carried out.

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EYE TRACKING STUDY REGARDING THE PERCEPTION OF AI-BASED SERVICE ROBOTS

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Abstract

Neuromarketing is a relatively new topic and plays an important role nowadays in marketing and consumer research. Especially in the business environment, companies thrive to better understand the attitudes, the feelings and the involuntary reactions of their future customers. In such cases, it is very useful for them to take into consideration the use of the neuromarketing tools as research methods. This paper presents the results of an eye-tracking experiment which analyses the consumer's reactions towards home service robots and their appearance. A picture collage containing four types of service robots with more or less human-like characteristics was presented to the subjects. The results of the eye-tracking experiment show that the consumers are not yet prepared to accept robots with an increased level of anthropomorphic appearance. The key performance indicators show that the robot with the least human-like characteristics was the first one to be noticed, while the robot with the largest display has been studied for the longest time. Furthermore, most consumers have been curious about the various tasks done by each robot and have watched their descriptions for a relatively long period of time.

Keywords

Neuromarketing, artificial intelligence, robots, eye-tracking, consumer behavior.

JEL Classification

M10, M31

Introduction

Nowadays, the robots we used to see in movies are no longer just a scientifically fantastic image that cannot be reached, but a reality that is present in the consumer's everyday life. Moreover, home service robots have become even more popular, being frequently used by those willing to accept help on their everyday activities from a small machine empowered with artificial intelligence.

The scientific approach of this paper is to highlight some punctual aspects of a neuromarketing research using an eye-tracking tool in order to determine the reaction of the consumers towards service-robots. Although both artificial intelligence and neuromarketing are relatively new topics, they have important implications on the everyday life of consumers. First of all, it is important to determine the reactions of the consumers towards various types of service robots, as this will have a contribution to the esthetic development of the artificial intelligence machines, with the purpose of making them more user friendly and easier to be trusted. Secondly, the use of eye-tracking will help us determine the

unconscious reaction of the consumers towards the service robots, which brings along a great value to this experiment.

Literature review

The scope of neuromarketing research and technology is to optimize marketing methods, to influence the purchasing decisions of potential customers and to create products which are suitable for them. According to Fugate (2007), emotions can influence the economic decisions, by having a role in attracting the people's attention and by motivating them to focus on a certain product (Fugate, 2007).

Neuromarketing provides two kinds of information to marketing studies: new insights about the consumers' unconscious behavior and the validation of the traditional consumer knowledge with neuroscience techniques (García-Madariaga, 2018). Neuromarketing is a combination of marketing and analysis methods of the brain. This area uses investigative devices such as: EEG equipment, MEG and fMRI, Eye-Tracking, facial recognition, which test how the brain responds to various stimuli. Using neuroimaging techniques, researchers can study brain activity "in vivo" in response to specific stimuli and correlate each stimulus to the triggered response. In more understandable language, these new marketing tools could be used to convert the advertising messages into a language that stimulate different parts of the brain, motivates buying decisions and guides consumers to prefer one product over another (Zurawicki, 2010).

Consumers respond in different ways to stimuli and neuromarketing can help producers to improve the quality of the brand, the product or the advertising. The point-of-sale behavior has been studied for decades with the aim of finding new ways to improve product development, advertising campaigns or product and brand positioning (Hernández-Fernández, 2018). By means of neuromarketing, marketing communication efficiency and effectiveness can be measured. These are: emotional engagement, memory retention, purchase intention, novelty, awareness and attention. Consumers make decisions based on their emotions (Vlăsceanu, 2014).

Neuromarketing is an interdisciplinary field at the border between neuroscience and economics and aims to build a new model for the decision-making process in an economic context. Neuroscientists (most of whom are neurologists or psychologists) have concerns about the physiology and functionality of the brain itself, while economists are more interested in interpreting these responses through economic concepts and the applicability of results. Many marketing specialists have guessed in the past that brain imaging has a neurological explanation. Those who work in marketing should assess the level of oxytocin confidence in products. This will help marketers to analyse whether the level of confidence should be achieved or not. Neuromarketing tools can add value to marketing, based on their cost-utility ratio and by their ability to give an insight in hidden consumer information that cannot be obtained by other marketing research methods (Meyerding, 2018). Neuromarketing techniques can be used for several business purpose, with social and economic impact.

In spite of the great contribution eye-tracking systems and neuromarketing have for the marketing research, there are still ethical issues regarding the intrusion in the personal life of consumers. The discussion is, if it is ethical to "read minds", even if it is done for good purpose. Neuro-ethics aims to solve the problems regarding the manipulation of the human brain. The ethical development of Neuromarketing includes the protection of subjects, the responsibility of business and the accurate presentation and information for the public in this area. In academic and medical research centers, subjects that wish to volunteer for brain imaging research are protected by the Institutional Review Board Guidelines. In private companies it is possible that these topics do not exist. A neuromarketing-neuroscience initiative is to develop a code for the protection of people.

The Eye Tracking is a neuromarketing instrument that has many applications, being able to deliver value to the researchers, by studying the impression some products make on consumers. Moreover, the device can be used to provide data about human-computer interactions, in order to rate to which extent computers are able to satisfy human needs. This field of study is commonly used in the gaming industry, as it brings advantages to designers and developers who need to assess and measure the visual attention or reactions during games. The eye tracking analysis helps by finding ways in which the overall gaming experience can be improved (Farnsworth, 2017). Other application fields of this instrument include advertising, package design, purchasing behavior analysis, website testing and so on.

The Eye Tracking is a tool which can measure the point of gaze and register the movement of the eyes. The collected data is used to generate key performance indicators. The dilatation and movement of the pupils are being registered and classified according to specific areas of interest. The instrument not only registers every unconscious move of the pupils and every fixation, but it is also able to measure the exact times a certain point was fixed, including the number of the revisits. The true value of an eye tracking analysis lies into the fact that the reflexes which are being measured are unconscious, showing uncontrolled reactions to various stimuli which are being carefully selected (Rosca, 2017). The aim to of this instrument is to determine which stimuli are able to activate the attention of the subjects and which are unconsciously being ignored or overlooked.

Research methodology

The analysis of the results has been made based on the Key Performance Indicators generated by the Eye Tracking device. This eye tracking experiment aims to analyze the unconscious responses to four different artificial intelligence forms. For this, a photo collage has been created, featuring four types of robots. The role of this collage is to determine the willingness and tendency of people to favor or reject the anthropomorphic side of robots by having to judge them solely by their appearance. The collage was displayed for 10 seconds. Out of the 19 participants, 17 were female and 2 were male and the age range was between 23 and 33 years old.

The collage used in this research describes four types of home assistants. The description of the eight selected areas of interest can be found in Table 1. When selecting the AOI zones, the areas with text were separated from the corresponding robot.

Table no. 1 Areas of Interest

Variable	Description of variable
AOI 001	Home Service Robot
AOI 002	Hotel Service Robot
AOI 003	Restaurant Service Robot
AOI 004	Greeting Service Robot
AOI 005	Home Service Text
AOI 006	Hotel Service Text
AOI 007	Restaurant Service Text
AOI 008	Greeting Service Text

Source: Own Determination of Variables

The first one is a home service robot with average height, looking only remotely as a human through details like little and fix hands and a head which shows an image of a happy face and a tablet through which it can be programmed. The second is a hotel service robot with no anthropomorphic details which can be also programmed from an incorporated tablet. The

third one is a restaurant service robot with a higher level of human-like characteristics: from the appropriate height to a human-like body including functional hands which can carry products and a head with a desktop which simulates certain face expressions. The fourth and last one is a greeting service robot equipped with the same anthropomorphic details like the one before, only that he has also a big LCD screen which makes him suitable for presentations.

Results and discussion

The main key performance indicators with the results of the eye tracking experiment are presented in table no.2. The first KPI is the Sequence which shows the order in which the areas of interest were gazed, in which number 1 was the first to be looked at and number 8 the last. This parameter is usually correlated to the next one, the Entry Time, which shows the exact millisecond in which an element was first observed by subjects. On average, the respondents first looked at the AOI002 first, with an entry time of 793.2 milliseconds. This means that the majority of subjects first observed the hotel service robot. The next AOI to be noticed was the home service robot, the AOI001, in the 1350.1 millisecond. After that, the subjects analyzed on average the text under the Home Service robot (AOI005) in the 1356.7 milliseconds, then the text under the Hotel Service robot (AOI006) in the 1435.0 milliseconds. This means that at the moment when the picture appeared, the majority of the respondents had the tendency to analyze the first two robots, which are surprisingly the ones with very low anthropomorphized designs.

Table no. 2 Key Performance Indicators

Variable	Sequence	Entry time (ms)	Average fixation (ms)	First Fixation (ms)	Dwell time (ms)	Dwell time (%)	Hit ratio (%)	Revisitors
AOI 001	2	1350.1	239.2	201.6	1284.9	12.9%	100%	19/20
AOI 002	1	**793.2**	233.9	233.3	**1413.2**	**14.1%**	100%	**20/20**
AOI 003	5	2536.6	212.0	200.0	994.9	10.0%	100%	17/20
AOI 004	9	4174.8	**259.1**	**266.6**	1024.9	10.3%	100%	**11/20**
AOI 005	3	1356.7	385.2	391.6	878.2	8.8%	100%	14/20
AOI 006	4	1435.0	330.9	313.3	929.9	9.3%	100%	16/20
AOI 007	7	3219.8	360.2	350.0	693.3	6.9%	**95%**	9/19
AOI 008	8	4109.7	404.1	438.3	671.6	6.7%	**90%**	4/18

Source: Own Research

The next parameter is the average fixation which shows the average time of the fixations of a particular AOI and may be presented in milliseconds or percentages, related to the total number of fixations. The analysis of the results of this parameter show that the AOI008 has been fixed for the largest uninterrupted time, for 404.1miliseconds, while the AOI003 had the smallest value, 212.0 milliseconds. That means that the „Greeting Service" text under the last robot has attracted the attention of the subjects for larger periods of time, in which they studied it in detail. On the second place is the AOI005, the text under the „Home Service" robot, with an average fixation of 385.2 milliseconds. Out of the four robots, the AOI004, the Greeting Service Robot was studied for the longest uninterrupted time, for 259.1 milliseconds. On the second place was the AOI001, the home service robot, with an average fixation of 239.2 milliseconds, then the Hotel Service Robot (AOI002) with 233.9 milliseconds and on the last place, the AOI003, the Restaurant Service Robot, with an average fixation 212.0 milliseconds. Although the highly anthropomorphized greeting

service robot was observed later than the other ones, he has attracted the attention of the subjects for the highest uninterrupted time period.
The First Fixation indicator shows the time it took for a specific element to be firstly analyzed. Out of the four robots, the subjects analyzed the AOI004 (Greeting Service Robot) for an average of 266.6 milliseconds, which is the highest value compared to the other areas of interest. This means, that the moment the subjects observed the Greeting Service Robot for the first time, they spent the most time analyzing it, before moving their point of gaze to another element, which demonstrates the curiosity towards anthropomorphized designs. The hotel service robot, AOI002, comes on the second place, with a first fixation of 233.3 milliseconds on average. The analysis of the texts written under each robot took longer, which is why the values are higher for AOI005 to AOI008. The text to be analyzed the longest was AOI008 (for 404.1 milliseconds), then AOI005 (for 391.6 milliseconds), then AOI007 (for 350.0 milliseconds) and AOI006 (for 313.3 milliseconds).
The Dwell Time Indicator shows how much time a particular point was analyzed in total, being the sum of all the individual fixations on a certain point. This indicator is being expressed both in milliseconds and in percentages. The analysis of this parameter shows that the AOI002 (the Hotel Service Robot) was analyzed the most, for exactly 1413.2 milliseconds out of the 10 seconds time, corresponding to 14.1% of the total time. On the second place, 1284.9 milliseconds were allocated to AOI001, the Home Service Robot, meaning 12.9% of the total time. The Greeting Service robot finds itself on the third place, with 10.3%, 1024.9 milliseconds and the Restaurant Service robot was analyzed for the least time, for only 994.9 milliseconds (10.0%). These results should be interpreted taking into account the fact that the fixations were interrupted when the subjects have looked at other elements and then recalculated when their eyes have returned to the analyzed area of interest. The results of this parameter show that the AOI001 and AOI002 attracted the most attention of the subjects in total. Even if the moments in which they were analyzed were interrupted, the eyes of the respondents returned on these areas of interest with the unconscious will to gather more data or look for more details. This indicator shows, that the two robots with little to no anthropomorphic designs were the ones which focused the most attention of the subjects, while the ones with highly anthropomorphized forms were not watched with the same interest.
The Hit Ratio shows the number of subjects who have gazed at least once at an area of interest and the Revisits include the number of respondents who have watched an area of interest, then got distracted by another AOI and then came back to the first AOI. Interesting is that not all people looked at all AOIs. For example, only 95% of the subjects read the „Restaurant Service" text and only 90% read the „Greeting Service" text. The number of revisits is also interesting. AOI002 (the Hotel Service robot) is the only element who was observed and revisited by all 20 subjects. The AOI001 was also observed by all subjects, but only 19 out of 20 chose to come back and take another look at it, while for AOI003 (Restaurant Service Robot) only 17 people came to revisit. On the last place is AOI004, which was analysed by all subjects, but only revisited by 11 of them. This is a very low value for this indicator and shows the lack of interest for this specific element, as only half of people felt like they want or need to look at this robot more than once. These results are surprising, as usually the robots with anthropomorphic appearance are able to attract more interest, curiosity or even intrigue and therefore are usually being analysed more than the robots with basic designs. However, in this case, the first two robots have captured most of the attention of the subjects.

Conclusions

The present study explores the way in which different forms of artificial intelligence are perceived by consumers. A contribution to the topic regarding the tendency for

anthropomorphic systems is brought by this work, as from the analysis of the collage results that consumers have more are more interest in a normal robot with basic designs compared to the robots with highly human-like appearance, which can prove greater independence (Pelau & Ene, 2018). According to the results of this study, robots with human-like designs are not yet preferred by society.

Smart devices have become a big part of the everyday life. Therefore, the analysis of the impact of artificial intelligence forms on the consumer's unconscious perceptions is more relevant than ever, as people use applications daily for most activities they perform. As technology has completely transformed the business environment and the ways that companies operate, it is crucial to analyse if the automations and the general use of robots brings a relevant added value to the business.

This study offers an overview on the way in which technological advances are received with open arms or restraint by society. Since the subjects are between 23 and 32 years old, the results may be categorized as optimistic, as young people have generally a higher acceptance to technology. Even so, the results show that the robots which look more independent are currently considered less popular than the basic ones.

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STUDY ON SMEs INTEREST IN ENERGY EFFICIENCY IN GERMANY

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Abstract
The aim of this study was to confirm the hypothesis that the exemption from the legal obligation leads companies to deal with the issue of energy efficiency. The study identified economic sectors with a significant interest in energy efficiency and their regional affiliation in an upstream literature review. In a further step companies from these economic sectors were questioned by telephone. In total, 2,000 companies were called by phone and 1,433 were reached. Of these companies, 178 took part in the survey. Based on our findings, we found that the hypothesis was at least partially confirmed.

Keywords
Energy efficiency, Energy audit, SMEs, Public authorities

JEL Classification
K23, K32, L88, L97, L98, P18, Q01, Q04, Q48

Introduction

In recent years, several legislative acts have been adopted at the European level, with measures and arrangements for increasing energy efficiency. The Energy Efficiency Directive (EED) was adopted in 2012 as an essential part of the European Union energy policy (European Parliament and Council, 2012).
The German act on Energy Services and Further Energy Efficiency Measures (EDL-G) was adapted in 2015 as part of the implementation of EED (Bundestag, 2015). The EDL-G obliges many German companies to conduct an energy audit in accordance with DIN EN 16247-1. All non-SMEs are affected by this legal obligation (Bundesministerium für Wirtschaft und Ausfuhrkontrolle BAFA, 2019). These companies can be divided into two main groups. Enterprises that use the size-dependent values (Group 1) in Table 1 are considered non-SMEs.

Table no. 1 Non-SME criteria

employees	turnover	balance sheet total
≥ 250 or	≥ 50 Mio. Euro or	≥ 43 Mio. Euro

In addition, companies (Group 2) are considered non-SME even if at least 25% of their capital or voting rights are owned, directly or indirectly, by one or more public bodies or bodies governed by public law and controlled individually or jointly by them.

Previous studies have shown that energy consulting is an important tool to reduce information deficits and to identify potential savings and measures to improve the company's energy efficiency. However, these studies have also shown that regulatory interventions reduce the motivation of companies (Group 1) to invest in energy efficiency measures and that public sector enterprises (Group 2) do not fulfill their intended role model function. Most companies apparently lack the incentive to invest in energy efficiency measures from an angle other than profitability. It is obviously not a competitive advantage or an advantage for the majority of companies to improve the carbon footprint and adopt sustainable production techniques. (Kurth *et al.*, 2018; Kurth, Budz and Verjel, 2017).
On the other hand, there are companies that are classified as SMEs. Those enterprises (SMEs) play a key role in the European economy. They are an important source of entrepreneurial skills, innovation and employment. There are around 23 million SMEs in the 28-member states of the enlarged European Union, representing approximately 75 million jobs and 99% of the company's stock (European Commission, 2015; European Commission, 2006).
In order to significantly reduce the energy and climate policy goals of the Federal Republic of Germany, in particular the primary energy consumption and the emission of greenhouse gases, increasing the energy efficiency in small and medium-sized enterprises can make an important contribution (Bundesministerium für Wirtschaft und Energie BMWi, 2017). However, these SMEs are exempted from the legal obligation and do not have to subject themselves to any regulatory consideration of their energy efficiency (Bundestag, 2015).
With this study, the author wants to confirm the self-constructed hypothesis that the exemption from the statutory obligation to conduct energy audits has the effect that organizations are dealing with the issue of energy efficiency. The author believes that companies are more likely to be voluntarily motivated to be more energy-efficient, and that the energy analysis of specific business areas is more important than the demand for a holistic study. The hypothetical effect is empirically demonstrated by this study and thus confirms the hypothesis formulated above. In this way, the author wants to provide important insights for the entire research field of energy policy in order to be able to make better legal decisions in the future.

Literature Review

Since 2015, the Federal Ministry for Economic Affairs and Energy (BMWi) has been promoting voluntary energy advice in SMEs in order to identify potential energy savings in companies, to increase the number of energy efficiency measures implemented and to achieve additional energy savings (Bundesministerium für Wirtschaft und Energie BMWi, 2017). The competent licensing authority publishes annual statistics. For this study, a systematic data analysis was carried out between July and December 2018 based on online data sources of the annual statistics from 2015 to 2018 of the Federal Office of Economics and Export Control (BAFA, 2018; BAFA, 2017; BAFA, 2016; BAFA, 2015)
The aim of this literature research was to identify economic sectors that show an increased interest in energy efficiency. In addition, regions in the Federal Republic of Germany were identified where most of the supported energy consultations were conducted. Figure 1 shows the number of applications and the number of granted applications per calendar year. In the last four years, 9,583 applications have been submitted. Of these, 5,894 were approved. This corresponds to a rate of 61.50%.

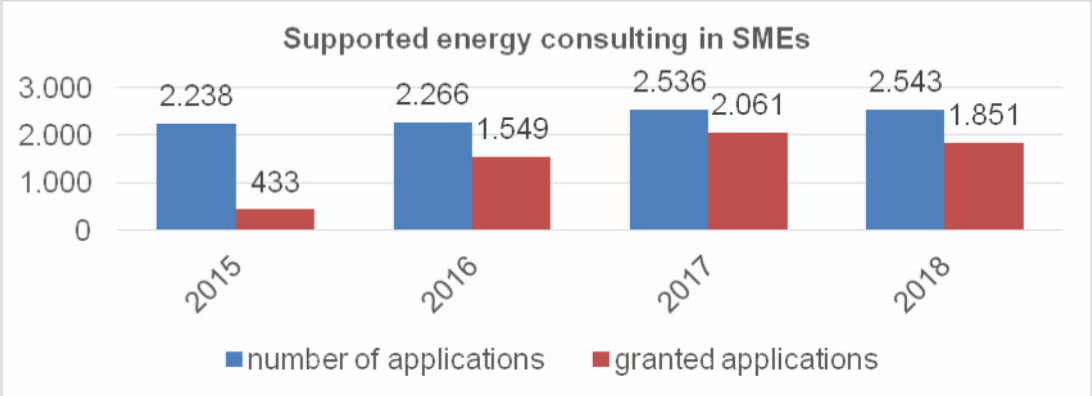

Fig. no. 1 Number of applications an granted applications for subsidized energy consulting in SMEs

Source: BAFA. Jahresstatistik 2018, BAFA. Jahresstatistik 2017, BAFA. Jahresstatistik 2016 and BAFA. Jahresstatistik 2015

Figure 2 shows the results of the data analysis to identify the relevant economic sectors. A significant sector of the economy is the manufacturing sector with more than 40% of all financing applications. As a further significant economic environment, the hospitality and the trade were identified at 20% each.

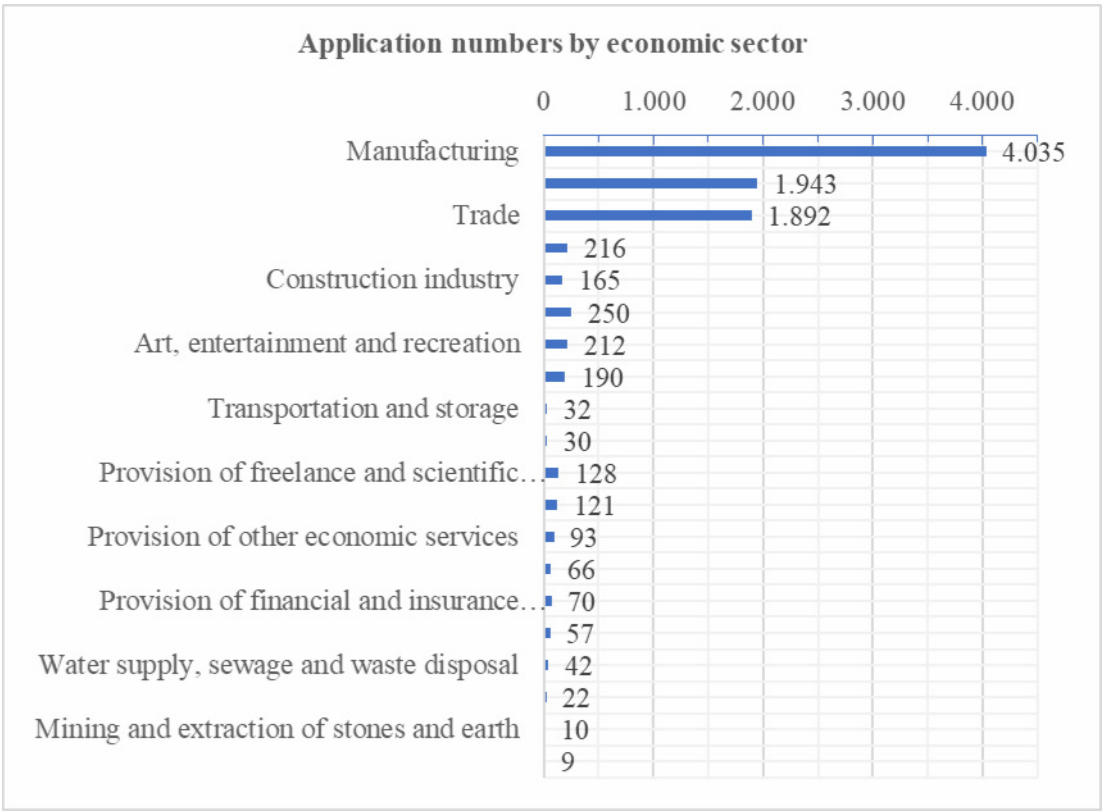

Fig. no. 2 Application numbers by economic sector

Source: BAFA. Jahresstatistik 2018, BAFA. Jahresstatistik 2017, BAFA. Jahresstatistik 2016 and BAFA. Jahresstatistik 2015)

Figure 3 shows the results of the data analysis to identify the relevant regions. The federal states Baden-Wuerttemberg (BW), Bavaria (BY) and North Rhine-Westphalia (NW) were identified as the regions with the highest interest in energy consulting.

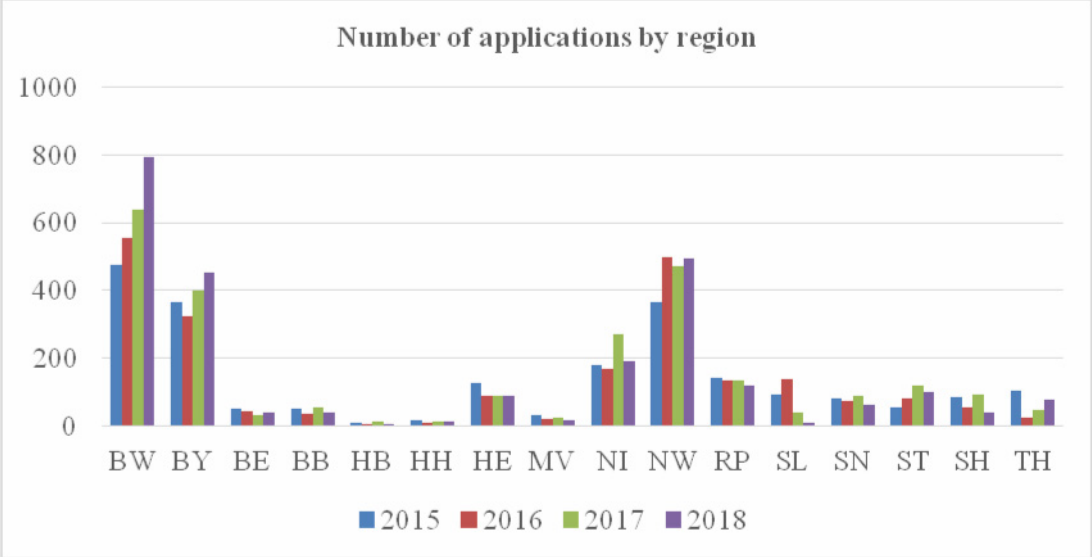

Fig. no. 3 Number of applications by region
Source: BAFA. Jahresstatistik 2018, BAFA. Jahresstatistik 2017, BAFA. Jahresstatistik 2016 and BAFA. Jahresstatistik 2015)

Methodology of Research
First, a literature search (Method 1) was carried out to identify interested economic sectors and their regional affiliation. In a next step, companies from the identified economic sectors (method 2) were interviewed in a phone study (with expected yes or no answers).

Survey results and discussion
To conduct the study, companies from the identified federal states (Baden-Württemberg, Bavaria and North Rhine-Westphalia) and the relevant economic sectors (manufacturing, hotels and trade) were interviewed. A total of 2,000 companies were called by phone and reached 1,433. Of these companies, 178 (8.9%) participated in the survey. It is not possible to draw any conclusions about the surveyed economic sectors and federal states, since the data records are anonymous. In the telephone interviews the following main questions were discussed:

Question 1: Have you already dealt with the issue of energy efficiency?
Question 2: Did you have an energy audit?
Question 3: Did you know that energy audits are being promoted for SMEs?
Question 4: Did you use the funding program?
Question 5: Do you intend to carry out an energy assessment of your company in the future?

The results of the telephone survey are shown in Figure 4. The research results for question 1 show that the majority (144 SMEs, 81%) of the companies surveyed already dealt with energy efficiency issues. However, only 75 out of 144 companies (question 2) did an energy audit.

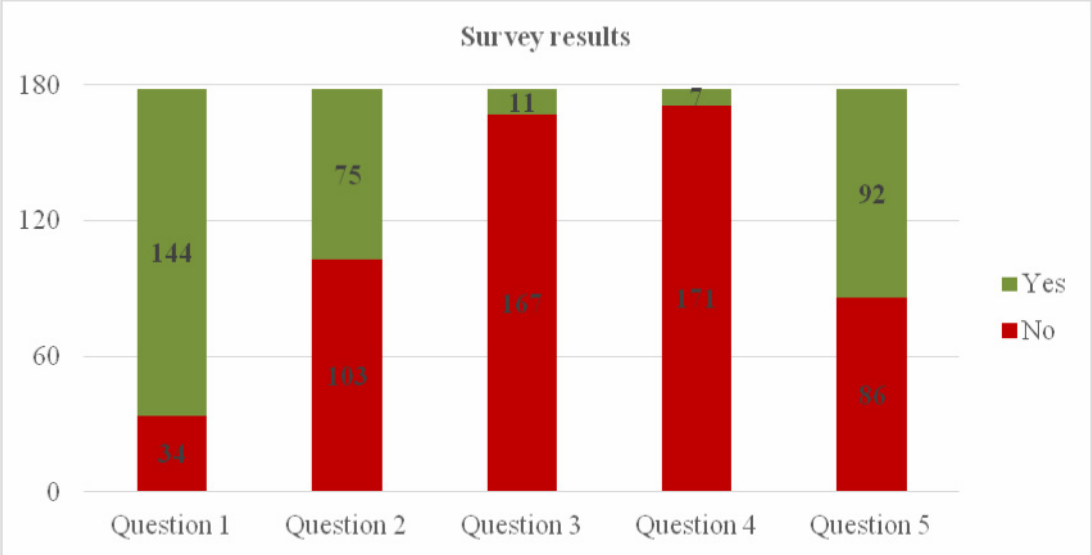

Fig. no. 4 Results of the survey
Source: authors

Question 3 shows that only a small proportion (11 SMEs, 6%) of the companies surveyed knew about the financing program. The results for question 4 show that only 7 out of 75 companies that have carried out an energy analysis of their company have used the support program.
Question 5 shows that more than 50% plan to do an energy analysis. The 92 SMEs, together with the 75 companies that have already carried out an energy audit, constitute 93.82% of all participants.

Conclusions

Contrary to previous research results, the current study shows that companies are very much concerned with the issue of energy efficiency on a voluntary basis.
An interest is clearly visible when the economic sectors are energy-intensive, and several energy-using technologies are used. This is characteristic of the manufacturing, hospitality and trade sectors.
Based on these findings, the identified states can be confirmed. At least for the regions of Bavaria and North Rhine-Westphalia, the manufacturing industry is decisive and typical.
The hypothesis that an exemption from the statutory obligation to carry out energy audits can lead organizations to address energy efficiency issues can thus be at least partially confirmed.
Another study should look at the evaluation criteria of SMEs for the implementation of energy optimization measures and correlate them with those of non-SMEs.

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ICT AND ENVIRONMENTAL INDICATORS FOR GREEN GROWTH IN BULGARIA

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Abstract

The focus of the green growth concept is on reducing pollution and greenhouse gas emissions, the efficient use of natural resources and the opportunities for investment and innovation in environmental services. However, green growth not only affects the quality of growth, but also the overall production process (such as low carbon economy). The purpose of the paper is to examine the interrelationship in Bulgaria between ICT indicators and environmental indicators for the period 1990-2014 (e.g. emissions, renewable energy and others) using the Granger causality test for assessing whether Bulgaria has developed green growth strategies to achieve sustainable performance in different sectors of the economy.

Keywords

Green growth, granger causality test, environmental indicators; sustainable development goals.

JEL Classification

Q56, Q570

Introduction

The term "green growth" is relatively new and has enjoyed increasing popularity in recent years. Green growth is a concept or business innovation process, contributing to the overall understanding of economic development and environmental sustainability. (OECD a, 2008; OECD b, 2008; OECD c, 2008, OECD, 2019). The general opinion of experts is that the terms “green growth” and “sustainable development” are not synonymous. The first term is rather a subset of the second. The focus of the green growth concept is on reducing pollution and greenhouse gas emissions, the efficient use of natural resources and the opportunities for investment and innovation in environmental services. However, green growth not only affects the quality of growth, but also the overall production process (such as low carbon economy) (IISD, 2012; Capgemini, 2008). It is possible to underline that green growth concept promote and support integrated approaches to sustainable development. Such approaches recognize the centrality of the 2030 Agenda for Sustainable Development, and can help to deliver optimal social, environmental, and economic outcomes of by considering the interlinkages between different sectors and governance structures. Orientation towards green growth requires both productivity on the market and good infrastructure, including energy, transport and telecommunication infrastructure. Thus, green growth strengthens the

territorial cohesion between regions. Knowing new markets through green technology is a new organisational practice for each country and makes every market more stable. Guidelines for such organisational practices are closely related to the effects of the economic and financial crisis of 2008 (for example in Asia). (Ministry of Land, 2008; Zelenovskaya, 2010). ICTs have boosted significant transformations of economic and social structures and some studies have estimated that the development of IT systems can increase the efficiency of production and consumption in the energy, transportation, building and manufacturing sectors reducing the global greenhouse gas emissions by 15 per cent by 2020, compared to a business-as-usual scenario with a 2002 baseline (IISD 2011). The concept of green ICT encompasses sophisticated solutions that combine IT and indicators to help organizations save considerable energy and resources for improving business and obtaining economic benefits. ICT indicators appear as technological tools or environmental technologies for green growth. Relationships between ICT and environmental indicators are indirect and are still in the learning process (UNCTAD, 2010).

The importance of environmental and ICT indicators for green growth

According to OECD 2009, new technologies will enable economic growth offsetting critical environmental issues. Shortage of natural resources and sustainable energy production are global challenges that need alternative solutions for creating new business opportunities. The face of sustainability has evolving, with different stakeholders involved and interlinked concerns, and there is an urgent need to find practical solution to achieve the ambitious Sustainable Development Goals (SDGs). SDGs represent the evolution of the sustainable development concepts which have been ratified in 2015 with the Agenda titled "Transforming our world: the 2030 Agenda for Sustainable Development.

ICT solutions give a set of new smart technologies and actions, which can affect energy efficiency and waste management by making production more resource-efficient. ICT solutions should allow the different countries to foresee their comparative advantages in global trade helping to manage risk and providing insights into effective policy and practice (Kamal-Chaoui and Plouin, 2012). Furthermore, ICT can create the conditions to increasing productivity without harming the environment and making productive investments in different sectors favoring at the same time the achievements of diverse SDGs, as Industry innovation and infrastructure, Sustainable cities or Responsible consumption and production. According to experts, investments in ICT improve green growth even if there are two significant problems which are characteristics of the study of IT and environmental indicators: (1) the information gap and (2) the capacity gap. The information gap represents a lack of reliable data on eco-activities and the capacity gap includes a lack of capacity in developing green technologies for improving economic performance. So, the interrelations between ICT and the environment could involve either positive or negative impacts (Culler, 2004; OECD, 2009). Positive relationships affect the general performance on climate change, energy use patterns and waste management / carbon pollution. Constant monitoring of such indicators is a key for any business and its users. Negative impacts are connected with the adequate management of GHG emissions, transport / manufacturing and e-waste. The improvement of these negative relationships should be a priority subject in the work of both governments and international organizations. (Jänicke, 2012). Several examples of the application of ICT for green growth are illustrated in Fig. no. 1. This kind of correlation between ICT and green growth can be used to assess forecast scenarios on environmental sustainability. The purpose of this paper is to examine the interrelationship in Bulgaria between ICT indicators and environment indicators for the period 1990-2014 (e.g. emissions, renewable energy and others) for assessing whether Bulgaria has developed green growth strategies.

Data and Methodology

In this paper we study–the causal link between ICT and environmental indicators for assessing green growth development in Bulgaria. Granger causality is a broader concept based on the sentence that "the past can influence the future, but not vice versa". This postulate of Granger is seen in the informative aspect in order to clarify which part of the variances of the current levels of environmental indicators (Y) can be explained with its own previous levels, and by adding the previous meanings of ICT indicators (X) can be well-improved this explanation. The methodology of Granger proposes results that remain hidden by the classical correlation analysis. While correlation analysis can only appreciate how strongly is interacting two variables between, the test of Granger can determine the direction of the interaction between two dynamic processes, even if each of them develops under the influence of many other factors. To do this, firstly, a set of environmental indicators were chosen and then the economic sectors and ICT applications with the greatest impact on these indicators were identified. It is important to underline that there are areas of interaction (e.g. the Internet or dematerialization of paper, etc.) which have not been investigated yet and for which data are not available. It is noteworthy that most organizations which study green growth recognize as leading determinants for green business models ICT indicators, rather than the environmental indicators. For this study have been selected indicators: a) extrapolated by Euromonitor database b) characterizing the most appropriate correlation between ICT and green growth in Bulgaria. The indicators are differentiated in ecological indicators and ICT indicators. The paper uses annual data for the period 1990-2014 and the database is from Euromonitor. To respond to the theoretical requirements of the econometric analysis with time series, the data are disaggregated in advance of semiannual data using spline functions, based on three points. The investigated indicators are divided in two principal groups: environmental and ICT indicators. As a result of pre-selection, the indicators used in this paper are presented in tables no.1 summarized what is included in different ICT groups considered. Economic development is a broader concept than economic growth and refers to improving the quality of life and business as noted by the economist Amartya Sen Economic growth is one aspect of the process of economic development. In this study we also add as indicators the total productivity and the total population of Bulgaria to the traditional indicator of GDP growth (table no. 2). All the variables in the current database are logarithmically transformed. Such a transformation is not applied to derivatives indicators from the ICT sector. Logarithmic transformation provides comparability of these two indicators. New time series are investigated with respect to the nature of their tendency by parallel application of autocorrelation analysis, tests of unit root and stationary tests (ADF-test; KPSS-test).

Table no. 1 Used indicator details

Natural resources		
Indicators	*Measure*	*Variables*
Arable land	% of land area	AL_land
Arable land	hectares per persons	AL_person
Arable land	Hectares	ArabLand
Forest area	% of land area	Forest
Forest area	km^2	Forest_SQKM
Energy mix-demand, supply, efficiency		
Energy production from renewable sources	GWh	EP_Renew
Atomic and nuclear energy	% of total energy use	EP_ANE
Electricity production	GWh	EP_Total
Electricity production per capita	kWh	EP_percap kwh

Fossil fuel energy consumption	% of total	E_Fossil
Primary energy consumption	Tons/1000	Primencons
Energy efficiency	USD	ENEFF
Emissions		
CO_2	Kt	CO_2
CO_2	Metric tons per capita	CO_2_cap
CO_2 from solid fuel consumption	% of total	CO_2_solid
Greenhouse gas emissions	Kt	GHGE

Economic development is a broader concept than economic growth and refers to improving the quality of life and business as noted by the economist Amartya Sen Economic growth is one aspect of the process of economic development. In this study we also add as indicators the total productivity and the total population of Bulgaria to the traditional indicator of GDP growth (table no. 2). All the variables in the current database are logarithmically transformed. Such a transformation is not applied to derivatives indicators from the ICT sector. Logarithmic transformation provides comparability of these two indicators. New time series are investigated with respect to the nature of their tendency by parallel application of autocorrelation analysis, tests of unit root and stationary tests (ADF-test; KPSS-test).

Table no. 2 Economic growth

Indicators	Measure	Variables
GDP	Constant prices 2014	GDP
GDP per capita	USD, 2014	GDP per capita
Productivity	USD, 2014	Product

The results of the application of the cited methods showed, that none of the methods of logarithms with absolute values of indicators can be accepted as stationary. Through these defined methods the type of transformation of original time series is made in terms of stationarity required by the subsequent econometric analysis. The time series are stationary with their first differences, so they are identified as integrated time series from the first level. This implies that with the use of the VAR-model, which is at the basis of the Granger causality test, it is necessary to implement the first difference of the logarithms for the corresponding variables. In general, the first differences (differences into two adjacent time periods) of the logarithmic variables make sense of the increase, because the difference of the logarithms of the both values is a logarithm of the quotient of these same variables. So, for any indication of the ICT sector or environmental indicators the following equations are valid:

$$DLn(EI_{j,t}) = Ln(EI_j)_t - Ln(EI_j)_{t-1} = Ln\left(\frac{EI_{j,t}}{EI_{j,t-1}}\right) \quad (1)$$

$$DLn(ICT_{j,t}) = Ln(ICT_j)_t - Ln(ICT_j)_{t-1} = Ln\left(\frac{ICT_{j,t}}{ICT_{j,t-1}}\right)$$

where: EI - some environmental variables; ICT -variables of ICT group

The transformation takes an economic sense of rate of change for the relevant primary variable. These newly available time series are the core for the Granger causality test. The indicators that make up the research database in this paper can be viewed as cause and as a consequence of one another (or relative to one another) Descriptive analysis and Direct (Pairwise) Granger Causality Tests are used in the paper. Descriptive analysis was used to identify the time series and to assess their integrity.

To assess the nature of their relationship the Pairwise Granger causality test is implemented. "Causality Granger" is associated with the fact that "the past can influence the future, but not vice versa." This postulate of Granger is seen in an informative aspect in order to clarify how many variations in the current levels of environmental indicators (Y) can be attributed to its previous meanings. In addition, also to explain if the previous levels of ICT indicators (X) can improve this explanation. The Granger causality test of the paper was carried out by the VAR-model:

$$EI_t = cons_{EI} + \sum_{j=1}^{p} \alpha_j ICT_{t-j} + \sum_{j=1}^{p} \beta_j EI_{t-j} + v_t \qquad (2)$$

$$ICT_t = cons_{ICT} + \sum_{j=1}^{p} \alpha_j ICT_{t-j} + \sum_{j=1}^{p} \beta_j EI_{t-j} + u_t$$

where*: (ICT*) and *(EI)* are vectors of variables and their lags respectively - for ICT and environmental indicators, and α_j and β_j are matrices of coefficients to *:(ICT*) and *(EI)*. The disturbance terms v_t and u_t were assumed to be uncorrelated. The verification shall be limited to checking the null hypothesis of equality of zero coefficients of a group (Granger, 1969).

$H_{0(1)}: \alpha_1 = \alpha_2 = ..\alpha_p = 0$ and $H_{0(2)}: \beta_1 = \beta_2 = ...\beta_p = 0$.

According to the test, variables that verify the existence of causality are independent of each other. According to the test results of Granger, the following outputs are possible:

1) No one variable can be classified as a cause in Granger;
2) One-way causality $(ICT \rightarrow EI)$ and not vice versa;
3) One-way causality $(ICT \leftarrow EI)$ but not vice versa.
4) The variables (X) and (Y) represent a two-way Granger cause $(ICT \overset{\rightarrow}{\leftarrow} EI)$.

Following the theoretical background, the test can be applied to each of the indicators that characterize the green growth. Hypotheses to be verified are:

$H_{0(1)}$: ICT indicators do no Granger Cause under the impact of the environmental indicators i.e.

$H_{0(2)}$: Environmental indicators do not Granger Cause under the impact of ICT indicators i.e.

both tested hypotheses relate to the rates of change of the underlying variables. Both of the tested hypotheses are related to the rates of change of the variables. In this sense, both hypotheses are checked: the first one- the rate of change in ICT indicators are not the cause of the rates of change of environmental indicators; and the second one- the rate of change of the environmental indicators are not the cause of the rate of change of the environmental indicators. To reach the conclusion that (ICT) influences (EI) i.e. (ICT→EI) it is necessary to meet simultaneously the following conditions:

1) Rejected hypothesis $H_{0(1)}$: "(ICT) does not affect (EI)".
2) Accepted hypothesis $H_{0(2)}$: "(EI) does not affect (ICT)".

In the event that both hypotheses are rejected, so the relationship between the two variables exists. If both hypotheses are accepted, the causal relationship between variables in the sense of Granger does not exist. It should be noted that the test results will show only in a purely statistical sense whether past values of one variable may contribute to the explanation of the variation in another variable. The application of Granger causality test enforces the requirements on the construction of the autoregressive models with distributed lag, as well as those for ensuring stability of VAR-system. Practically (de facto) the test of hypotheses is through F-test:

$F = \frac{(SSR_R - SSR_U)/h}{SSR_U/(n-k_U)}$, degrees of freedom, $v_1=h$, $v_2=n-k_U$, n – number of observations; k_R – parameters in the unrestricted regression; h – number restrictions $h=(k_U-k_R)$; SSR_u, SSR_R – sum of squared residuals in unrestricted and restricted AR-model. The test was applied to the AR-model with significant parameters and normal distribution residuals. VAR-systems are tested and specified in terms of Lag Structure by Lag Exclusion Wald Tests, Lag Order Selection is determined by co-application of the following tests: LR: sequential modified, AIC, SC information criterion. For the residuals are used autocorrelation analysis, LM-test and Normality tests. All calculations are carried out by statistical software EViews 9.5. Therefore, such a relationship cannot be used to bring theoretical conclusions, but only for acceptance or rejection of such relationship. The procedure of the Granger causality test sets out in pairs of the variables groups: ICT and environmental indicators. So, for the purpose of this paper have been tested all possible pairs of causality variables on the principle "each with each". The results of the paper are logically justified by the relationship between ICT and environment indicators.

Result and discussion

From the study emerges that inclusive green growth policies in Bulgaria is progressing slowly (Mancheva, 2012). The test results in table no. 3, for example, show that a well-developed ICT sector stimulates no renewable higher electricity production. The rates of change of the components of ICT intensity are an incentive for energy production and consumption. The relationships from Intensity ICT indicators to total energy production, including also nuclear sources or renewable sources, are one-way causality relationships. Only the variables total traffic from mobile networks and energy production from nuclear sources or renewable sources represent a Granger causality or can be considered as endogenous variables. It can be argued that not only the availability of ICT infrastructure or the access to ICT are the main reasons for the electricity production from different sources. These results only show that the rates of change of ICT indicators and electricity production can be defined as coherent. Existing energy mix is a necessary but not sufficient element for the ICT development. The test results in table no. 4 show that the indicators for Access to ICT (without differences between the types of traffic) can be identified as the cause in Granger as regards the primary energy consumption. In recent years, both the number of subscribers of fixed telecommunication networks in Bulgaria and their consumption have fallen very quickly. The test results in table no. 4 show that the indicators for Access to ICT (without differences between the types of traffic) can be identified as the cause in Granger as regards the primary energy consumption. In recent years, both the number of subscribers of fixed telecommunication networks in Bulgaria and their consumption have fallen very quickly.

Table no. 3 Pairwise Granger Causality (GC) Tests for the energy mix

Hypothesis	Lags: 2			Lags: 3			Conclusions
	Obs	F-Stat	Prob	Obs	F-Stat	Prob	
FIXED_MLN *d_n GC* § EP_ANE	42	4,478	0,0181				$(Fixed_min \rightarrow EPane)$
EP_ANE d_n GC FIXED_MLN		2,754	0,0768				
MOBILE_MIN d_n GC EP_ANE	42	1,452	0,2471				$(Mobile_min \rightleftarrows EP_ane)$
EP_ANE d_n GC MOBILE_MIN		3,182	0,0530				
FIXED_MLN d_n GC EP_RENEW	42	0,786	0,4631				$(Fixed_min \rightarrow EP_renew)$
EP_RENEW d_n GC FIXED_MLN		3,033	0,0603				
MOBILE_MIN d_n GC EP_RENEW				41	4,260	0,011	$(Mobile_min \rightleftarrows EP_renew)$
EP_RENEW d_n GC MOBILE_MIN					9,0680	0,001	

FIXED_MLN d_n GC EP_TOTAL	42	3,4228	0,0433				$(Fixed_min \rightarrow EP_total)$
EP_TOTAL d_n GC FIXED_MLN		1,6585	0,2043				
MOBILE_MIN d_n GC EP_TOTAL				41	3,504	0,025	$(Mobile_min \rightarrow EP_total)$
EP_TOTAL d_n GC MOBILE_MIN					0,196	0,898	

d_n GC §: does not Granger Cause

Table no. 4 Pairwise Granger Causality Tests for ICT infrastructure

Hypothesis:	Lags: 2			Lags: 3			Conclusions
	Obs	F-Stat	Prob	Obs	F-Stat	Prob	
TTS *d_n GC* § PRIMENCONS	42	2,644	0,084				$(TTS \rightleftarrows Prim_c)$
PRIMENCONS d_n GC TTS		3,327	0,047				
FIXED d_n GC PRIMENCONS	42	0,547	0,583				Yes, does not Granger cause
PRIMENCONS d_n GC FIXED		1,442	0,249				
MOBILE d_n GC PRIMENCONS	42	2,713	0,079				$(Mobile \rightleftarrows Prim_c)$
PRIMENCONS d_n GC MOBILE		3,860	0,030				
IS d_n GC PRIMENCONS				41	3,766	0,019	$(IS \rightleftarrows Prim_c)$
PRIMENCONS d_n GC IS					2,445	0,080	
IU d_n GC PRIMENCONS				41	4,209	0,012	$(IU \rightleftarrows Prim_c)$
PRIMENCONS d_n GC IU					2,306	0,094	
PRIMENCONS d_n GC INVEST_ICT				41	6,674	0,001	$(Invest \rightleftarrows Prim_c)$
INVEST_ICT d_n GC RIMENCONS					3,418	0,028	

d_n GC §: does not Granger Cause

The test results in table no. 5 show logical relationships, so that the ICT infrastructure and ICT access do Granger cause for forest areas. Furthermore, the arable land does Granger cause for GDP and Internet infrastructure. During the sampling for this paper, we discovered that there is no difference in Bulgaria between the use of GDP and Net National product as replaceable indicators.

Conclusions

The presented results lead to the following observations for the green growth trends in Bulgaria, based on environmental and ICT indicators: tables no. 3, 4 and 5 show that the levels of rejection of the null hypothesis are far below than the traditionally accepted in similar studies $\alpha = 0, 05$.

Table no. 5 Pairwise Granger Causality Tests for natural resources

Hypothesis:	Lags: 2			Conclusions
	Obs	F-Stat	Prob,	
AL_PERSON d_n GC GDP	41	3,189	0,053	$(Al_per \rightleftarrows GDP)$
GDP d_n GC AL_PERSON		3,533	0,040	
AL_PERSON d_n GC IU	41	3,189	0,053	$(Al_per \rightleftarrows IU)$
IU d_n GC AL_PERSON		3,533	0,040	
ARABLAND d_n GC GDP	41	3,910	0,029	$(Arabland \rightleftarrows GDP)$
GDP d_n GC ARABLAND		3,821	0,031	
ARABLAND d_n GC IU	41	3,910	0,029	$(Arabland \rightleftarrows IU)$
IU d_n GC ARABLAND		3,821	0,031	
ARABLAND d_n GC TTS	47	4,981	0,012	$(Arabland \rightleftarrows TTS)$
TTS d_n GC ARABLAND		5,510	0,008	
FOREST_SQKM d_n GC FIXED	47	6,369	0,004	

FIXED d_n GC FOREST_SQKM	47	0,310	0,735	$(Fixed \rightarrow Forest_sq)$
FOREST_SQKM d_n GC IS	37	12,601	0,000	$(IS \rightarrow Forest_sq)$
IS d_n GC FOREST_SQKM		0,755	0,478	
FOREST_SQKM d_n GC MTL_1000	47	3,280	0,048	$(MTL'000 \rightarrow Forest_sq)$
MTL_1000 d_n GC FOREST_SQKM		0,726	0,490	
FOREST d_n GC IU_1000	47	4,841	0,013	$(Forest \rightleftarrows IU'000)$
IU_1000 d_n GC FOREST		3,763	0,031	

d_n GC §: does not Granger Cause

So, the proposed Granger test designs some trends for the selected indicators (included in an econometric model) in order to predict their future development as possible. The studied relationships between ICT and the ecological indicators proves that in Bulgaria the pattern of "green growth" is not going in the right direction according to the worldwide and European trends. At this stage, the green growth in the country can be described as chaotic and uncertain. The Granger test is useful in demonstrating the different interrelations highlighting the strong and the weak correlations. The test has showed only indirect links between ICT and environmental indicators, with the leading role of the ICT indicators. This is because the ICT sector in Bulgaria is well-developed, but the policy for developing natural resources management is still not well-realised. The collected information for environmental indicators in Bulgaria is relatively "young", with different frequencies of collection and cannot allow distinguishing a long-term co-integration relation between the variables. For this reason, no important relationship for green growth strategies can be associated with the possible reduction of green houses gases (GHG) emissions. This means that Bulgaria is in delay in taking actions towards the transition to green growth. It would be necessary many significant long-term investments and innovations to replace inefficient technology with costly new infrastructure. For such investments and actions to address sustainable and equitable outcomes, the decision-policy makers have to deliver new form of investments in order to make the transition to green growth effective in Bulgaria. Another essential recommendation is to unify the content of environmental indicators in Bulgaria with the international database for environmental indicators internationally, maintaining a database with lower frequencies of surveillance - eg. monthly and quarterly data.

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BUILDING ENERGY EFFICIENCY. THE ECONOMIC CAMPUS OF THE UNIVERSITY OF BARI ALDO MORO

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Abstract

The current worldwide energy consumption increase imposes several problems in terms of limited energy resources, supply difficulties and environmental impacts. The common challenge is to reduce energy consumption mitigating at the same time impacts on climate change. In this context, *Building Energy Efficiency* (BEE) attracts increasingly attention, as building sector consumes on average over than 35% of global energy. Thus, it is not a coincidence that European Union (EU) framework has been interested in this topic promoting different actions to support sustainability in building sector. These actions include the allocation of funds for restructuring and for energy efficiency operations, as well as rules and directives concerning the methods of energy certification and reduction in consumption of natural resources with the common aim of sustainability.

The aim of this paper is the study of Economic Campus (EC) of University of Bari Aldo Moro energy requalification presenting both economic (monetary cost reduction) and environmental (energy savings and greenhouse gases reduction) benefits. After having analyzed the role of building sector on global and European energy consumption and its contribution to climate change, an ex-ante analysis and ex-post prevision of the case study proposed will be presented.

Keywords

Building energy efficiency; energy consumption; photovoltaic system; sustainability

JEL Classification

P28; Q01

Introduction

The current worldwide energy consumption increase imposes several problems in terms of limited energy resources, supply difficulties and environmental impacts. The common challenge is to reduce energy consumption mitigating at the same time impacts on climate change. In this context, Building Energy Efficiency (BEE) attracts increasingly attention, as building sector consumes on average over than 35% of global energy (IEA, 2017). Thus, it is not a coincidence that the European Union (EU) framework has been interested in this topic promoting different actions to support sustainability in building sector.

Primary BEE has to be able to combine human expectation of indoor comfort and well-being with building features in terms of energy savings and related Greenhouse Gases (GHG) reduction. Since each person spends about 90% of his time inside residential, working or recreational buildings, Kilbert (2012) and Yudelson (2008) established that

energy efficient buildings shall have "*healthy facilities designed and built in resource-efficient manner, using ecologically based principles"* while the second defines it as a "*high-performance property that considers and reduces its impact on the environment and human health"*.
To pursue BEE, EU promoted several interventions and issues including the allocation of funds for restructuring and improving energy performance as well as rules concerning audit and energy certification. Directive 2002/91/UE and Directive 2010/31/EU on buildings energy performance promoting "Zero Energy Buildings" (ZEB) and "Near Zero Energy Buildings" (NZEB) with an energy balance near or equal to zero are particular interesting. NZBE became an EU obligatory standard for new public buildings afterwards 2018 and for all buildings constructed afterwards 2020. In Italy, Legislative Decree 102/2014 has implemented BEE (GURU, 2014; OJEC, 2002; OJEU, 2010). Each normative contemplates energy efficiency for both existing and new buildings.
The aim of this paper is the study of the energy requalification of the Economic Campus (EC) of University of Bari Aldo Moro highlighting both economic (monetary cost reduction) and environmental (energy savings and GHG reduction) benefits. After having analyzed the role of building sector on global and European energy consumption and its contribution to climate change, an ex-ante analysis and ex-post prevision of the case study proposed will be presented.

Building sector energy consumption
Worldwide, building sector energy use is on average less than 2,800 million of tons of equivalent oil (Mtoe) of which less than 2,100 Mtoe (72%) are consumed in residential buildings and less than 7500 Mtoe (28%) in non-residential ones. The total energy utilized by building sector was approximately 35% of global energy use estimated to be more than 8,000 Mtoe (IEA, 2017). Table n. 1 shows global average energy consumption by end-use in both building categories considered and illustrates that while space heating represents the highest energy consumption (32%) in both cases, the other values show deep differences. Non-residential buildings include more complex and heterogeneous final-destination typologies (e.g. hospitals, wholesale and retail, educational, etc.) compared to residential ones. For this reason, variations in usage pattern, energy intensity and construction techniques make the quantification of end-use average values complex to measure.

Table no. 1 Global average Energy Consumption by End-Use

End-use	Residential (%)	Residential (Mtoe)	Non-Residential (%)	Non-Residential (Mtoe)
Appliances	9%	188	0,5%	4
Cooking	29%	606	0,5%	4
Space Heating	32%	669	32%	233
Water Heating	24%	500	12%	86
Lightning	4%	85	16%	116
Cooling	2%	42	7%	50
Other (IT equipment, etc)	0%	0	32%	232
TOTAL	100%	2090	100%	725

Source: Personal elaboration by the authors on data Lucon et al., 2014 and Thewes et al., 2014.

In the same period, approximately 9.5 Gt of CO_2 (19% of global CO_2 emissions) have been released by building sector of which 3 Gt are direct emissions and the rest are indirect (Lucon et al., 2014).
In Europe, it is esteemed that building stock is close to 24 billion m^2 utilizing more than 720 Mtoe. Almost 27% (475 Mtoe) of EU energy consumption (1764 Mtoe) is spent by residential buildings (18 billion m^2) while approximately 14% (247 Mtoe) by non-residential ones (6 billion m^2). The average building consumption ranges between 0.015-0.028 toe/m^2 per year, recording deep differences between EU countries. Finland presents the highest value (0,027 toe/m^2 per year) while Bulgaria or Spain the lowest one (0,012 toe/m^2 per year).
Even EU energy consumption by end-use shows space heating as the highest quota with 57%, followed by water heating (25%), cooking (7%), lighting and other applications (11%) (Crawley, 2007). The huge difference between global and European energy consumption by end-use supports EU policies towards BEE.
EU building sector generates on average less than 1,35 Gt CO_2 emissions representing approximately 35% of total EU CO_2 emissions (3,7 Gt) (The World Bank, 2018).
BEE is composed by two different parts, the first one is linked to construction and/or requalification works while the second one to building management. It is estimated that approximately 30% of EU building CO_2 emissions (0,4 Gt) depends on construction and construction works, while 70% on building management (Eurostat, 2018). This means that BEE can be reached "connecting" materials used for construction, performing furniture and fixtures to improve thermal and acoustic performance, efficient lighting (LED one) and energy costs.
However, BEE implementations require higher initial investments varying from 0.4 to 11%. Such a wide range depends on the achieved level of energy efficiency providing monetary savings that can be ten times higher than the investment (Kats, 2006 and 2010; Rehm, Ade, 2013; Deng, Wu, 2013).

Methodological approach

In order to reach the scope of the analysis several documents have been considered such as national and international references, reports, studies and statistics regarding the building energy efficiency. Related to the case study presented, in addition to legislative references and official documents, also personal communications with specific business staff were considered.
First step was reference literature analysis for a better understanding of BEE general definition, its implications and benefits deriving from its implementation. Next, after having analyzed legislative framework, the authors investigated technical-architectural, technical-electric and official paperwork regarding the case study. This study, first part of a larger one, offers ex-ante analysis and first year preliminary results related to Economics Campus BEE.

The case study of the Economic Campus

EC is a two main building facility built in 1980s, distinct and different in size with a total volume of more than 370,000 m^3 and a surface of less than 23,000 m^2. A third smaller building was not included in the BEE. The first building, with a volume approximately equal to 110,000 m^3 (30% of total building volume and 45% of total surface) has 3 floors and hosts faculty classrooms. The second one, with a volume approximately equal to 260,000 m^3 (less than 12,500 m^2), has 7 floors and includes professor offices, main library and student common areas.
Works timeline can be split into two phases: the first of financing and the second of construction began on February 23rd, 2017 and lasted for approximately 18 months.

The whole project, accounting 6 million €, has been financed by EU funding program and the Italian Interministerial Economic Planning Committee authorized it on February 20th, 2015. Figure no.1 shows the cost sharing.
Ex-ante energy BEE diagnosis showed a Global Energy Performance (EPgl value) equal to 59.463 kWh/m^3 with 15.931 kg CO_2/m^3 related annual emissions. According to EU energy consumption *labelling* scheme and based on EPgl above mentioned value, ECC "gained" the lowest rate of G Class.

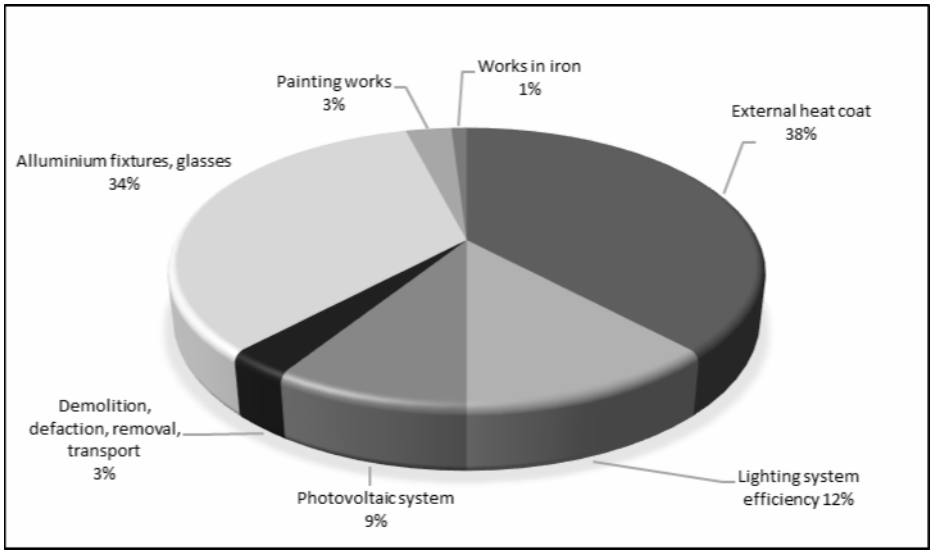

Fig. no. 1 Interventions cost sharing
Source: Personal elaboration by the authors based on official paperwork.

As previous studies stated, BEE can be achieved by two different kinds of approaches. The first one, defined as passive measurement, refers to optimization of architectural design and use of renewable energy resource, while the second one, defined as active measurement, requires innovative and much more efficient technologies in heating, cooling and lighting systems (Zhang et al, 2011). In EC specific case both measures have been integrated with regards to thermal energy utilized for heating systems and to electrical energy for cooling systems. BEE interventions regarded thermal envelope construction, electrical and lightning system improvement through LED bulbs substitution and photovoltaic plants installation in the car parking area. Ex-ante and ex-post details are summarized in table no. 2.

Results and discussion
Overall, there are five main benefit categories associated with BEE: lower operating costs, increased indoor comfort, health and productivity, increased social reputation, increased building market value and reduced environmental externalities (World Green Building Council, 2013; Yudelson, 2010; Zhang, 2015).
The case study gives evidence of part of them and some core improvements have been primarily observed:

1. Combination of architectural requirement and environmental protection
2. Savings energy monetary costs
3. Reduction in fossil fuel use and in GHG emissions.

Table no. 3 summarized these main results according to "Report del Bilancio Ambientale 2012-2018" [Report of Environmental Balance 2012-2018] of the University of Bari Aldo Moro. BEE implementations generate global energy savings of more than 2,000,000

kWh/year of which more than 70% due to thermal-coat and approximately 17% due to LED "relamping" avoiding more than 850 t of CO_2.
The amount of monetary savings at the end of the first year after BEE interventions is expected to be less than 150,000 € (Uniba, 2018).

Table no. 2 Building Status Before & After Requalification

Object	Before	After
Envelope	- Reinforced concrete with brick internal walls and plaster segments. - Insulation-free infill panels. - Situation of degradation and numerous walls materials detachments. - Considerable dispersing surface.	- Reduction of thermal transmittance. - Improvement of thermal performance through insulation of external curtain walls. - Roof slabs insulation with thermal-coat. - Excellent noise reduction.
	- Frames characterized by continuous glass windows with sliding belt.	- Replacement of global frames.
Electrical system	- Methane thermal power plants. - Single cooling and heating split-system.	- Centralized heating and cooling system and 120 single split-system removal.
Lightning	- Internal lightning system: linear fluorescent lamps. - External lightning system: street lightning poles and light towers.	- Internal and external lightning system: LED bulbs. - 2,170 news LED lamps: luminous efficiency 130-150 lm/W (compared to fluorescent lamps luminous efficiency of 70-80 lm/W). - 50,000 hours per lamp (five times higher than incandescent lamps useful life).
Photovoltaic system	- Not present.	- Solar car parks: non-integrated grid-connected photovoltaic plant. - Power: 97.500 kW/year - Production: 98.700 kWh/year - Installation of solar display system inside the building.

Source: Personal elaboration by the authors.

Conclusion

The analysis proposed demonstrates that EU building energy efficiency policy entails great utility and considerable benefits in terms of energy inputs and GHG reduction and monetary savings. Economic Campus example shows a total energy saving of over than 2,000,000 kWh/year corresponding to more than 170 toe/year of fossil fuel, more than 850 t of CO_2

avoided and monetary savings estimated in roughly 150,000 euros/year. Afterwards all these improvements and according to the "Report del Bilancio Ambientale 2012-2018", EC has been included among NZEB by the National agency for new technologies, energy and sustainable economic development (ENEA) responsible of the National Observatory of Italian NZEB.

Table no. 3 Economic & Environmental Benefits after Requalification

Intervention	Economic/material benefits	Environmental benefits
Thermal-coat	- Savings of more than 80,000 € due to thermal insulation. - Savings of more than 35,000 € (due to 111,800 m^3 of natural gas per year saved) per year.	- Reduction of energy lost in the heating of approximately 1,471,400 kWh/year causing the passage from class G (58.099 kWh/m^3 year) to class A+ (38,321 kWh/m^3 year)
Photovoltaic system	- Savings of more than 20 tep per year. - Income of approximately 6,000 € due to national grid kWh exchange.	- 48,955 CO_2 kg/year avoided.
LED lightning	- Savings of more than 10,000 € per year.	- Reduction in electrical energy consumption of approximately 170,800 kWh/year) with replacement of 2,170 LED lamps.
Single split-system removal	- Savings of approximately 21,000 € per year.	- Reduction in energy consumption of more than 350.000 kWh/year.

Source: Personal elaboration by the authors.

Moreover, EC moved from G class to A+ class (Uniba, 2018). The main general conclusion is related to BEE role in non-residential buildings since their average energy consumption is equal to 0.041 toe/m^2 compared to residential one equal to 0.026 toe/m^2. This deep difference demonstrates how BEE improvements, especially in non-residential buildings, contribute towards sustainability.

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USING THE UTAUT2 MODEL TO DETERMINE FACTORS AFFECTING ADOPTION OF CLOUD COMPUTING APPLICATIONS

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Abstract

Cloud computing is one of the new technologies likely to have a significant impact on the teaching and learning environment. In this regard, the understanding and prediction of determinants that affect adopting and using of cloud computing by students is becoming an important and challenging subject. Over time, researchers have developed and used several conceptual models to investigate, in general, the factors that determine the adoption of technologies, and one of the most well-known models is Unified Theory of Acceptance and Use of Technolgy 2 (UTAUT2).

This study aims to adopt this model to examine the key determinants that influence the behavioral intention and use of cloud computing applications in Romania. Thus, in the first part, the paper presents the theoretical coordinates of this model, and, in the second part, the model was tested using Structural Equation Modeling (SEM) by using data collected from 265 students of The Bucharest University of Economic Studies. The Statistical Package for the Social Sciences (SPSS) software and its supplement Analysis of Moment Structures (AMOS) Version 22 were used to analyze the quantitative data and to examine the model relationships. The findings of the research indicate facilitating conditions, hedonic motivation and habit positively influence students' behavioral intention and use of cloud computer applications.

Keywords: cloud computing, Unified Theory of Acceptance and Use of Technolgy 2 (UTAUT2), Structural Equation Modeling (SEM), applications, Romanian students.

JEL Classification: L86, O33.

Introduction

Cloud computing is a term that describes different situations where computing resources or operations are delivered as a service over a network connection; it is a computational system that is based on sharing physical or virtual hardware or software, removing the need to have these resources in our office or in our home. Cloud computing differs from classic systems by providing some key features, the most important of these being flexibility, reliability, a high level of security, excellent control management and cost-effectiveness (Duan, 2017).

Given the benefits that it can offer to professors and students (such as the ability to share, edit, process, and store large amounts of data, allowing users to use their personal workspace and to create an interactive and digital learning environment, with personalized portfolio and self-service web options for students and faculty staff), cloud computing is an

attractive alternative for the university environment, as is mentioned in various studies (Ashtari and Eydgahi, 2017; Hamidi and Rouhani, 2018).
In this context, testing the students' acceptance toward new technologies, like cloud computing, is a very important process. Over the previous decades many models have been used with this purpose and the latest one is Unified Theory of Acceptance and Use of Technolgy2 - UTAUT2 (Amponsah, Kobina Panford and Hayfron-Acquah, 2016; Yang, Feng and MacLeod, 2018).
Taking into account the above, our paper aims to present, firstly, the components and mechanism of the UTAUT2 model and, secondly, the applicability of this model in establishing the factors affecting adoption of cloud computing applications, using the results of a research undertaken among Romanian students.

1. Theoretical Background

The initial model UTAUT (Unified Theory of Acceptance and Use of Technolgy) was developed by Venkatesh et al. (2003) to explain and predict acceptance and use of IT. The key factors of the model were derived from a broad research of other well-established models, including Diffusion of Innovations (DOI) by Rogers (1995), Technology Acceptance Model (TAM) by Davis (1989) and Theory of Planned Behavior (TPB) by Ajzen (1985). UTAUT identifies four key factors, as follows:

- Performance Expectancy - the extent to which the use of technology will provide benefits to consumers in carrying out certain activities;
- Effort Expectancy - the degree of ease or effort associated with the use of technologies;
- Social Influence - the opinions of friends, family and colleagues who can influence the extent to which technology is accepted and used;
- Facilitating Conditions - consumer perceptions regarding available resources and support offered for a certain type of behavior related to the use of technology.

The model is completed with four moderators (age, gender, experience, and voluntariness) related to predicting behavioral intention to use a technology and actual technology use, primarily in organizational contexts. Behavioral intention is often regarded as the predecessor of behavior and can be described as the desire of a person to engage in a particular behavior.
Recently, Venkatesh, Thong and Xu (2012) proposed and tested in a consumer context an extended model, namely UTAUT2 (figure no. 1), which incorporates new constructs, as follows:

- Hedonic Motivation - the pleasure or enjoyment derived from using a technology;
- Price Value - the new variable in the extended model, included because consumers are more price-sensitive than the employees of the companies;
- Habit - the extent to which people tend to conduct behaviors automatically due to learning, previous experiences and past behaviors. Also, this new model is based of removing voluntariness of use as a variable, based on the assumption that consumers act on a voluntary basis.

Compared with the original model, UTAUT2 produced a substantial improvement in the explained variance of behavioral intention, from 56% to 74%, and also a significant improvement in the explained variance of usage, from 40% to 52% (Venkatesh, Thong, and Xu, 2012).
The UTAUT2 model was integrated and applied by researchers in a multitude of studies regarding various user categories (such as employees, consumers, citizens or students) and related to different types of public or private organization, in order to identify the extent to which the factors included in the UTAUT models determine the degree of acceptance and

use of different technologies in various contexts. For example, some research papers aim to determine the degree of acceptance and use of the IT&C and Internet (in general) (Gupta, B., Dasgupta and Gupta, A., 2008), e-Government services (Venkatesh et al., 2011) or mobile applications and technologies (Zhou, Lu and Wang, 2010). Also, some work refer to digital-learning contexts (Pynoo et al., 2011) and others address even the cloud-computing issue (Amponsah, Kobina Panford and Hayfron-Acquah, 2016; Yang, Feng and MacLeod, 2018).

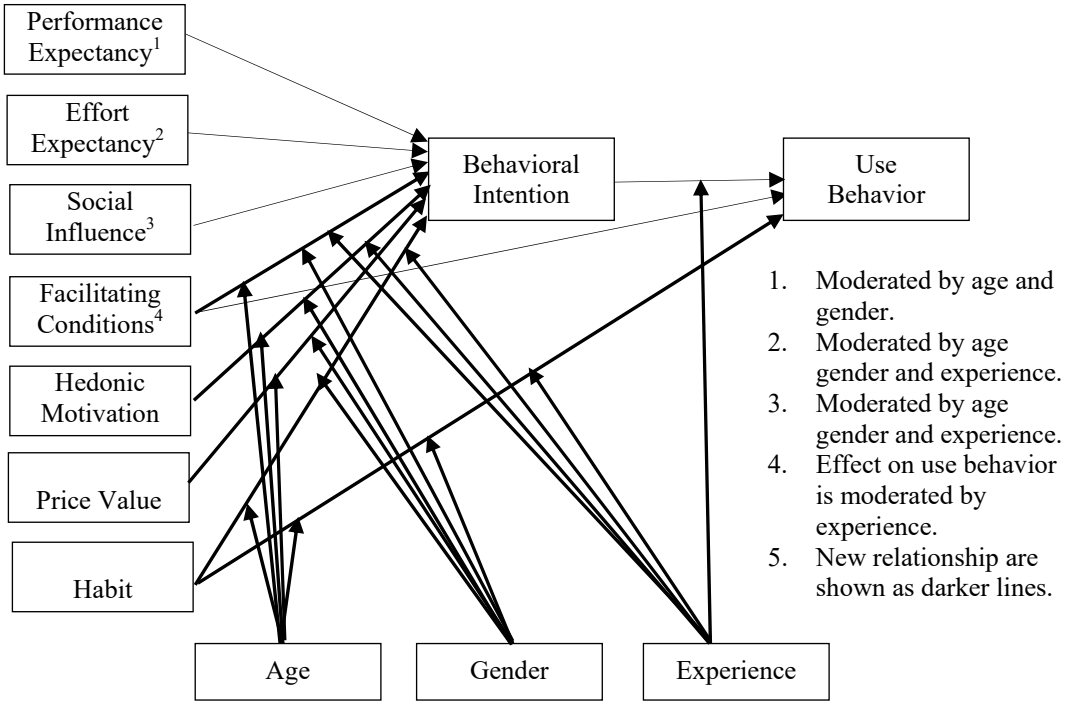

Fig. no. 1 UTAUT2 model

Source: Venkatesh, Thong and Xu, 2012. Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. MIS Quarterly, 36(1), 157-178, p. 160.

Some research has also proposed new endogenous or exogenous mechanisms by expanding the UTAUT2 model. For example, Brown, Dennis and Venkatesh (2010) identified a comprehensive set of technology, task, situational and individual and group characteristics relevant to collaboration as predictors of the UTAUT2 predictors.

2. Research Methodology

The main purpose of this study was to investigate the key determinants that influence the behavioral intention and use of cloud computing applications using the UTAUT2 model. This research adopts a sample survey methodology to test the hypotheses of the proposed model. A quantitative survey was conducted between January and March 2019 among the students of The Bucharest University of Economic Studies in Romania. The questionnaire was designed using the UTAUT2 constructs of Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Hedonic Motivation (HM) and Habit (HT) that affect Behavioral Intention (BI) and Use Behavior (UB) for cloud computing applications. The element of Price Value (PV) was not including in the questionnaire because the most popular cloud computing applications are free for basic usage. Each construct consist of four statements adapted from Venkatesh, Thong and Xu

(2012) and measured using a 6-point Likert scale, ranging from "strongly disagree" to "strongly agree". Besides that, the questionnaires include four demographic questions about age, gender, year of study and employment status and other two questions about cloud computing awareness and benefits. Empirical data were analyzed using IBM SPSS Version 22 in order to produce descriptive statistics and Confirmatory Factor Analysis (CFA). Structural Equation Modelling (SEM) and Analysis of Moment Structures (AMOS) Version 22 were used to analyze and validate the developed research model.
The hypotheses of the research are the direct relationships between the eight constructs in the proposed model as displayed in Figure no. 1. This set of hypotheses addresses the relationship between independent variables in the proposed research model: PE, EE, SI, FC, HTMHT and the dependent variables, BI and UB.

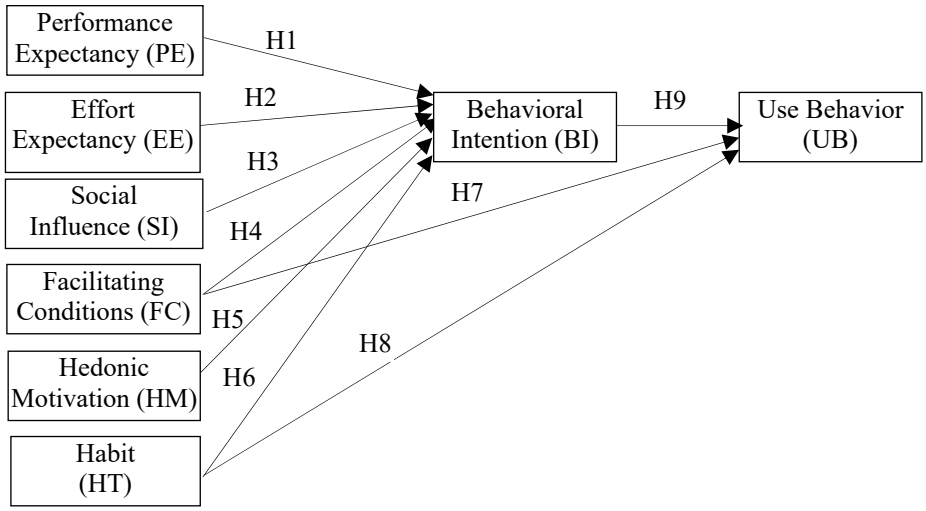

Fig. no. 2 Proposed theoretical model

Source: Adapted from: Venkatesh, Thong and Xu, 2012. Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. MIS Quarterly, 36(1), p.160.

The hypotheses of the proposed model were postulated as follows:

- **H1**. PE has a positive influence on BI to adopt cloud computing applications.
- **H2**. EE has a positive influence on BI to adopt cloud computing applications.
- **H3**. SI has a positive influence on BI to adopt cloud computing applications.
- **H4**. FC has a positive influence on BI to adopt cloud computing applications.
- **H5**. HM has a positive influence on BI to adopt cloud computing applications.
- **H6**. HT has a positive influence on BI adopt cloud computing applications.
- **H7**. FC has a positive influence on UB of cloud computing applications.
- **H8**. HT has a positive influence on UB of cloud computing applications.
- **H9**. BI has a positive influence on UB of cloud computing applications.

3. Findings and Discussions

A total of 265 students following bachelor programs from a public university in Romania participated in this study. The results of the survey study revealed that the participants' age ranged from 18 to 33 with a mean age of 20.48 and a standard deviation of 1.422 years. Most of the students were female (64.2%). A third of the respondents (33.2%) were first year students, a quarter (26%) was second year students and the rest (40%) were third year

students. Among all participants, 9.1% declared that they working full time, 26% working part time and 64.9% were unemployed.
Before completing the questionnaire survey, 3.4% of the participants have never heard about cloud computing applications such as Google Drive and G Suite (Docs, Sheets and Slides) and 21.9% of them have heard about it but have never used it. The majority of the respondents (59.6%) use sometimes cloud computing applications and 15.1% use it on a regular basis.

Table no. 1 shows the results of Confirmatory Factor Analysis (CFA) performed to test the model's validity and reliability.
Cronbach's alpha (CA) was used to tests the internal consistency each construct included in this proposed research model. Cronbach's alpha value greater than 0.70 shows that all UTAUT2 constructs have reached a good internal reliability (Taber, 2017).

Table no. 1 Reliability and Validity of the Constructs

Constructs	Cronbach's Alpha (CA)	Composite Reliability (CR)	Average Variance Extracted (AVE)
PE	0.812	0.877	0.641
EE	0.849	0.898	0.688
SI	0.737	0.838	0.569
FC	0.719	0.826	0.543
HM	0.843	0.894	0.68
HT	0.85	0.899	0.69
BI	0.878	0.916	0.732
UB	0.800	0.869	0.624

Convergent validity of the constructs was measured by the Average Variance Extracted (AVE) and Composite Reliability (CR). The acceptable threshold for AVE is 0.50 and for CR 0.70 (Fornell and Larcker, 1981; Bagozzi, 1981). Table 1 show that the AVEs and CRs values for each of the eight constructs of the model exceeds the minimum thresholds indicating high convergent validity.
To evaluate the discriminant validity, the square root of AVE of each latent construct have to be compared with its inter-construct correlation. According to Fornell and Larcker (1981), the AVEs square root should be higher than to the correlation between the constructs in order to satisfy discriminant validity requirement. As shown in Table no. 2, all square roots of the AVEs (in the diagonal) are higher than the correlations between constructs and that indicate adequate discriminant validity of the measurements.

Table no. 2 Discriminant Validity Results

	PE	EE	SI	FC	HM	HT	BI	UB
PE	0.800							
EE	0.449	0.83						
SI	0.495	0.333	0.754					
FC	0.418	0.567	0.410	0.737				
HM	0.416	0.348	0.451	0.274	0.825			
HT	0.428	0.336	0.563	0.299	0.587	0.831		
BI	0.523	0.464	0.577	0.506	0.575	0.645	0.855	
UB	0.353	0.257	0.472	0.323	0.376	0.409	0.464	0.791

Structural equation modelling (SEM), a statistical methodology based on latent variable theory, was used to test the modified UTAUT2 model. SEM provides a basis for hypothesis testing by estimating path coefficients of the fundamental links of the linear relationships among observed and unobserved variables (Byrne, 2001).
Before testing the hypotheses, the proposed structural model was assessed using the goodness-of-fit tests. According to Hair et al. (2014), using three to four fit indices provides adequate evidence of model fit. Three model fit indices were used to determine the overall quality of the model's fit: the ratio of goodness of fit to degrees of freedom (χ^2/df), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA). Table no. 3 shows that the values of the model fit indices for the proposed model was in an acceptable range (Hair et al., 2014; Hooper et al., 2008).

Table no. 3 Fit indices for the proposed structural model

Model fit indices	Recommendation	Structural model
χ^2/df	<3.00	1.826
CFI	>0.90	0.912
RMSEA	<0.08	0.056

The values of the standardized path coefficients for the direct relationships in the structural model are illustrated in Figure no. 3.

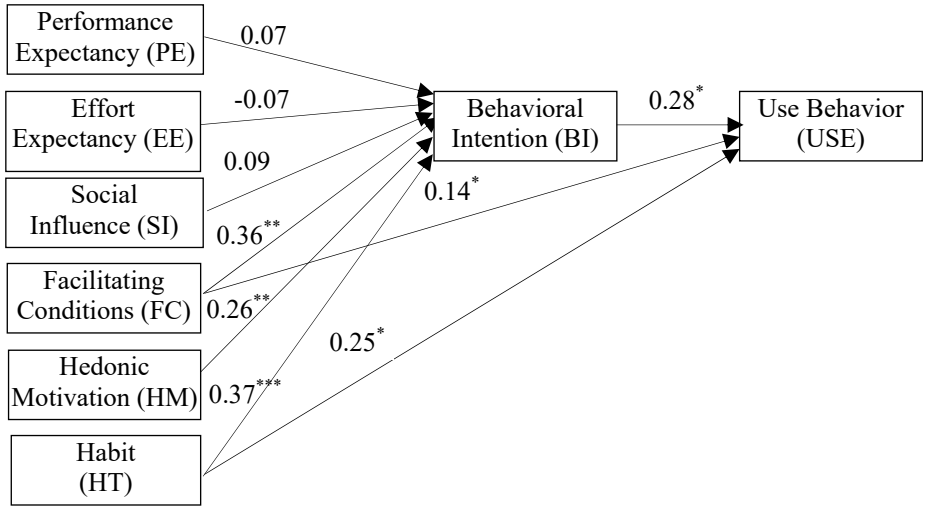

Fig. no. 3 Standardized path coefficients

The results of the final structural model show that the performance expectancy (PE) construct did not significantly influence the behavioral intention (BI) construct (β=0.07, n.s.), thus H1 was not supported. Second, effort expectancy (EE) did not significantly influence the behavioral intention (BI) construct (β = -0.07, n.s.), thus H2 was not supported. Third, social influence (SI) did not significantly predict behavioral intention (β =0.09, n.s.); therefore, H3 was not supported. Fourth, facilitating conditions (FC) positively influenced behavioral intention (BI) construct (β =0.36, $p < 0.01$), thus providing support for H6. Fifth, hedonic motivation (HM) positively influenced behavioral intention (β =0.26, $p < 0.01$) therefore, H5 was supported. Sixth, habit (HT) positively influenced behavioral intention (β =0.37, $p<0.001$), thus providing support for H6. Seventh, facilitating conditions (FC) positively influenced use behavior (UB) construct (β =0.14, $p < 0.05$), thus providing support for H7. Eighth, habit (HT) positively influenced use behavior (β =0.25, $p < 0.05$),

thus providing support for H8. Lastly, behavioral intention (BI) positively influenced use behavior ($\beta = 0.28$, $p < 0.05$).

Conclusions

Cloud computing applications provide users access, edit and synchronize their documents, spreadsheets and other digital resources anytime, from anywhere, and using any device. This study adopted the UTAUT2 model to determine the factors influencing Romanian students' behavioral intention and use of cloud computing applications.

The results of the empirical research reveal that six out of the nine relationships between independent and depended variable were supported. The most important factors explaining cloud computer applications adoption and use were facilitating conditions, hedonic motivation and habit. Surprisingly, the other three factors, performance expectancy, effort expectancy and social influence seem to be insignificantly associate with the intention to use cloud computing applications.

The findings of this research have several limitations because the sample size was limited and was focused only on the students from The Bucharest University of Economic Studies. Future research should test the UTAUT2 model on a larger sample size including several types of users in order to provide a better understanding of cloud computing applications acceptance.

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SOCIAL MARKETING THROUGH VACCINATION CAMPAIGNS - A META ANALYSIS BASED EVIDENCE

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Abstract

The research methodology used is the meta-analysis, in order to make a synthesis of the studies on vaccination and prevention, so as to establish a global answer linked to the research field. For the studies' research phase, we analyzed the studies in the field of vaccination and prevention under the shape of review articles and research articles on Science Direct database. In the selection and inclusion phase, the main purpose is to eliminate the studies found that have no connection to the meta-analysis research problem and to retain only the studies closely linked to the selection criteria defined within the fist step.

Keywords

Vaccination campaigns; meta-analysis; health care prevention; immunization.

JEL Classification

I12; C00; H00

Introduction

Due to the fact that immunization saves lives, the article focuses on vaccination campaigns, as a way towards health prevention. The World Health Organization (WHO, 2019) revealed the fact that in 2017 *"the number of children immunized (116.2 million) was the highest ever reported"*. Since the year 2010 *"113 countries have introduced new vaccines, and more than 20 million additional children have been vaccinated"*. (https://www.who.int/campaigns/world-immunization-week/world-immunization-week-2019/key-messages, accessed 21.04.2019)

In this study, the interventions regarding vaccination campaigns and prevention have been analyzed. Thus, we have reviewed the most recent approaches in the field of immunization through vaccination as a way towards prevention.

The research methodology used is the meta-analysis, in order to make a synthesis of the studies on vaccination and prevention, so as to establish a global answer linked to the research field. For the studies' research phase, we analyzed the studies in the field of vaccination and prevention under the shape of review articles and research articles on Science Direct database. In the selection and inclusion phase, the main purpose is to eliminate the studies found that have no connection to the meta-analysis research problem

and to retain only the studies closely linked to the selection criteria defined within the fist step. Data extraction and analysis imply the access to complete information in order to include the article in meta-analysis.

Literature review

Immunization has always been *"the most effective public health measure to prevent disease"* (Ozisik et al., 2016), targeting *"a large number of healthy individuals"* (http://venice.cineca.org, accessed 30.03.2019).

Some authors argue that visual communications *"dominates every area of our lives"* (Barry, 1997) and visual messages *"are often inextricably linked with verbal ones"* (Kitch, 1997).

There were several adult vaccination campaigns during the years with the *"aim to raise awareness for adult vaccination and to understand the dynamics of the vaccination practices and the possible barriers against achieving targeted vaccination rates"* (Ozisik et al., 2016) There are also projections that indicate that the population over 60 years of age *"will be growing 3,5 times as rapidly as the total population"* (Ozisik et al., 2016) by 2025-2030. The ageing of population is an important issue, because of the increase in hospital admissions and the costs associated with the treatment. However, the childhood vaccines are not enough to assure the lifelong immunization, because childhood vaccines *"decrease with age and this phenomenon is called immunosenescence"* (Lang et al., 2011)

Research methodology

Meta-analysis is a method consisting of the following stages: *"studies' research, selection, data extraction and analysis"* (Meghisan and Burger-Helmchen, 2017)

In the current study the research problem consists in determining the connection between the vaccination campaigns and prevention, using as bibliographic research the Science Direct database. In the first research phase, there were found a number of 9120 studies: review article (1266); research article (4183); encyclopedia (235); book chapters (905); conference abstracts (321); book reviews (43); case reports (5); conference infos (132); correspondence (157); discussion (672); editorials (191); mini reviews (66); news (234); patent reports (4); practice guidelines (13); product reviews (1); short communications (260); other (432).

In the selection and inclusion phase, there were found 2230 review articles and research articles published within the period 1995-2019 in the following main publications: *"Vaccine"* (1267 studies); *"The Lancet"* (253 studies); *"Social Science & Medicine"* (197 studies); *"Public Health"* (141 studies); *"Preventive Veterinary Medicine"* (108 studies); *"The Lancet Infectious Diseases"* (86 studies); *"American Journal of Preventive Medicine"* (80 studies); *"International Journal of Infectious Diseases"* (69 studies); *"American Journal of Infection Control"* (59 studies); *"Health Policy"* (56 studies) etc.

Of the full-text studies considered, a number of 17 met the established criteria: influenza vaccination campaigns (7 cases); measles and rubella vaccination campaigns (8 cases); HPV vaccination campaigns (2 studies).

Results

Influenza vaccination campaigns. Influenza is defined as a *"contagious viral respiratory infection"* (https://ecdc.europa.eu/sites/portal/files/documents/seasonal-influenza-antiviral-use-2018.pdf, accessed 04.04.2019). The main tool to protect people at higher risk (children and population aged 65 and over) is vaccination, more than ever now, when we *"are confronted with the aging population phenomenon"* (Cristea et al., 2016).

For most of the European Union countries, the vaccination against influenza of population aged 65 and over registered a decreasing trend in 2016 compared to 2008. The countries with the most significant decrease are: Romania (from 48,70% in 2008 to 7,80% in 2016);

Croatia (from 46,00% in 2008 to 21,00% in 2016); Slovakia (from 35,50% in 2008 to 13,30% in 2016); Hungary (from 37,80% in 2008 to 19,88% in 2016); Sweden (from 65,80% in 2008 to 49,10% in 2016). (Fig. no. 1)

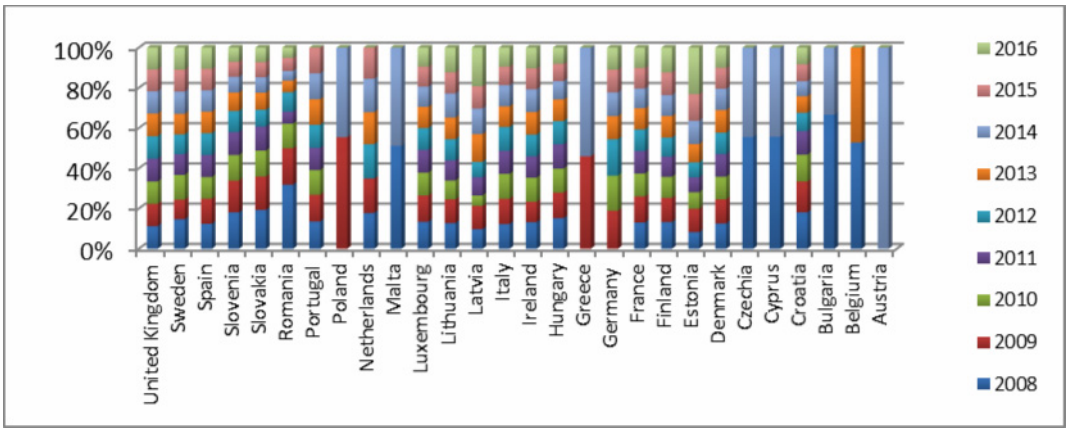

Fig. no. 1 Vaccination against influenza of population aged 65 and over (2008-2016)

Source: EUROSTAT, 2019

https://ec.europa.eu/eurostat/web/health/data/database?p_p_id=NavTreeportletprod_WAR_NavTreeportletprod_INSTANCE_HBRnpDQkQkPD&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-2&p_p_col_count=1, accessed 12.04.2019

One of the main explanations for the low rates of vaccination is vaccines miss-trust. A *"review of flu vaccination recommendations in the European Union and five Member States (Austria, Germany, Malta, Ireland and United Kingdom)"* (Wiebke Ohlrogge and Suggs, 2018) underlined that all the states had a recommendation for flu vaccination as a primary protection tool, by 7 websites and 42 communication materials, stressing the benefits of vaccination. However, the approaches are different regarding the type of information emphasized.

Llupia et al. (2013) conducted a study on the importance of influenza vaccination coverage among heath care workers from Hospital Clinic of Barcelona, as a goal towards preventive medicine in Spain. The data sources came from: self-administrated survey based on a Likert scale in order to assess the attitude towards the promotion of influenza vaccination and the risks of influenza. However, the results underlined *"the impact on the strategic objectives, but not an increase in coverage"* (Llupia et al., 2013).

Kim and Yoo (2015) examined the potential effectiveness of a television campaign to increase vaccination against influenza among elderly people in U.S.A. They developed *"a decision-analytical model to evaluate a hypothetical nationwide TV campaign to promote seasonal influenza vaccination among the US medicare elderly"* (Kim and Yoo, 2015). According to the results, the nationalwide TV campaign for seasonal influenza vaccination increased the number of vaccinated elderly people and the authors underlined that this type of TV campaign was concluded to be cost-effective.

Borgey et al. (2019) conducted a study on an influenza vaccination campaign of elderly people from nursing home in Basse-Normandie region, France. The campaign on influenza vaccination was *"offered to staff, combining different teaching aids in a multimodal approach"* (Borgey et al., 2019) After the campaign, the stuff was asked to fill in a questionnaire regarding their perception on influenza vaccination. Initial vaccination rates were 27,6% in the intervention group and 24,2% in the control group, with new rates to 33,7% and 22,9%, respectively, after the campaign. The authors revealed the overall positive effect of promotional campaigns in increasing the rate of influenza vaccination.

Wu et al. (2014) conducted a study on the impact of mass vaccination campaign against influenza in Taiwan on *"34359 medically attended patients who displayed an influenza-like illness and had a rapid influenza diagnostic test"*. According to the results of the regression model employed, the prediction was of five-fold or more influenza positive cases if *"the mass influenza vaccination program had not been implemented"* (Wu et al., 2014), with emphasize on prioritizing school-aged children, more than older adults.

However, not all the vaccination campaigns had success. An example is the vaccination campaign against A (H1N1) influenza in pregnant women in France. Blondel et al. (2012) conducted a research on 13453 women who gave birth in March 2010, who were interviewed in hospital before discharge. The *"vaccine coverage was 29,3%"* and the main reason for not being vaccinated was *"that women did not want this immunization (91%)"*. (Blondel et al., 2012) However, the vaccination was favorable in women *"who were older, employed, born in France"* (Blondel et al., 2012). One of the main justifications for the vaccination campaign failure was that the *"initiative for vaccination was left mainly to women" "* (Blondel et al., 2012).

Measles and rubella vaccination campaigns. Several studies underlined the *"beneficial non-specific effects of measles vaccine"* (Byberg et al., 2017). For most of the European Union countries, the total confirmed measles cases registered a decreasing trend in 2019 compared to 2018. The most significant decrease was for the following countries: France (from 1913 cases in 2018 to 313 cases in 2019); Italy (from 2686 cases in 2018 to 332 cases in 2019); Greece (from 2193 cases in 2018 to 3 cases in 2019); Romania (from 1471 cases in 2018 to 336 cases in 2019); United Kingdom (from 953 cases in 2018 to 106 cases in 2019). (Fig. no. 2)

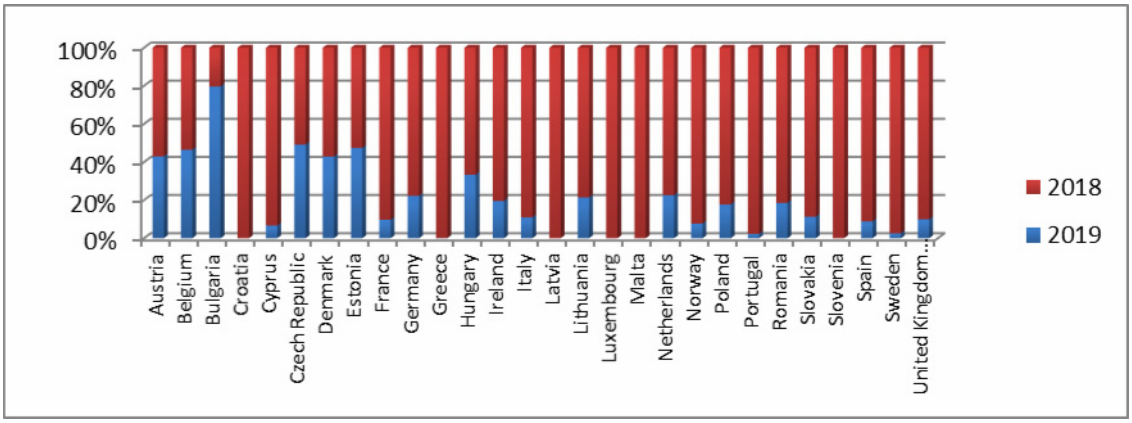

Fig. no. 2 Total confirmed measles cases (2018-2019)

Source: World Health Organization, 2019, https://www.who.int/immunization/monitoring_surveillance/burden/vpd/surveillance_type/active/measles_monthlydata/en/, accessed 01.04.2019

For the EU countries, the total confirmed rubella cases registered a decreasing trend in 2019 compared to 2018. The most significant decrease was for the following countries: Poland (from 450 cases in 2018 to 69 cases in 2019); Germany (from 58 cases in 2018 to 6 cases in 2019); Italy (from 21cases in 2018 to 4 cases in 2019); Spain (from 13 cases in 2018 to 3 cases in 2019); Austria (from 6 cases in 2018 to 1 case in 2019). (https://www.who.int/immunization/monitoring_surveillance/burden/vpd/surveillance_type/active/measles_monthlydata/en/, accessed 01.04.2019)

In Eastern and Southern Europe, measles epidemic started in 2009 with thousands of cases, some of which resulted in the death of the persons (Ozisik et al, 2016), due to *"measles outbreak in a vaccine-rejecting community"* (Menach et al., 2014). Menach et al. (2014)

counted the number of measles-mumps-rubella (MMR) doses administrated in 2011 and made a comparison to the 2008-2010 data, based on: an accelerated children vaccination campaign earlier than scheduled (1st dose at 6-11 months and the 2nd dose at 18-19 months) and *"catch-up of those aged over 18 months who had no MMR immunizations or were late for second MMR"*. The results underlined the fact that *"local practice administrated 257 MMR doses in 2011, a 114% increase on average for 2008-2010"* (Menach et al., 2014).
Zang et al. (2017) made a research for the period 200-2014, on identifying risk factors for measles epidemic and evaluating the impact of measles-containing vaccines in China. The main goal of this analysis was to provide *"evidence-based recommendations for measles elimination strategies"* (Zang et al., 2017). According to the results of the study, there was a decrease in measles cases due to a series of strategies implemented by China and the cases of measles mostly occurred in individuals that were not vaccinated. The results also underline other studies' results, emphasizing that: *"hospital exposure to measles virus 1-2 weeks before onset of measles rash and fever is the main cause of measles outbreaks"* (Zheng et al., 2015; Wang et al., 2014); patients, *"with recent recent history of hospital exposure, in contact with people infected with measles or that travel to other cities, were at risk for contracting measles"* (Zhang et al., 2014). Other studies conducted in Guangdong Province of Chine revealed that after the vaccination campaign against measles (May-December 2009) of 98,09% of children and 97,32% of migrant children, the number of measles cases *"was reduced by 93,04% compared with the same period of 2008. The antibody positive rate in children aged less than 15 years reached above 95%"* (Peng et al., 2011). A case-control study conducted in China by Hao et al. (2015) during 2012-2013 had the purpose to identify risk factors for measles infection in children aged between 8 months-14 years old. According to the results based on the *"multivariable analysis, lack of measles vaccination [...], hospital exposure and migration among countries were significant risk factors. The calculated vaccine efficiency was 91,9-96,1% for a single dose and 96,6-99,5% for 2 doses"* (Hao et al., 2015).
Byberg et al. (2017) compared mortality rate of the children one year after December 2012 measles vaccination campaign in Bissau city. The results of the studies revealed that a number of *"5633 children aged 9-59 months (85%) received campaign measles vaccination and 1006 (15%) did not. During the subsequent year 16 children died"*. (Byberg et al., 2017) The conclusion of this research underlines the importance of measles vaccination campaign as a possible effective way of improving child survival. Other studies conducted by Nigatu et al. (2008) evaluated the measles vaccine campaign from December 1999 on 745 children aged 9 months to 19 years in Asela, southern Ethiopia, by analyzing the measles antibody status by microimmune measles IgG enzyme immunoassay, based on the premises that *"measles vaccine campaigns are increasingly integrated into national or sub-national measles control programs"* (Nigatu et al., 2008). The results of this study underlined the fact that the campaign vaccination *"elevated immunity in the target ages by between 30% and 50% according to age group, or an average of around 40%.* (Nigatu et al., 2008) Goodson et al. (2009) assessed *"the impact of measles outbreak response vaccination campaign"* in Tanzania. The results underlined that the ratio of measles incidence rates *"in age groups targeted and not targeted by outbreak response vaccination (ORV) campaign decreased from 5,8 prior to ORV to 1,8 (p<0,0001)"* (Nigatu et al., 2008)
In another study there was emphasized the importance of measles-rubella or measles-mumps-rubella vaccine within the childhood national immunization campaigns and programs. The main purpose of this study was to evaluate the rubella vaccine immunization for susceptible population (immunoglobulin IgG). The results of this research revealed that *"98% of susceptible group (723 out of 738) acquired immunity against rubella after vaccination and 2% of them (15 out of 738) did not acquire vaccine-induced immunity to*

rubella" (Hamkar et al., 2006) and thus, it was considered that mass vaccination from December 2003 from Iran had a proper immune coverage among vaccinated persons.

HPV vaccination campaigns. The European Union countries with the highest incidence estimation of cervical cancer cases attributable to HPV at the level of the year 2018 are: Latvia (25%); Estonia (22,5%); Bulgaria (20,30%); Romania (19,50%); Lithuania (18,90%). (Fig. no. 3) However, cervical cancer attributable to HPV is the second type of cancer after breast cancer that affects women aged between 15-44 years old. (https://ec.europa.eu/health/vaccination/hpv_ro, accessed 31.03.2019)

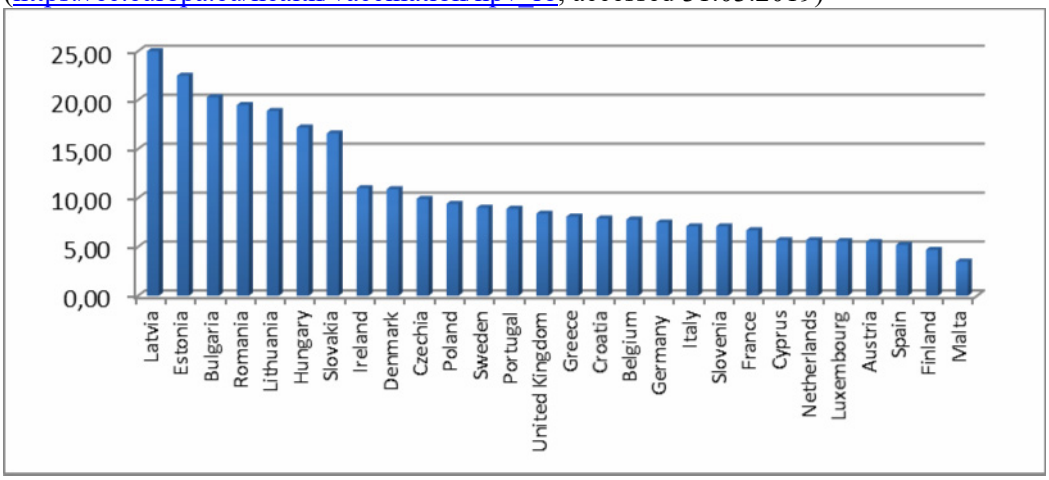

Fig. no. 3 Age-standardized incidence rate of cervical cancer cases attributable to HPV by country in European Union countries (estimates for 2018)

Source: https://www.hpvcentre.net/statistics/reports/XEX.pdf?t=1556005480638, accessed 01.04.2019

According to the Centers of Disease Control and Prevention, the proper age for vaccination is between 11-12 years old, but the HPV vaccinations *"can still be given to women and men through age 26"* (https://www.cdc.gov, accessed 23.03.2019).

Chadenier et al. (2011) performed a study that investigated *"the compliance to the first vaccination campaign"* (Chadenier et al., 2011), in the province of Milan between December 2008- December 2009. According to the results of the research, the *"knowledge about HPV among mothers went from 63% to 76% after vaccination"* (Chadenier et al., 2011). However, after the first round, 55,3% of the girls born in 1997 got vaccinated; 54% of them received the second dose, while 49,9% of them received the third.

Avery and Park (2018) analyzed the impact of visual flyers with pictures of HPV virus, with the text: *"Human Papillomavirus (HPV) is the most common STD in the United States [...] There is a vaccination to prevent it. Talk to your doctor and get vaccinated today"*. Visual attention was measured in seconds *"within the three areas of interest (AOIs) created by the researchers: one of the picture, one for the text above the picture, and one for the text below the picture"* (Avery and Park, 2018). According to the results *"fear appeals on behavioral intent to HPV vaccination"* (Avery and Park, 2018).

Conclusions

Using social marketing to create vaccination campaigns, we could see that most of the times the success of a campaign goes beyond its message and materials in its influence on the perceptions and attitudes of the target. From the four categories of marketing mix elements, Promotion is the most used element for a vaccination campaign. However, social marketing techniques employed in designing immunization campaigns are closely connected to the cost economy generated by preventive actions in health field. In conclusion, a summary of

the main areas of vaccination campaigns and prevention was provided. The importance of this article comes from its utility for vaccination advocates and policy makers, together with researchers, as well, for further analysis.

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SUSTAINABLE STRATEGIES OF INTERNATIONAL RETAILERS IN ATTRACTING YOUNG CONSUMERS (GENERATION Z)

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Abstract
From the organizations which come into direct contact with consumers, retailers stand out, permanently militating for the implementation of the principles of sustainable development within all the adopted strategies, the processes within the value chain and the carried out activities. The true "professionals" in transposing the principles of sustainability within their own processes are the Do-It-Yourself (DIY) retailers. The DIY field has experienced a strong development especially in the emerging countries, due to the individuals' desire to build, decorate or repair parts from a lodging without soliciting any professional help in the field, but also due to obtaining some important financial savings. Starting from the generational theory which anticipates the possibility to delimitate consumers according to their birth year, considering the description of the concept and of the dimensions of sustainability, the authors have been examining the sustainable measures and strategies to which the Romanian DIY retailers resort in order to attract, maintain and enhance loyalty.

Keywords
Sustainability; retail; young consumers; Generation Z; tripple bottom line

JEL Classification
L81; M30; Q01; Q56

Introduction

During the last years, sustainability has become an ample subject, analysed by specialists in different fields and sectors (Dabija & Băbuț, 2013; Olah et al., 2017a; Bernyte, 2018). The pollution effects have become increasingly visible with the development of the society and the advancement of the manufacturing and processing technologies, as well as with the global population growth. Thus, the concept of sustainability has been developed, which currently includes the organizations' proactive orientation towards environmental protection, society, namely employees, aspects which constitute "the triple bottom line" (TBL). The concept refers to the "simultaneous pursuit of economic prosperity, environmental quality, and social equity" (Elkington, 1999; Baillie & Jayasinghe, 2017). *Environmental sustainability* is the premise from which all the organizations start, and which governs the activity developed by them (Bekele et al., 2012; Olah et al., 2017a; Olah et al., 2017b). *Social Responsibility* is frequently associated with corporate social responsibility (CSR), representing the link bridge between organization and society. The last dimension, economic sustainability, is analysed not only from the internal situation

perspective of the company, but also from the perspective of the impact carried by the organization on the national economy level (Elkington, 1999).
The DIY retailers' favourite segment is represented by the youth – the Millennials and the Generation Z, who are at the beginning of the road, seeking to lay out their homes or to build new ones. Compared to their parents and grand-parents, they highlight a pronounced predisposition towards green, nature-friendly products, manufactured in accordance with the principles of sustainable development (Morgan & Birtwistle, 2009). Thus, the DIY retailers are seeking to adapt themselves to the exigencies of this client segment, because, by their early attraction and satisfaction, they can consolidate their relationship, generating their future attachment and winning their loyalty (Dabija & Bejan, 2018; Dabija et al., 2019).
Relying on the generational theory (Williams & Page, 2011), according to which individuals can be divided into homogeneous segments depending on their birth year, the authors approach an emerging marketing within the DIY retail, the strategies, the actions and the sustainability tactics implemented by retailers when they want to approach these target segments. The Romanian Zers are no longer strongly differentiated from the peers from other similar markets, which allows us to focus the research on this emerging market. Furthermore, the DIY retailer in Romania has experienced a solid and accentuated development within the last years on the considered market (Șerban, 2012), the used strategies being able to represent a benchmarking for also processing other similar markets.
After a presentation of the principles and dimensions of sustainable development in general, and their particularization in retail (in the second section of the article), the authors present, in the third section, the manner in which sustainability represents an important method in the selection of retailers by the Generation Z. The fourth section presents the context of research and the method of selecting the DIY retailers from the considered emerging market, so that the fifth section deals with several actions, tactics and strategies of the DIY retailers in attracting, maintaining and enhancing the loyalty of the sustainable oriented consumers. The present paper concludes with theoretical and managerial implications.

2. Sustainability: dimensions and relevance

The implementation of the principles of sustainable development in the activities performed by organizations can be owed to some endogenous factors (leadership style, productive processes, employees etc.), but also to exogenous ones (legislation in force, stakeholders, local community, etc.). Irrespective of the determinant driving force, it is relatively difficult to predict the organization's preferred method in the implementation of a sustainability strategy, as well as the level, namely the depth to which the organization will resort in pursuing it (Kallmuenzer et al., 2018). Sustainability is considered to be the process or the activities through which the needs of the current generations are being satisfied, without compromising the access of the future generations to the same resources, namely to the possibility of satisfying one's own needs in similar conditions (WCED, 1987; Dabija & Băbuț, 2013). Thus, sustainability is applied to all organizations, regardless of sector and/or the field of activity. Ever since the occurrence of this report, the specialists (WCED, 1987) considered that the effectiveness of solutions and their global success in combating pollution can be guaranteed via international cooperation, which allows for and even secures an economic and ecological interdependence. A first step in the practical transposition of this objective is represented by the trust of the companies and individuals in international institutions, specialized in the application and implementation of these principles. Even if, at the beginning, the sustainability principles were applied by a reduced number of organizations, with the time, their number and, mostly, their importance have increased, nowadays (Sharma & Sharma, 2011) being almost inconceivable for an organization to not appeal to at least one measure or action which can be circumscribed to sustainability.

The organizations' implementation of the principles of sustainable development which urge not only to moderation concerning the consumption of resources, but also to their as efficient as possible use, with substantial savings (Nevado-Peña et al., 2015), is becoming less and less feasible, due to the global economy tendency towards the acceleration of resource consumption and even towards overconsumption (Cobbing & Vicaire, 2017). In fact, in 2018, the annually regenerated resources of the planet had been fully consumed at the beginning of August, and from that moment to the end of 2018, humankind has been living on debt. It is estimated that in 2018, humankind would have needed 1.7 planets to exist (Global Footprint Network, 2019). In these conditions, due to the organizational behaviour, but also to the individuals' attitude, resource consumption, pollution and its negative effects have become increasingly visible, their consequences affecting the society in an increasingly powerful manner. When adopting an active behaviour concerning the control of pollution, the principles of sustainability are found in the vision and the general business strategies adopted by organizations, being often transposed into the implemented activities and the provided deliverables. On the other hand, consumers become more and more aware of the global distress menacing their existence and which will mostly affect their followers, thus determining them to change their behaviour, to orient themselves towards sustainable consumption and/or to prefer green products, even if they have to pay for a premium price in order to possess and/or to use them (Young et al., 2010; Dabija et al., 2018). Understanding consumers' expectations and claims, adapting to them via the provided services and products, the organizations delight and satisfy their clients, enhancing their loyalty in the long run (Dabija & Bejan, 2018). When they have to choose between the retailer who will provide them the most suitable deliverables, accomplished on similar principles with their beliefs and desires, namely the one who has deceived their expectations, has used deceitful advertising or has just claimed the sustainable orientation without also transposing it into the intra-organizational processes, the clients will prefer those who truly do as they promise (Dabija & Bejan, 2017; Dabija, 2018).

Within the general business strategies, retailers more and more frequently resort to measurers which envisage the sustainable behaviour and the responsible use of resources. The necessity of this behaviour resides from the fact that, during the last 100 years, companies have exponentially diversified the provided deliverables, using larger and larger quantities of resources within the productive processes, which necessitates the responsibilization of their consumption (WCED, 1987). For example, in fashion, clients purchase with 60% more clothing articles as compared to year 2000, their usage time being halved (Cobbing & Vicaire, 2017). Until 2030, it is predicted that the number of the purchased clothing articles will have risen by 63%, reaching about 102 million tons as compared to 62 million tons/annually at present (Seara et al., 2017).

Thus, sustainability does not represent only a simple means to obtain the clients' loyalty, the implementation of sustainable principles within the retailers' business strategies being considered not only a means to obtain a competitive advantage, but also to influence society, contributing to the enhancement of the individual care addressing the environment (Ruiz-Real et al., 2018; Wiese et al., 2015). Retailers more and more frequently select suppliers and other partners according to the sustainability degree of implementation and to the environmental reporting degree within processes (Dabija & Bejan, 2018). Via the provided products and the information exposed on the packing, alongside social responsibility campaigns, retailers also inform and convince consumers to rally to the socially responsible consumption, environmental protection, to modify their consumption habits, adopting a green attitude towards nature and becoming involved in its protection (Durieu, 2003).

Individuals have the tendency to purchase those articles which best fit their self-image shaped by them, appreciating their contribution to enhancing the prestige and/or the personal reputation among fellowmen and peers (Solomon, 2017). Thus, the inclination

towards a sustainable behaviour is mostly reflected via articles included by the individual in his/her shopping basket. The consumers' demand for sustainable products compels the retailers to get seriously involved in conceiving attractive and well-targeted offers, and also in social responsibility campaigns. Individuals appreciate the sustainable character of the entire activity performed by organizations. Understanding the relevance of these aspects on a managerial level, numerous DIY retailers (for e.g.: IKEA, Jisk, Brico Dépôt, etc.) have created a "Code of Conduct", regulating the relationships between company and stakeholders. Concerning the suppliers, the origin of the materials or the forms in which the raw materials used in the production processes are cultivated or sampled, are usually mentioned. Concurrently, this can establish the rights and responsibilities of the employees, highlighting the work conditions which must be fulfilled (IKEA, 2010). Many retailers adopt codes of conduct which forbid the employees' exploitation or child labour in manufacturing goods, but also any type of ethnic, religious or gender discrimination, etc. (IKEA, 2010).

3. Sustainable orientation of young people

Changing consumer preferences and individual habits is reflected in their demands not only towards the producers, but also towards the retailers, as a consequence of their work involvement and of enhancing the purchasing power. Specialized literature divides the consumers according to their birth year during different generations, relying on the fact that people who have grown up in similar social, cultural, economic and environmental conditions will highlight, in their adult years, close behaviours, preferring the organizations in compliance with those values which are representative for them (Viswanathan & Jain, 2013; Valentine & Powers, 2013; Dabija et al., 2018). Among the generations of young consumers, there can be distinguished the Millennials or the Generation Y and the Generation Z (Young, 2015; Dabija et al., 2019).

The Generation Y, the Millennials or the Echo Boomers are individuals born between 1980 and 1994 (Williams & Page, 2011), their existence happening in an age characterized by technological development, and in which the access to products was unlimited regardless of the country of provenance, the geographical boundaries being overcome. For companies, the Millennials represent a market with a high approach potential, due to the fact that, on a global level, the number of people who fall into this segment is very high (Viswanathan & Jain, 2013; Young, 2015; Dabija et al., 2018). Globally speaking, it is estimated that their annual purchasing power is over $ 170 billion (Cheung et al., 2008; Loroz & Helgeson, 2013; Young, 2015). The Millennials are willing to pay a higher price for the green products, due to their desire to reduce the effects of pollution and to make a positive contribution to the protection of nature (Dabija et al., 2018).

The members of the Generation Z (iGeneration, Echo Bloomers) are born between 1994 and 2010 (Williams & Page, 2011), continuing to represent a challenge for the marketing specialists. Compared to the Millennials, the iGeneration has a much higher potential purchasing power, due to the fact that, globally speaking, they are more numerous than their predecessors, and also, to the fact that, since teen age, they have got used to purchasing different goods, services and brands (Saha & Darnton, 2005). Unlike the Millennials, the Echo Bloomers are actively involved in social life, appreciating companies which help the communities and organize social responsibility campaigns (Dabija et al., 2019). Their behaviour is a proactive one and they are permanently analysing the consequences of their actions. Similarly, the Millennials and the Zers are willing to pay premium prices for green products, thus estimating that they can bring a favourable contribution to the mitigation of impact and negative consequences to which the environment is being subjected (Wellner, 2000).

The involvement of the Millennials and the Zers in the social responsibility campaigns and the adoption of habits which are subordinated to the principles of sustainability determine the retailers to become aware of the fact that they represent the target segments to which they ought to address. Concurrently, the purchasing power of this target segment, as well as their very significant physical number, represent vectors which inspire the DIY retailers to conceive special offers and to address them in a very targeted manner.

Methodology of research

In order to highlight the measure in which the DIY retailers apply the sustainability principles in the implemented general business strategies, namely in conceiving a deliverables offer addressing the younger generations, it has been necessary to study the information posted by them on their web pages, namely the ones available in different specialized journals. There have been selected the DIY retailers with relevant activities in Romania (Dabija & Bejan, 2018): Leroy Merlin; IKEA, Jysk, Hornbac, etc.

Results

The implementation of the sustainability principles within their business strategies plays an important role for many DIY retailers. Leroy Merlin, part of the ADEO group, present in over 12 countries, grants special attention, within the sustainability strategy, to the personal and professional development of employees (social orientation), and their satisfaction throughout the collaboration represents a vital element in obtaining success (ADEO.com, 2017). In Spain, the company has made increased efforts to prevent the employees' fluctuation, periodically organizing events dedicated to this aspect (ADEO.com, 2017). Leroy Merlin respects the employees' rights, offering proper labour conditions for them and periodically organizing training courses (Top-Employers Institute, 2017), namely facilitating the experience exchanges between the employees from different states. For HORNBACH, the employees are the main resource which contributes to acquiring market success. Even if employees come from different countries, they are provided with an internal code of conduct, through which competence, team spirit and desire to learn are being promoted (HORNBACH, 2015). Since 2008, through "The Diversity Charter" or the employees' code of conduct, they are guaranteed the proper work environment, according to the regulations in force. This presupposes avoiding the employees' discrimination and forbids any kind of differentiation on ethnic, religious or disability criteria (HORNBACH, 2015).

Laying the emphasis on the employees' personal life, and starting from the desire to ease their daily responsibilities, IKEA founded in Japan a childcare centre during work hours (IKEA.com, 2011). Encouraging involvement actions and measures in the local communities and in the social and environmental protection, IKEA has joined GSCP (Global Social Compliance Programme), which promotes the application of the sustainability principles in relation to all stakeholders (IKEA.com, 2010).

The Swedish retailer IKEA lays an increased emphasis on the importance of used raw materials, building its market success on the desire to offer deliverables to its consumers at attractive prices, thus enhancing the clients' satisfaction (IKEA.com, 2015). Ikea grants increased attention to suppliers, seeking to maintain high standards of implementation of the sustainability principles and of social responsibility within the value chain, from the production of different materials and parts, to selling articles via their own stores (IKEA.com, 2011). The IWAY code of conduct for suppliers implies that all IKEA collaborators guarantee decent conditions to employees, overtime payment, job security, elimination of discrimination, processing raw materials in order to mitigate their impact on the environment (IKEA.com, 2010).

The Jysk Group pays enhanced attention to the environment, and implicitly, to the social responsibility campaigns. Thus, they want an active involvement on behalf of the raw material suppliers. Since 2006, the Jysk group has joined the BSCI initiative (Business Social Compliance Initiative), which establishes an organizational code of conduct for suppliers in compliance with the sustainability principles (BSCI.org, 2015). The company also uses its ethical standard DIEH (The Danish Ethical Trading Initiative), via which the citizens' rights are encouraged, the companies developing sustainable businesses (DIEH, 2015). The raw material for the products sold by Jysk come from the FSC-certified woods (Jysk.com, 2016), which guarantees the fact that there have been cut down only trees which can be naturally replaced, without destroying the animal habitat (Jysk.com, 2016).
Most retailers only create a differentiation in offers, according to the organizational consumers, namely the individual ones. Only few of the DIY retailers effectively segment the market according to socio-demographic characteristics, such as age or gender. For example, due to the desire to enhance the attractiveness of offers among consumers, Leroy Merlin has been practising lower prices for retired persons, as well as for persons coming from the socially disadvantaged categories (Liciu, 2014). IKEA addresses not only individual clients, but also organizational ones, a favourite segment being represented by families, for whom there is a varied offer of products. Young people can subscribe to the newsletter, namely they can download the products catalogue from the retailer's web page (IKEA, 2016; Jysk, 2016; Dedeman, 2016).

Conclusions

Following and implementing the sustainability principles within the business strategies represents nowadays a desideratum which retailers cannot any longer abandon, if they wish to attract, and mostly, keep their clients. The orientation towards local communities, satisfying their needs, concluding partnerships with stakeholders based on rigorous standards concerning the environmental protection, imposing some codes of conduct on suppliers, but also on employees, the concern for the workers' rights, but also the involvement in social responsibility campaigns, represent relevant strategic vectors in building long-term relationships with the clients. The youth and the members of the generation Z are much more inclined towards the green values, the preservation of resources and the mitigation of consumption, practically wishing to bring their contribution to keeping the integrity of the society to which they belong. Without explicitly communicating to each generation, in part, all the performed sustainability efforts, the DIY retailers highlight an increased care for building a lasting organizational image among the target segments, through social, environmental, but also economic actions, each individual receiving, from his/her preferred retailer, those signals which are relevant and important for him/her. The clients' segmentation efforts, according to the generation to which they belong, are still at the beginning, the Romanian DIY retailers are already developing such a strategy.
Among the limits of research can be mentioned the fact that the actions and tactics of all DIY retailers from the analysed region have not been taken into consideration, as well as the fact that the presented measures refer sometimes to the whole group, not being able to obtain information concerning the specific actions in Romania. Future research could propose a detailed analysis of the DIY retailers' actions for the local market in connection with the international one, as well as building a scoring type of model for highlighting the most important such measures, in accordance with the spent budget, the involvement of the organization and/or the used resources.

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SUSTAINABILITY OF BITCOINS AND BLOCKCHAIN

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Abstract

Bitcoin is a digital currency proposed by a developer hided under the pseudonym *Satoshi Nakamoto* in 2009, and it is relied on a peer-to-peer payment system created as an open source software. It is relied on blockchain a distributed and democratically-sustained public register of the transactions. Bitcoin, as well as other digital currencies, has a lower transaction cost and greater security and scalability than fiat money and no need of a central bank. However, in the last years several researchers have relived environmental issues related to the use of this money. On the contrary, the relate technology of blockchain is recognizing as a significant tool contributing to create a more sustainable world. In this context, the purpose of this paper is to describe and evaluate the sustainability of the Bitcoin currency and the blockchain technology considering the environmental and social impacts due to energy consumption, market diffusion compared to fiat currency. Blockchain can reduce and accelerate bureaucracy processes as well as incentivize environmentally friendly behaviour. Under these perspectives, blockchain may show the full applicability of sustainability in the economic, environmental and social sectors.

Keywords

Bitcoin, sustainability, blockchain, energy consumption, cryptocurrency.

JEL Classification

O3

Introduction

Ten years ago, it has been proposed a new digital money created by a hided developer who named with a pseudonym *Satoshi Nakamoto*. This innovative currency bypasses the official way to produce and exchange money and uses a peer-to-peer payment system created as an open source software. At the base of the functioning of bitcoins there is the blockchain technology which generates a distributed and democratically-sustained public register of the transactions. In this way all peer-to-peer money transactions are registered and stored without any changing in a secure way with no need of a central bank. However, recently some scholars have underlined environmental issues related to the releasing of this money (Michel, 2015). On the other hands, they affirm that the relate technology of blockchain

could represent a significant tool contributing to create a more sustainable world. In this context, the aim of this paper is in the first paragraph to illustrate the functioning of this virtual money; while in the second to evaluate the Bitcoin and blockchain technology sustainability, the third part on discussion of the results. It is considered their environmental and social impacts due to energy consumption and market diffusion compared to fiat currency.

Bitcoin and blockchain technology

Bitcoin is the first application of the blockchain technology, which relies on highly secure cryptographic algorithms and sophisticated peer-to-peer technologies. The rate of emission of new Bitcoins or "Bitcoin mining", as it resembles the resource mining such as iron or gold ores, has an inflexible algorithmic limitation starting from 50 unities with an increase rate slowing down constantly: after the issue of 10.5 million Bitcoins, its emission rate will halve, after 15,750,000 Bitcoins, emission rate will halve again and so on, reaching a limited capped value of the total amount of 21 million Bitcoins. Nowadays there are 17,640,713 (April 11, 2019) Bitcoins mined (Karger, 1997). Every block introduces 50 new typologies of coins in the system a number halving about every 210,000 blocks, defining a geometric series which has a capped limit of 21 million of Bitcoins that can be created, following the equation (1).

$$N = \sum_{i=1}^{n} \frac{210{,}000 \times 50}{2^n} \quad (1)$$

In equation (1), N= cumulated number of Bitcoins at time n and the limit for n approaching $+\infty$ is equal to 21 million. Blockchain technology registers all the transactions among Bitcoins owners in its distributed database that holds historical transactional data shared by all nodes through a distributed consensus protocol (Bitcoin, 2019). The blockchain contains the entire history of bitcoin transactions and each node in the network stores a complete or partial copy of the database. New transactions are propagated across the nodes in the network as transfers from a source (input) to a destination (output). Transaction inputs and outputs are not connected to accounts or nor are balanced by a central server or database. Before forwarding a transaction to its neighbors, the node firstly checks the syntax and structure, and verify its validity. In other words, each node verifies the transactions received, propagates only valid transactions, building valid transactions pool. The validity of the transactions collected into a block is verified by computing a cryptographic hash of the block meeting certain constraints (based on the ideas of "Hash-cash"). This verification checksum for the block, is a one-way type as it is easy to compute a hash of a given block, but difficult to compute a block that matches a given hash, and collision resistant as it is difficult to find two blocks that yield the same hash. This work of finding a hash that meets the constraints imposed by the blockchain, is a compute-intensive task executed simply by a brute-force approach. The nodes compete in the network in finding a valid hash as the first node that finds a valid hash, wins the possibility to add the block to the blockchain and propagates the ledger to the network, and it is rewarded with new Bitcoins. The receiving node verify whether the hash is valid, but this task is quite easy and if successful, suddenly it stops the mining process and starts mining for a new block. The node that has verified the block receives a block reward, a certain number of new bitcoins. If multiple nodes simultaneously generate a valid block, a fork temporarily appears in the blockchain, but is resolved as soon as one of the forks contains more blocks and one branch does not receive the consensus of the other nodes. In this manner the computations to find and verify a cryptographic hash of a block during bitcoin mining allows the bitcoin network to gain consensus about the state of transactions (Vranken, 2018).

The question of consensus is crucial for the blockchain operation: the consensus of the blockchain network consists of achieving the unanimous confirmation of the verified transactions by the nodes involved in the blockchain network. An old verified transaction just confirmed will not be tampered with by malicious nodes. The consensus protocol of the blockchain technology consists in the Proof-of-work (POW) in which each node must solve a computationally difficult but easily verified SHA256 problem using its computational power, more simply the task consists in finding a suitable random number called "Nonce" such that the input to the block header metadata and Nonce is computed by SHA256 hash value twice in succession, and the result is less than the difficulty target set in the header of the block. The parameters of SHA256 hash function come from the block header metadata of the current block to be built. Due to the irreversibility of (twice) SHA256 hash, the node must pay enough computational power to perform this Nonce search to the result be as small as possible. The POW consensus induce reliable nodes to create a new block but at the expense of its computational power. A double-spending attack operated by a malicious node should take almost the 51% of the computational power of the entire blockchain network to get successful. For these reasons, bitcoin's mining computational power has surpassed some world's supercomputers, but although the raising of computational power threaten the stability and democracy of the network, the constancy of the mining rate is guaranteed by a mechanism of adjusting values of difficulty in searching with a brute-force approach the right hash for the consensus that operates every 2016 blocks, to ensure an average interval of 10 minutes between linked blocks. This is the mechanisms of the so-called proof of work POW and Bitcoin mining computational efforts caused by the POW mechanism has threatened to the decentralization of Bitcoin network. Researches in the field is directed to solve the issue of increasing computational power by introducing new but reliable consensus. As depicted blockchain technology is based on some core values: decentralization (it rely on a peer-to-peer network and there is no need of a central server), distributed consensus protocol, digital signature and cryptography based on asymmetric public key mechanism, timestamp, peer-to-peer transaction based on decentralized credit in distributed systems (there is no central server or point of control, and all nodes in the network are equal peers), so as to provide a solution to the "double-spending" and "Generals Byzantine" issues (Lamport, 1983; Fan et al. 2013; Fedotova and Veltri, 2006; Reischuk, 1985). Generals Byzantine is the name assigned to a condition of a computer network in which some of the nodes are malicious ones and insert unreliable information but the entire system must agree on a concerted strategy to avoid a system collapse, a situation that recalls that of the Byzantine generals whom treacherously reported false or erroneous news on war strategies to their colleagues. Figure 1 confirms the equation (1) as the cumulated Bitcoin mining, especially in more recent years follow a statistical distribution like the geometric one.

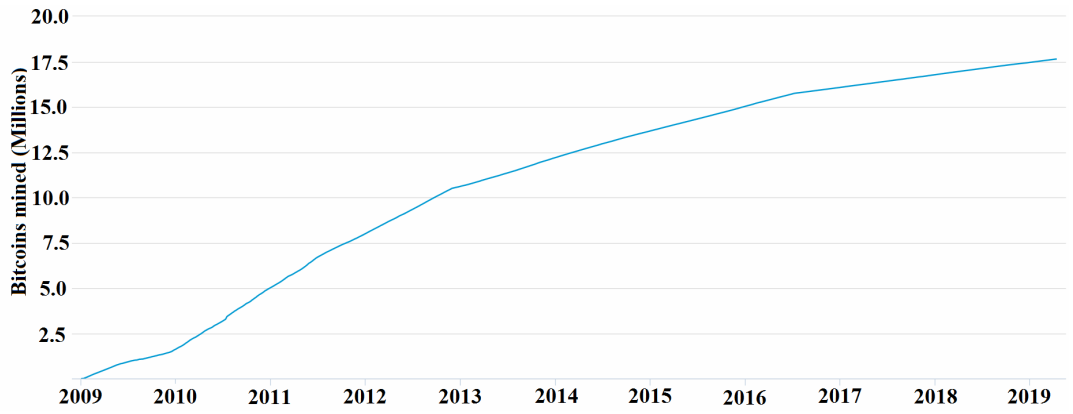

Fig. no. 1 Bitcoins mined (April 11, 2019).

Review of the scientific literature

According to Giungato et al (2017) the Bitcoin system is an environmentally unsustainable since it consumes high amount of energy to mine new cryptocurrency. The International Energy Agency (2017) estimates that the electricity use of Bitcoin data miners may currently be approximately less than $1/40^{th}$ of 1% of global electricity use. This entails a massive fossil fuels consumption and high carbon footprint value contributing to increase global warning above 2°C. In this regards de Vries (2018a) has proposed a Bitcoin Energy Consumption Index which, although is empirical methodology still not validate by scholars, attempts to estimate and to predict power consumed to mine Bitcoin. For instance, he has assessed that the average energy consumption in the 2018 was equal to 38TWh, which correspond to the emissions of 26 million tonnes of CO_2 and to the energy consumed by Israel in the same year (de Vries, 2018b).

Cryptocurrencies are involved also in social aspects as they are particularly attractive for libertarian and anarchist people wanted to see fiat currency removed from the control of a central bank (Golumbia, 2015). Moreover, Bitcoin seems to be unsustainable on economic point of view since the currency transaction system is currently slow allowing about three per day of currency, whereas, for instance, VISA circuit about 6,800. For these reasons the financial world has shown some perplexities of the widespread use of Bitcoins in the future (Mora et al. 2018). Independency is one of the most important characteristics of Bitcoin, but it gives an intrinsic rigidity of process. If a procedure is modified without agreement of user (e.g. from Bitcoin Unlimited-BU to Bitcoin Core-BC), a different cryptocurrency is made. Consequently, according to the logic of market competition this new procedure becomes the only possible and the administration of the previous protocol is abandoned. Moreover, Dodd (2017) affirms that the independency of the Bitcoin system is difficult to achieve since its anarchism is compromised by the way of it operates in practice. In fact, the system fosters the most powerful producers of the currency who increasingly powerful. This encourage an organization to become monopolistic making Bitcoin not a "widespread network" but a way to support strong trend towards the centralization of currency production.

On the other hands Bitcoin could represents an unsustainable virtual money from a social point of view. According to Ver (2014) Bitcoin can be used, for instance, for fraudulent activities by hacking or for illegally trade, drugs, weapons, by criminal associations etc. In fact, it can be used once anonymously an email address to correspond Bitcoin. To improve the legal image of Bitcoins it should be solved this problem. For instance, a positive perspective could arise when considering that Bitcoin will prevents some governments from print money at will for buy weapons. Moreover, their introduction can represent a tool to contrast national policies against bank account holders. For instance, Cypriots recently have begun to buy Bitcoin when the government has proposed to sequester money from their bank accounts.

Results and discussion

The close association among Bitcoin, anonymity and illegal activities is not be true in principle since all transactions are public and permanent on the network. This is not a tool of anonymity but a transparency and traceability system where information pass through the network that does not depend on a centralized agency. In fact, transactions of Bitcoin's required a distributed database that can be considered a public peer-to-peer archive of all the transactions shared among all the participants of the system. The system security is guaranteed by a digital distributed consensus of most of the participants and the information can never be erased since they are stored in a database. This technology called blockchain develop a sort of democratic and digital economy where all the transactions among different

economic entities are traceable. Considering the huge transactions among the business and marketing entities and the bill that companies must pay for maintaining paper-based archives, this technology may open new and challenging opportunities to the economic system. The flexibility of this technology apart from contribute to trigger multiple projects in different economic sectors and improve banking and financial systems it can also has social implications for many organizations and institutions (Tapscott and Tapscott 2017; Nofer et al., 2017). For example, this technology has been proposed to share among doctors and specialists medical record of a patient. This information can be properly conveniently and efficiently tracked and stored in a cloud using immutability and built-in autonomy characteristics of the blockchain. This system based on control of accesses can facilitate exchange of information between research groups and health care institutions as its good controls the access to medical data saved and processed on "cloud structure". Furthermore, it offers secure cryptographic techniques to identify and authenticate users who have access to medical data, keeping a track of all activities carried out (Xia et al., 2017). On the other hands, social sustainability of the technology underlying Bitcoin can be implemented from the innovations generate in the economic system.

Another challenging application of the blockchain technology is in the electricity production and distribution. The diffusion of micro-wind, photovoltaic panels, micro hydro power generation system is rapidly changing the traditional centralized one-directional power grid system towards a micro-grid system at citizen's level. The mass installations and use of these technologies coupled with battery storage and sometimes integrated with devices producing energy from fossil fuels, are transforming citizens from consumers to consumer-producer entities. In this way citizens intent to reduce their electricity bills and to sell their excess power to other local users via smart grids, using innovative technologies such as the blockchain (Green and Newman, 2017). However, the social acceptance of this transition process such as widespread adoption of small-scale technologies (e.g. rooftop installations of solar photovoltaic panels or micro-wind generators) remains unclear. The "citizen's utilities" or consumer-producers as it is called these new entities are growing, needs a technology that ensure information exchange and communications without a centralized server but basing on a distributed public record book of all transactions of energy. For instance, companies such as *Grid Singularity* (https://gridsingularity.com/) or foundation from like *Solar Coin* (https://solarcoin.org/) are using the blockchain technology to manage electricity market among citizen's utilities and microgrids. Therefore, these organizations can help consumer-producers by using a decentralised energy data exchange platform for managing energy and financial transactions base on the blockchain technology (Extance, 2015; Rutkin, 2016).

An interesting application blockchain technology in an advanced state of experimentation consists of DNS (Domain Name System) project management decentralization called "Blockstack" (Ali et al. 2016). DNS is a repository of web address-Internet Protocol address. Blockchain technology represents an alternate mapping DNS-like system that substitute DNS root servers in resolving domain names into IP addresses. The aim of the proposers is substituting DNS servers controlled by both corporations and governments which manage it in a centralized way, to avoid abuse of power in censoring activities, spying and hijacking. Blockchain DNS mapping may improve decentralization, censorship resistance, security, privacy (Ali, 2016). TLS cryptographic protocol assure communications security over nodes of a computer network, and is largely used in web browsing, web-fax, email, voice-over-IP (VoIP) and instant messaging. In the field of ITC security blockchain may improve and decentralize TLS (Transport Layer Security) certificate validation, using the same proof of work of blockchain consensus used in the Bitcoin system. File signatures, voting procedures, stocks and/or bonds shares, notary services, and proof of existence or

other certification released from governmental institutions are interesting applications of the blockchain, as open source experimental applications are developing currently.

Conclusions

In 2009 under the pseudonym of Satoshi Nakamoto a hide developer proposed a digital currency named Bitcoin relied on a peer-to-peer payment system designed as an open source software. Mining and transferring of this virtual money are made under cryptographic connections for this reason Bitcoin is also call as "cryptocurrency". This currency is based on the "blockchain technology" using highly secure cryptographic algorithms and sophisticated peer-to-peer technologies. This technology produces a public ledger of the transactions which is the base for a money distribution sustained democratically. Cryptocurrencies as virtual moneys can be environmental unsustainable since they require enormous amount of energy to sustain and maintain the exchange system of values but the use of these cryptocurrencies could be economically and socially sustainable since it represents a perfectly competitive market, free from inflation and safe from fraudulent activities more and less as fiat currencies. Environmental costs of Bitcoin's mining and maintaining depends on the rate of diffusion into the monetary system, considering only energy costs the system seems to be less consuming than the entire banking system but the overoptimistic replacement of all the actual monetary system into a cryptocurrencies is really an illusion as cryptocurrencies will remain probably a niche entities. Blockchain technology will be an interesting application in sharing framework of medical data, energy generation and distribution among micro-wind, photovoltaic panels, micro-hydro power generating systems related to micro-grids at citizen's level and for management of legal transactions among companies. File signatures, notary services, voting procedures, stocks and/or bonds exchanges, and proof of existence or other certification released from governmental institutions, as contract management among companies are interesting applications of the blockchain, as open source experimental applications are developing currently.

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ESTABLISHMENT OF A PRACTICAL STUDY REGARDING THE DIGITIZATION AND IT-READINESS OF GERMAN SMALL AND MEDIUM SIZED ENTERPRISES

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Abstract

This paper highlights the main elements of a doctoral research regarding the establishment of a practical study aiming to detect the most important obstacles and challenges of German Small and Medium Sized Enterprises (SMEs) concerning a well working IT-environment setting the backbone for Machine Learning (ML) and Artificial Intelligence (AI). In the last decade topics such as Digitization, ML, AI and Bots are in all people's minds and part of everybody's daily business. Thus, lots of studies were carried out in order to understand if companies have reached a level of automation and Digitization, elevated enough to compete against other market players or if they are ready to include AI in their business model.

However, all these studies do not show the operational/practical part of SMEs, such as issues with interfaces between internal IT-systems etc. Therefore, the results are far from giving a realistic picture about their IT-readiness.

We have established a more practical study focusing on the operational part of an SME, e.g. interfaces, department-based IT-readiness and system topographies of German SMEs. Finally, the outcome – the study itself – will mirror the actual situation of the queried companies' IT-readiness and thus, their ability to adapt and profit from issues as Digitization, ML and AI.

Keywords

Digitization, Small and Medium Sized Enterprizes, ERP-System, IT-Readyness, IT-Interfaces.

JEL Classification

G32, H20, H63, L10, M15, M16, M20, M40, O32, Y10.

Introduction

As all recent studies concerning the Digitization level (degree of Digitization) of German SMEs aim at providing an overall assessment on the estimation of the participants vis-à-vis their situation compared to the situation of other market participants, criteria such as their actual status and the operational situation is not being taken into consideration yet. Even the most recent study of IDB scrutinizing issues as ML and AI is only focusing on the impression the referring participants have regarding their position in the market (IDG Busines Media, 2019).

Thus, the outcomes are that ML has become an important issue for the majority of German SMEs or that more than half of all queried enterprises are already using at least one ML tool

in their daily business (Computerwoche, 2019). However, what is missing is a fact base argumentation regarding the degree of Digitization of the average German SME and a reasoning why today the majority of German SMEs still do not feel threatened by their low degree of Digitization (Bayer, M. 2019).
Thus, this article will provide an insight of the study undertaken, more precisely, will describe the assessment of the actual status of German SMEs regarding their degree of Digitization. In order to better understand the average level of Digitization of German SMEs deep digging questions regarding the status of the participating companies' IT- / ERP-Systems in each department had to be asked. Only if the outcome shows how far the implementation of ERP- or other IT-Systems in the queried companies is, a realistic guess regarding the readiness of German SMEs concerning Digitization can be made (Haisermann et al., 2019).
More precisely, it must be understood if each of the departments in the companies are using an ERP-System or not (Kuhlmann, 2018). In addition, it should be clarified that if an ERP-System is used in a certain department, and how far the system interacts with the systems of other departments (Hill, 2019). Last but not least, the survey should unveil if the enterprises are working with documented processes and – if this is the case – how are they being documented (Christensen, 2016).
If the above-mentioned contend is concealed we can get a realistic impression of how well German SMEs are prepared for Digitization, Big Data Analysis (BDA), ML and AI (Burkov, 2019). Thus, the results of the study, which will be published at the end of May 2019, will – for the first time – give a more practical insight into German SMEs and their IT- / ERP-Systems. We have already learned that German engineers do not seem to be ready for Digitization, ML and AI (F.A.Z., 2019) as shown by the majority of HR-Departments of German SMEs which still want applicants to complete their application offline (Bayer, 2019).

Research objectives and methodology
This research paper is founded on extensive review of existing studies from professional associations and recognized scholars. The main objective of this paper is to disclose why the study was compiled the way it was done by the authors, as it aims at pointing out the 'pain' points of German SMEs regarding their IT-readiness not based on comments and opinions but rather on a fact based scrutiny.
The study this paper refers to, aims at pointing out the degree of German SMEs' readiness regarding Digitization, ML and AI. The asked questions have therefore the ultimate purpose of unveiling the actual status of IT- / ERP-Systems in German SMEs. The study's main part is not compiled to understand what C-Level Managers of the participating companies think about their company's readiness or what opinion they have regarding their position in comparison to other German SMEs. It rather asks questions that give insights into each and every single department of the participating companies on how far processes are documented, what kind of IT-Systems are in place, and if interfaces between the different departments are present and how they are working.
To also give a slight insight into the participants' opinion regarding their IT-readiness and Digitization status, questions such as e.g. do you think your company is well prepared for the upcoming challenges regarding Digitization? were asked which aim at understanding the estimation of the interviewee. As the study should also expose the difference between the estimation of the interviewee and the actual degree of the queried company these results will also be compared to show if the interviewees' opinions are mirroring the actual situation or if their estimation is misleading.
Research results for the Establishment of a Practical Study. The result of the above-mentioned research was the establishment of a study which is able to show the practical

status quo of German SMEs regarding their IT-Readiness for Digitization, ML and AI. The results of the study itself are still being assessed and will be published at the end of May 2019, while this paper will already give an idea on how the study was structured, which questions were asked and what details were considered in order to have a better understanding how and if German SMEs are ready to fully implement tools such as AI and ML in their business models.

Cooperation Partners for the Study. The study was structured, compiled and created by GHK Management Consulting GmbH represented by Deniz Kerem Sargut, in cooperation with Prof. Dr. Wolfgang Jäger from Hochschule Rhein Main in Wiesbaden and Bundesverband Mittelständische Wirtschaft (BVMW), which supported the authors with the necessary database of potential participants.

Time Horizon for the Practical Research. The study was created at the end of February and the first invitations for a participation were sent out at the beginning of March, while the answering time for participants was set for six weeks.

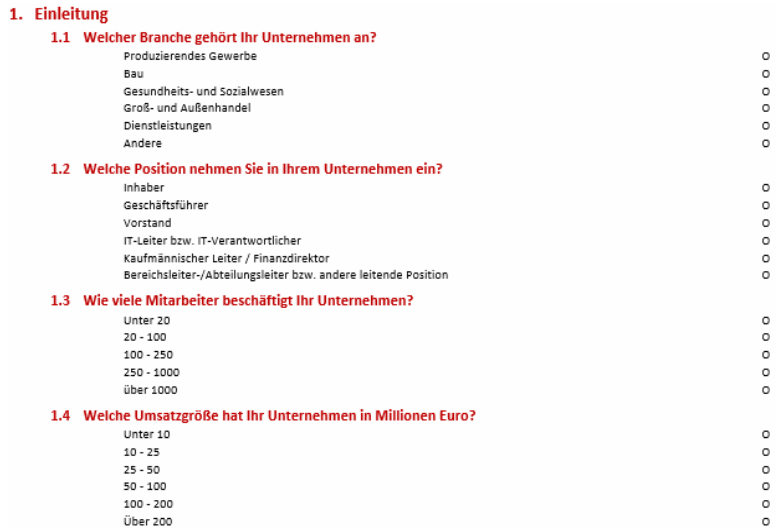
Research Participants. The participants and interviewees were responsible representatives of German SMEs, such as:

- Owners
- Managing Directors
- Executive Board Members (CEO, CFO, CIO)
- Directors
- Division Managers and
- Other Managers.

The sectors included were:

- Production
- Construction
- Health- and Social Care
- Whole and Foreign Sale
- Services and
- others.

The size of the companies included companies with revenues of up to €200 m and a headcount of max. 1.000 people (Figure 1).



1. Einleitung

1.1 Welcher Branche gehört Ihr Unternehmen an?

Produzierendes Gewerbe	o
Bau	o
Gesundheits- und Sozialwesen	o
Groß- und Außenhandel	o
Dienstleistungen	o
Andere	o

1.2 Welche Position nehmen Sie in Ihrem Unternehmen ein?

Inhaber	o
Geschäftsführer	o
Vorstand	o
IT-Leiter bzw. IT-Verantwortlicher	o
Kaufmännischer Leiter / Finanzdirektor	o
Bereichsleiter-/Abteilungsleiter bzw. andere leitende Position	o

1.3 Wie viele Mitarbeiter beschäftigt Ihr Unternehmen?

Unter 20	o
20 - 100	o
100 - 250	o
250 - 1000	o
über 1000	o

1.4 Welche Umsatzgröße hat Ihr Unternehmen in Millionen Euro?

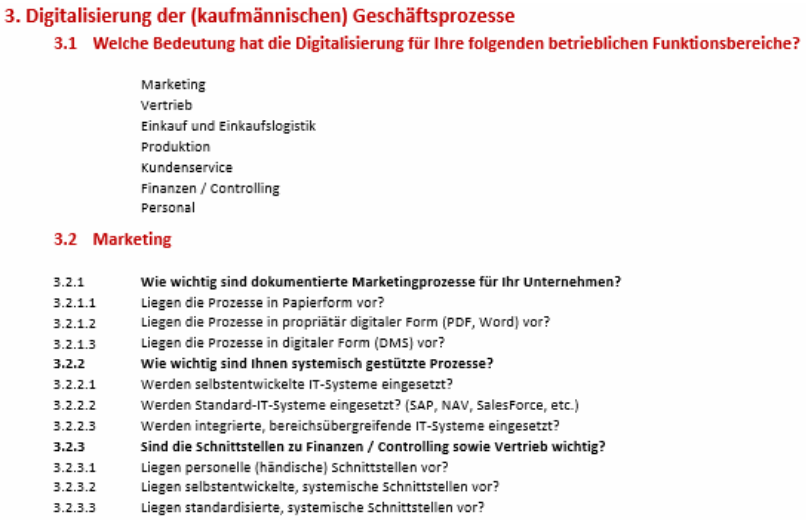
Unter 10	o
10 - 25	o
25 - 50	o
50 - 100	o
100 - 200	o
Über 200	o

Fig. no. 1 The First Part of the Questionnaire (Self Edited Questionnaire)

Distribution of Questionnaires of the Research. In total about 3.500 potential participants were contacted. The distribution of the questionnaires was organized as follows:

- 2.500 e-mails including a direct link to the survey;
- 1.000 letters with an included QR-Code and a Link, as well as
- 50 direct calls for action via telephone and a follow-up e-mail incl. the link.

Research Structure and Content. The first part of the study provides an idea regarding the size of the participating companies and the sectors they are operating in. The second part of the study focuses on questions regarding the IT and Digitization related investments the companies have done during the last years, as well as their willingness to invest in IT and Digitization related subjects in the upcoming year. Moreover, it asks for obstacles for further investments in this area, such as missing IT-competencies, data security, high cots, etc. Finally, while it also asks for a short self-assessment regarding the companies' degree of Digitization compared to the market they activate in, it also tries to unveil the meaning of digital technologies for the companies and their business models.



3. Digitalisierung der (kaufmännischen) Geschäftsprozesse

3.1 Welche Bedeutung hat die Digitalisierung für Ihre folgenden betrieblichen Funktionsbereiche?

Marketing
Vertrieb
Einkauf und Einkaufslogistik
Produktion
Kundenservice
Finanzen / Controlling
Personal

3.2 Marketing

3.2.1	**Wie wichtig sind dokumentierte Marketingprozesse für Ihr Unternehmen?**
3.2.1.1	Liegen die Prozesse in Papierform vor?
3.2.1.2	Liegen die Prozesse in propriätär digitaler Form (PDF, Word) vor?
3.2.1.3	Liegen die Prozesse in digitaler Form (DMS) vor?
3.2.2	**Wie wichtig sind Ihnen systemisch gestützte Prozesse?**
3.2.2.1	Werden selbstentwickelte IT-Systeme eingesetzt?
3.2.2.2	Werden Standard-IT-Systeme eingesetzt? (SAP, NAV, SalesForce, etc.)
3.2.2.3	Werden integrierte, bereichsübergreifende IT-Systeme eingesetzt?
3.2.3	**Sind die Schnittstellen zu Finanzen / Controlling sowie Vertrieb wichtig?**
3.2.3.1	Liegen personelle (händische) Schnittstellen vor?
3.2.3.2	Liegen selbstentwickelte, systemische Schnittstellen vor?
3.2.3.3	Liegen standardisierte, systemische Schnittstellen vor?

Fig. no. 2 The Third Part of the Questionnaire, incl. the Different Departments and an Example of the Questions asked for each Division (Self Edited Questionnaire)

The structure of the study's main body was compiled based on Michael E. Porter's value chain (Porter, 1998). Thus, the questions which were structured in a way that they can be asked repetitively for each of the divisions written below, were asked in the order of Porter's value adding divisions of the value chain.

- Marketing
- Sales
- Purchase and Logistics
- Production
- Customer Services
- Finance / Controlling and
- Human Resources

In the beginning, the study moreover observes the importance of Digitization of the companies' commercial business processes for each department, while the interviewees were provided with the ability of classifying the importance from 1 (not important at all) to

5 (very important). In the main part of the study, three main questions are asked repetitively regarding each company division. The most important intention of this exercise is to understand the importance, as well as the degree of realization of

- the documentation of business processes
- the system-based support of each of the processes and
- how the interfaces – if present – between the different departments are working.

As in many German SMEs this part is one of the most important parts to understand, as this is also related to risk management, internal revisions and auditing (Verbano et al., 2013). More precisely the first of the three main questions ask the participants to classify the importance of having documented processes. After classifying the importance of documenting processes, the study then asks in which format the regarding processes (e.g. in the Marketing department) are documented:

- paper-based (e.g. on paper at each working place);
- proprietary digitized (e.g. pdf) or
- in a completely digitized from (e.g. Document Management System (DMS)).

While answering the above-mentioned question, also the degree of completion (where 1 was defined as *not at all* and 5 was equal to *a 100 % completion* of the documentation procedure) has to be filled out as to understand how far the procedures have been realized or if they are still at ground zero.

The second continuously repeated question is how important system-based processes are for the respective department and to which degree the implementation of system-based processes is already realized. The question hereby focuses on the intention to understand if the system-based processes are supported by

- Self-programmed / Self-developed IT-Systems
- Standardized IT- / ERP-Systems (e.g. SAP, SAGE, Oracle, etc.) or
- Integrated, trans-divisional IT- /ERP-Systems.

For this question the participants have to classify again from one to five stating the degree of completion.

The third question which is posed to understand the degree of Digitization in each department of the participating companies, aims to examine the status of the available IT- and System-interfaces between certain departments. These certain departments always include the Finance / Controlling department and a second department usually chosen based on the order of Porter's Value Chain Model, mentioned earlier in this article.

The scrutiny of interfaces is introduced by the question *are the interfaces between the following departments (e.g. Finance / Controlling and Sales etc.) important for you or not?* The answers again had to be classified from one to five, while the second part then asks if

- Interfaces between the related departments are handled manually;
- Interfaces between the related departments are self-programmed / self-developed or
- Interfaces between the related departments are standardized.

For this question, too, the interviewee has the option to classify from one to five, since it might be that in some companies the interfaces are administered in two or three different ways (Lopes de Prado, 2018). Thus, it can be that a certain portion of the data is transferred via standardized interfaces, while another part is still interacted manually or with a self-programmed software. This way, the answers can be given very precisely and therefore, help us receive results that realistically represent the status-quo of German SMEs IT-Readiness for the ongoing Digitization and the following steps in the direction of ML and AI.

The last section of the study focuses on questions which are trying to illustrate if the interviewee is satisfied with the recent status of the IT- / ERP-System they are recently using, if she / he thinks that the present IT- / ERP-System gives them the feeling to be well

prepared for the future challenges which come along with Digitization and, in certain cases ML and AI (Olson & Nestell, 2017). The last two questions then ask to what extent the IT- / ERP-System in use is supporting the company sufficiently and to what extent the system really does what the user wants it to do. These questions are also very important to ask, as a lot of German SMEs completely fail while classifying their situation compared to other SMEs (Schöpper et al., 2018). In total the study is prepared to take about 15 to 20 minutes to complete it without leaving no one question unanswered.

Conclusion

The overall purpose of the study's result, its structure and – most importantly – its content is to have one of the first studies regarding Digitization which will not focus on the interviewees' opinions but rather the intention to mirror the actual situation of the queried company. The study will therefore give a valuable insight into the real situation of German SMEs regarding their state-of-the-art IT-structure, ERP-Systems incl. interfaces, which is one of the most complicated issues and lastly, the status of the companies' status of their process documentation. Thus, the outcome will not mirror a theoretical idea of C-Level Management but will rather unveil certain 'pain' points and challenges that German SMEs currently have.

As a second step, the results could then be compared to markets outside of Germany to see if these problems are only subject of prime importance for German SMEs or if it is also true for companies abroad and then further classify if Germany is well ahead, on the wave or far behind international standards.

Nevertheless, to remain on point, the result of the study will be that – with its results at the end of May 2019 – it will help understand German SMEs real degree of IT-readiness and Digitization and it will provide a thorough understanding of the most important practical issues regarding Digitization incl. thrilling subjects such as process documentation, ERP-Systems, as well as system and inter department interfaces.

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FOOD RETAIL IN ROMANIA. MARKET OVERVIEW

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Abstract
Food trade covers the population's needs and is an important component of national security. The belonging to the common European market and to the global security structures, the domestic market potential and the economic growth have led to a constant increase of the interest of the foreign investors for the Romanian agri-food sector. The present paper proposes an analysis of food trade in Romania from the perspective of the development of international retail food networks. The researches revealed a spectacular growth of the different forms of food distribution as well as the preponderance of foreign capital and the bankruptcy of the indigenous companies. Currently, over 2,500 modern commercial spaces are used in the retail food trade in Romania, a sector where more than 44,000 specialized companies operate, with an annual turnover of 15 billion euros and offering jobs for about 180,000 people. Western retail food companies that concentrate on the domestic market put accent on the extensive expansion of distribution networks, by focusing on proximity stores, adapting the product mix to consumer requirements, and including national agri-food products in the offer, developing e-commerce and customer loyalty. Competition in the retail food sector will continue in the coming years, with changes in hierarchies and market shares, without excluding the emergence of companies with American or Asian capital on the Romanian market.

Keywords
food retail, market, analysis, Romania

JEL Classification
L11, L66, Q18

Introduction

Romania has seen the most spectacular economic development in South-Eastern Europe in recent years, becoming one of the most attractive markets for foreign investors. On a market of about 20 million consumers, large retail food sales networks are facing an aggressive expansion policy, marked by the rapid rallying of new outlets. Wage growth, low inflation, falling interest rates and improving labor market conditions are factors that are currently affecting the growth of the retail sector. The strong evolution of sales in this sector is mainly based on the massive increase in imports, mostly made by the Member States of the European Union. If, years ago, the competition between major international chains was based on new store concepts launched by market players, 2018 was marked, in addition to

the pace of expansion in the supermarket and proximity segment, a series of projects where retailers primarily aimed at facilitating a faster shopping experience: house self-checkout, mobile payment applications or smart stores.

Literature Review

Stanciu (2014) makes an analysis of Romanian food trade, highlighting the strong development of international retail food networks in recent years. Romania's integration into the North Atlantic Alliance and the European Union has increased the interest of foreign investors. The modern marketing tools, the high level of capital, the developed logistics and the experience of the Western European traders in the field have led to the failure of a large number of indigenous companies on the food chain, so that there is currently no large network of food stores with Romanian capital at national level. The organization of local economic agents in cooperatives / associations, symbiosis with international networks, rural orientation or the development of an integrated production system represent survival strategies for Romanian food companies. Stanciu (2016) shows in the analysis of the retail food sector in Romania the high bankruptcy rate of local food companies, increased risks for domestic traders and the expansion of foreign capital on the Romanian domestic chain. The USDA Food Agency (USDA FAS, 2018) appreciates the strong development of the retail food sector in Romania, amid economic growth, the opening of the market to imports and the evolution of domestic consumption. The report estimates that in 2017 there was a record for imports of US food, which reached US $ 150 million (up 22% from 2016). Indirect food imports from the US grew by 15% and direct exports by 29% as compared to 2016. In order to make commercial contracts with potential partners in Romania, product catalogs, price lists, samples of products are needed, considering that many retailers in Romania are resorting to subjective factors in decisions about choosing new products. American products with export potential in Romania are distilled spirits, premium fruit and beef. Florian et al (2013) investigated the potential of "own brands" in hypermarket networks in Romania in the context of the economic crisis. Own brands can be an important tool for increasing the performance of manufacturers and traders, leading to increased sales for certain product segments perceived by consumers as having a favorable quality / price ratio and qualitatively close to the recognized brands. Istudor and Pelău (2011) analyzed the behavior of the Romanian food consumer, considered as a reflection of the image, values and aspects specific to the indigenous society, and as a major decision maker in the strategies of the retail food companies.

Material and Methods

The data on the number of companies, turnover, number of employees and profit in the retail food sector were selected from the TopFirme.ro database (2019). For industry-specific information, the USDA Foreign Agricultural Service (2018), LZ Retailytics (2018), RetailFMGC.ro articles, the Web of Science-Clarivate Analytics and Google Scholar scientific databases have been consulted. The Gini Struck Index method, recommended by Săvoiu, Crăciuneanu and Ţaicu (2010), was used to assess the concentration of the market. Selected information has been processed statistically, graphically and interpreted. The obtained results were compared with other specialized studies, where appropriate, in order to obtain pertinent conclusions.

The structure of the retail food market in Romania

According to TopFirme (2019), at the end of 2018, 44,441 companies were declared as main activity "Retail in non-specialized stores, with predominant sale of food, beverages and tobacco" in Romania (CAEN Code 4711). Compared to 2017, the sector registered a reduction in the number of economic agents with over 7,500 units, mainly through the bankruptcy of Romanian-owned companies (Retail-FMGC.ro, 2018, 2019). Companies

specialized in this sector accounted for 2.27% of the total national economic agents in 2018. The global turnover of retail food business operators in Romania reached ROL 66.4 billion (15.1 billion euros) in 2018, accounting for about 4.93 percent of the total national business. Profit declared by traders in the sector was about 2.5 billion lei (558.3 million euros), or 2.34% of national net profit, in 2018. The total number of employees in the national retail trade was at the end of 2018 187,605 persons, or 4.67% of the total number of employees in Romania.

The top 10 operators in Romania reported a total turnover of about 9 billion in 2018. euro, accounting for almost 60% of the total reported by the sector. With a turnover of about 2.3 billion euros and a market share of over 15%, Kaufland Romania SCS is the most important retail food retailer at national level (fig. no. 1).

Romania is currently ranked on the 5th place in Europe, after Turkey, Russia, France and Italy, with regards to the development of commercial retail sales. Thus, according to the USDA Foreign Agricultural Service (USDA FAS, 2018), the retail space in Romania has doubled over the last 4 years, reaching 100 square meters / 1,000 inhabitants.

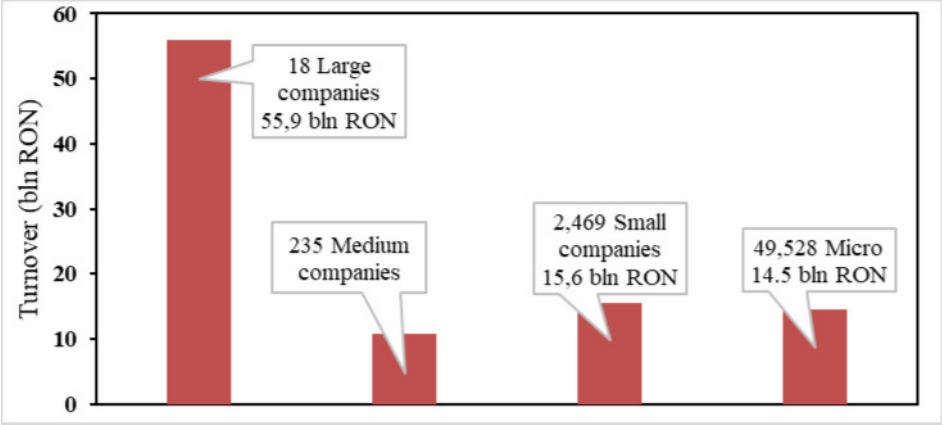

Fig. no. 1 Analysis of the retail food sector in Romania (2018)
Source: Authors, by using Retail-FMGC.ro (2018)

The USDA FAS (2018) report indicates that the structure of the retail food market in Romania is mainly focused on the following sales areas:

- Hypermarkets of over 2500 sq. m (25,000 sq ft) with a wide range of food and non-food products. For the year 2018 Kaufland announced for a budget of $ 233 million for the expansion and modernization of the current network. French retailer Carrefour reported a 10.6% increase in turnover in the first quarter of 2018 to reaching revenues of $ 566 million.
- Supermarkets, ranging from 400 to 2,500 sq. m, selling a wide range of food and non-food products. Mega Image has expanded aggressively in this segment and has recently become the largest supermarket chain in Romania.
- Wholesalers / Cash & Carry: Retail / wholesale stores with a diverse portfolio of food and non-food items sold in warehouse style. Metro Cash & Carry, was in Romania in 1996, the largest in this segment with 31 units. The Selgros Network comprises 20 stores, with a range of 41,000 food and non-food items.
- Discount Shops: small supermarkets with limited range of low-cost products, often private label. The German LIDL network showed up on the Romanian market in 2011 through the acquisition of discounter Plus network, which had 107 commercial units at the time of transaction and reported a turnover of about $ 456 million. LIDL's objective of holding 200 stores in Romania was achieved in 2016. Based on

its turnover, Lidl Romania holds the third place among the retail sector in Romania after Kaufland and Carrefour in 2017. In 2015, it announced a profit of $ 1.13 billion, increasing by 21% from 2014. Penny Market, another major competitor on this market, reported 2017 growth in turnover by 17% compared to 2016. In 2018, the company reached a 13% increase in turnover.

The Retail Food Sector Analysis provided by the Retail-FMGC.ro (2018) report shows that the major retail food market players on the Romanian market have strengthened their distribution networks, due to the disappearance of small players - the independent neighborhood stores. (Fig. no. 2).

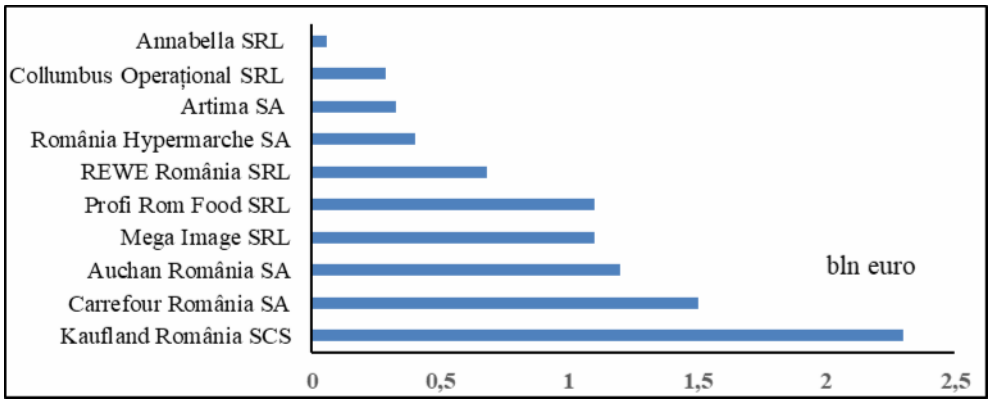

Fig. no 2. Top 10 Retailers in Romania (Gross retail sales in bln euro)

Source: TopFirme (2019)

The analysis of the market concentration grade according to the method proposed by Săvoiu, Crăciuneanu and Ţaicu (2010) is based on the calculation of the Gini Struck Index (IGS), based on formula (1),

$$IGS=SQRT((n\sum(gi*gi)-1)/(n-1)) \quad (1)$$

Where:

n = 44,441

gi= the share of the company i in total sales.

The assessment carried out based on the previously mentioned method leads to an IGS of 25.15, ie a high degree of concentration of the national retail food market.

By applying this method to national profit concentration, it results in an IGS of 6.08, a value showing a de-concentrated distribution of profits among actors involved in the distribution of food.

With a profit level of € 152.4 million in 2018, Kaufland Romania SCS ranked first among the leading companies. Compared to an annual turnover of EUR 2.5 billion, the profit rate obtained by the German operator was over 6% (Fig. no. 3).

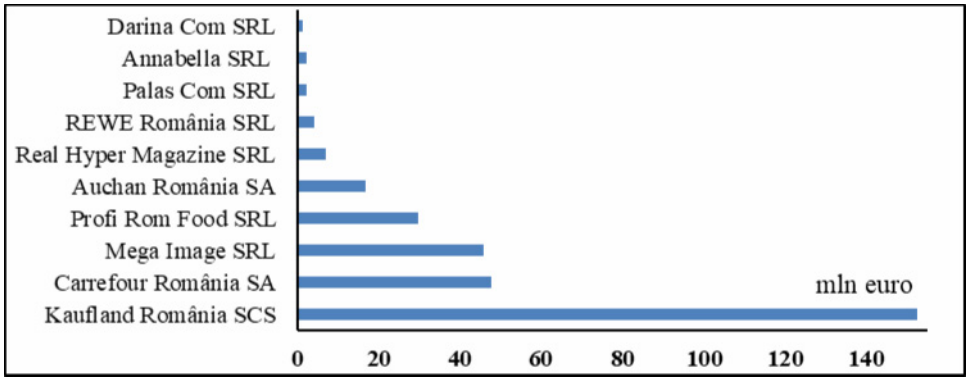

Fig. no 3 Top 10 profit of retail food companies in Romania

Source: Autorii, folosind TopFirme (2019)

After a low expansion rate in 2015, the retail sector in Romania grew in 2016, with 423 new stores opening to 2,391 shops. Most of the new stores were opened by international traders, mainly German. In 2016, major retail networks opened 250 new stores, covering all market segments. The opening of consumer goods stores (135) and supermarkets (65) reached record levels in the aforementioned year. At the same time, discount stores increased by 36 new jobs in 2016. The smallest number of new units was registered by hypermarket segments and cash & carry segments (USDA FAS, 2018). However, the hypermarket segment continued to attract new investments, with 8 retail outlets in 2016 and an increase of 15% compared to 2015. With regards to the cash & carry segment, after 4 years without openings, Selgros expanded its network own shops with two units in a new format called "Compact Store".

Although it was considered by consumers as the most expensive retailer, Profi recorded the largest number of shop openings in 2016, with almost half of the total in that year (134). Mega Image (53 new units), and Penny Market (25 new stores) completed the list of inaugurations. In 2016, Mega Image reached 500 stores in Romania, while Auchan, Cora and Metro Cash & Carry did not open any new store in 2016. The USDA FAS forecast is that these outlets will face the competition of major retailers , which will develop larger stores in the outskirts of these cities.

In 2017, Romania's retail market was estimated at about $ 46.5 billion. Four major players (Kaufland, Carrefour, Metro Cash & Carry and Auchan) held approximately 60% of the total market share. In 2017, a further 43,000 sq. m commercial spaces. Profi, Penny and Lidl have opened stores in smaller cities with lower rental rates. Retailers have made considerable efforts to identify sustainable, long-term suppliers looking for competitive prices and new products. 85% of the products sold in modern Romanian sales outlets are of mixed origin and 15% are exclusively local products. Kaufland's corporate management has announced a budget of $ 233 million to expand and modernize its network in 2018, doubling virtually the 2017 budget.

Modern retail formats have managed to further strengthen their position in the market in 2018 and currently hold almost 60% of total household consumption (according to GfK data for January-September 2018 quoted in the Retail-FMGC Magazine Report 2019).

The expansion of international networks in Romania continued in 2018 with the opening of 400 stores, representing an additional 50 new locations compared to 2017. Among the modern shopping channels, hypermarkets remained the main destination for family shopping, but begin to lose ground at the expense of other formats (with just six new openings in 2018). Efervescence remained in the supermarket area, which from 81 units opened in 2017 registered in 2018 almost double dynamics, the big players placing 149 new locations on the map of Romania. In addition, supermarkets had the best market share in

2018, and the purchasing frequency has most evolved in this format, with an increase of 6% between January and September 2018, compared to the same 2017) (Retail-FMGC.ro, 2019). The proximity stores enjoyed the highest number of inaugurations, with 200 new locations open in 2018. The opposite was in 2018 the format of cash & carry shops, where there were no new openings, while the specialized department store checked only nine inaugurations. The format of discount stores if at European level is still on the wave, in Romania the dynamics is constant, with 37 openings in 2018, in line with the evolution of the last two years.
In 2018 Profi opened 232 new stores, reaching 925 stores and becoming the largest retail trader in Romania. According to Retail-FMGC.ro (2019), Profi reached 1,000 sales units in Romania in April 2019 (Fig. no. 4).

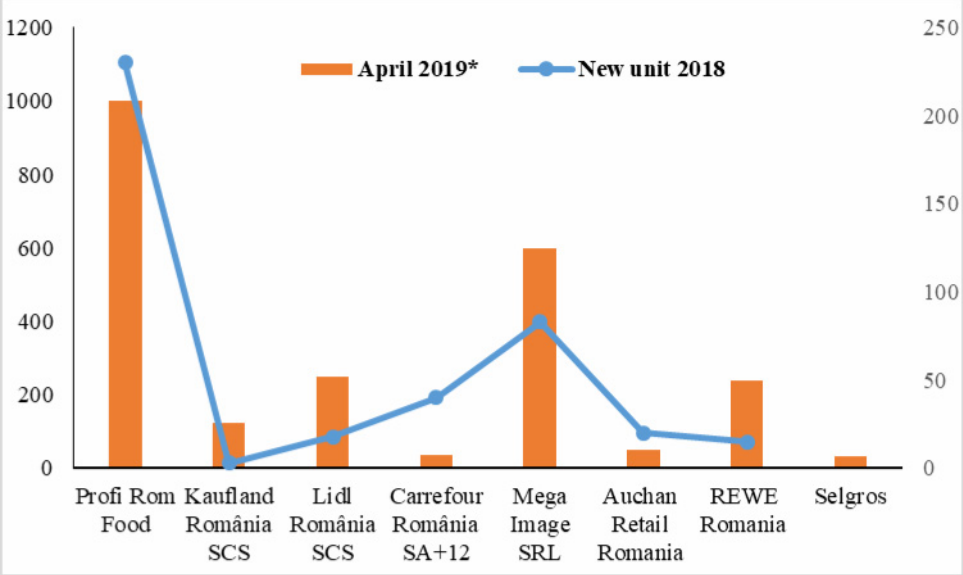

Fig. no 4 New retail spaces (2018) and total (April 2019)
Source Authors, by using Retail–FMGC.ro (2019)

Trends in the development of the retail food market in Romania
According to LZ Retailytics report (2018), retail networks will grow in Central and Eastern Europe (CEE) twice as fast as in the rest of the European market. For the period 2019-2022, LZ Retailytics forecasts a compound annual growth rate (CAGR) for retailers in the region of 6.9%, while in the rest of Europe it will grow by only 2.9%. If specialized multinationals mainly rely on the extensive development of retailing networks in the region, the "all-size-fits" standard will in the future face difficulties, amid a local consumer trend to avoid operators who do not adapts sufficiently quickly to national peculiarities. A specific CEE phenomenon will be the development of small discount stores (especially by Lidl and Aldi, companies that have used this way to expand faster than the rest of market operators). In Romania, Lidl currently operates 244 quality-discount stores, with REWE Romania as its main competitor, operating a network of 236 Peny Market (Retail-FMGC.ro, 2019a). And for these forms of trade there will be a tendency to increase consumer preferences for local products, although it can be appreciated that regardless of the range of products offered, the price will still be a key factor in the choice of consumers in the CEE area. An opportunity expansion for certain merchants will be online shopping. Romania's e-commerce segment continued to expand in 2017, reaching a share of about 5-6% of the Romanian consumer purchase compared to 4% in 2016. Although the share of online sales remains low on the Romanian market compared to Western European countries expect this segment to grow in

the next few years. According to estimates by key players interested in e-commerce in Romania, the value of online shopping (food and non-food) was $ 3.2 billion in 2017, as compared to $ 2.2 billion in 2016, the statistics including only consumer products , no services, utility bills, hotel reservations or entertainment.
It is possible to change the hierarchy of retail food competitors in Romania, based on an aggressive policy of extending the Profi network, which will surpass Kaufland, according to experts (Fig. no. 5).

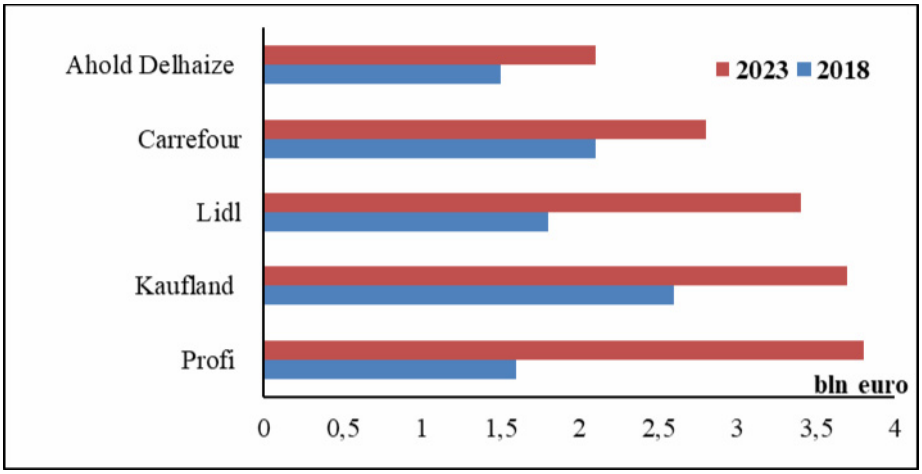

Fig.no. 5 Prognosis in the evolution of sales of major retail food companies in Romania (Gross retail sales, in bln euro)
Source: Retail–FMGC.ro (2019)

The Romanian agri-food market will become more and more dependent on imports. The USDA FAS (2018) report estimates that about 85% of the food in the Romanian retail food is imported or of mixed origin and 80% of imported food from EU Member States. The main suppliers of food for Romania are Hungary, Germany, Poland and Bulgaria. The largest share in the food goods imported by traders is processed products, meat, cereals, protein meal, dairy products, fruit and sugar. Local importers and distributors are direct suppliers to retailers, being familiar with existing legislation, commercial practices and domestic customers. Most importers / distributors in Romania have their own distribution channels with national coverage, direct collaboration with them being recommended as a market entry strategy.

Conclusions

The food trade sector in Romania is dominated by Western networks, with German or French capital, the Romanian capital being virtually non-existent. The trend of rapid development, with the establishment of new stores for market foreclosure, will continue in the short term, with investments being mainly targeted at proximity stores, new outlets in small towns and rural areas. The aggressiveness of large commercial networks will continue to lead to the deepening of bankruptcy of domestic food retail companies. The retail market in Romania has begun to adapt and redefine investments not only for expansion, but also for renovating older, upgraded and upgraded units with formats tailored to urban consumer preferences. Traders have begun to pay more attention to new forms of marketing and marketing, investing in the outward appearance of outlets and on-line sales systems. Strategies based on new business concepts, the promotion of premium products or private trade marks, the "daily low price" or the development of product ranges with the inclusion of local ones are more common on the Romanian market.

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THE INTERDEPENDENCE BETWEEN THE TRILOGY RISK-COST-VALUE AND INTERNAL CONTROL

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Abstract
Our article analyzes the active role of internal control amongst managerial tools and develops its importance in establishing the balance between risk, costs and value, considered as three efficiency pillars at the institutional level. From a conceptual point of view, we investigate the interdependencies between the three pillars and debate on possible influences they may have on the achievement of organizational targets. The methodology used starts from the conceptual definition of the evaluated terms and is based on an empirical analysis of the herein notions. The study highlights trends regarding the attitude for risk management during the implementation of internal control and proposes a shortlist of checkpoints that supports the achievement of risk-cost-value balance trilogy.

Keywords
Internal control, risk management, cost, value.

JEL Classification
G30, M40, O16

Introduction

The starting point of this research resides in the current economic context and the resonance that corporate governance has on public entities. According to literature, corporate governance has been analyzed from various perspectives, both conceptually and empirically. Cross listed firms seem to be more likely to comply with corporate regulations when they need external funding, unlike when coming from countries with weak corporate governance rules. (Foley, C. F. et al., 2014). The interdependencies between corporate governance and internal audit have been investigated related to the role of the internal auditor (Koutoupis, A.G. et al., 2018), the validity of financial reporting (Gamayuni, R., 2018) and the contribution that the internal auditor may have in achieving the organizational goals (Koutoupis A.G., 2018).
On the other hand, the implementation of internal control as part of the corporate mechanism has been analyzed in correlation with "hard law" or "soft law" conditions (Aguilera et al., 2008).

Weaknesses of internal control can become determining factors for fraud (Zakaria et al., 2016), and the sustainability of entities can be enhanced through awareness of the accounting centralized position within the entity (Narayan, A.K., 2014) and use of tax principles in financial reporting (Graham et al., 2010).
The relationship between risk management and firm-value was developed according to literature, by various studies such as those on non-financial UK companies (Panaretou, A., 2013), as well as theoretical analyzes such as the evaluation of various institutional influences in emerging markets (Danisman et al., 2019).
Werner (2005) has stated that each value-based management needs risk management, just as the cost of capital is determined by the level of risk accepted. Until now, we have not identified an intrinsic analysis of the interdependencies between the risk-cost-value trilogy and the patrimonial management of public entities in the development of academic literature.
Our work is part of the scientific approach to corporate governance in the public sector and highlights the contribution of internal control to ensuring the performance of public entities. In this context, the paper demonstrates the capacity of internal control to contribute to creating added value in the process of achieving public entity goals, optimizing resource consumption and streamlining risk management mechanisms. In this respect, we propose a shortlist of supporting questions that can bring value to the implementation of the public-sector risk-cost-benefit balance trilogy.
Internal control is the responsibility of the public entity's manager, who has the obligation to design, implement and develop it continuously. Assigning third parties to carry out the activities related to the implementation and development of the system of internal management control of the public entity may not reside as a good reference, as it implies that the leader of the public manager does not fulfill his own tasks with good results.(Order no. 600, 2018)

European and national regulatory framework

The European regulatory framework, considered relevant for our study, incorporates:
- Decision no. 2 / 18.03.2004 of the European Court of Auditors (ECA) on the model of "single audit (and a proposal for a Community internal control framework)", which basically has a control system that must be based on a chain structure and which must achieve results that are recorded and communicated in a common form;
- Guide for a Good Governance, developed by the Standards Committee for Internal Control – INTOSAI GOV (The International Organization of Supreme Audit Institutions);
- The Yellow Paper of the European Commission entitled "Welcome to the CFPI World" - 2006, the European Commission.

European regulations regarding the implementation of internal control mechanisms have developed in close agreement with the awareness of their importance in the fight against fraud and corruption. In Romania, the legislation has undergone a broad progress in sense of reconciliation with the European requirements by adopting the following normative acts:
- Government Emergency Ordinance no.119/1999 on internal control and preventive financial control, republished and updated;
- Law no.672/2002 on the internal public audit, republished in 2011 and updated;
- Emergency Ordinance no.109/2011 on corporate governance of public enterprises, updated;
- Order of the Ministry of Public Finance no.946/2005 for the approval of the internal / managerial control, including the internal / managerial control standards in public entities and for the development of the internal / managerial control systems - repealed by OMFP 808/2015;

· Order no.400/2015 for the approval of the Managerial Internal Control Code of Public Entities, repealed;
· Order no.600/2018 on the approval of the Code of Managerial Internal Control of Public Entities.

Methodology

Our paper starts from the research question: How could the risk-cost-value balance trilogy be pursued for the implementation of a viable internal control system?
The proposed methodological approach is an empirical one, starting from literature studies circumscribed to the research area, as well as qualitative analyzes of the existing relevant international and national regulatory framework. The methodology also incorporates statistical data reported by the Court of Accounts of Romania during the period 2008-2017, which allows the quantification of the non-conformities reported by the external public auditors regarding the financial results of the audited entities. The reason behind the value-based analysis of public sector nonconformities is that in order to gain relevance, it is important to quantify the impact that a possible imbalance between the analyzed trilogy might have on the performance of results of the entity.
In order to accomplish the proposed research objectives, it was necessary to systematize a significant amount of managerial, legislative and conceptual information.

Components of the internal control system

For the assessment of the internal control system we need to define that the six independent recommended components apply to all operations of an entity:

- Control environment
- Risk assessment and measurement
- Control activities
- Information and communication
- Monitoring
- Use of IT

The control environment is the foundation for all the other components of internal control. It is an effective tool in preventing corruption and fraud. Through its mechanisms it ensures discipline within the organization and a structural framework of the entity meant to define the overall quality of internal control.

Fig. no. 1 Control Environment Elements - Preventing Corruption and Fraud
Source: Authors' work

Risk assessment involves the identification and analysis of risks that may be relevant to the entity's objectives. The scope of risk assessment is to identify those events that are sufficiently significant to influence managerial decisions. According to INTOSAI GOV 9130, the entity's risk management objective is to enable an entity's management to identify the element of uncertainty regarding the achievement of the objectives set and the associated to risk (to decide on the actions to mitigate or remove it) and to have the opportunity to increase the capacity adding value or, in terms used in the public sector, to provide more efficient, economic and effective services and to consider equity and justice as primary managerial values.

The risk management process involves:

- Risk identification – involves identification of the risks related to the entity's objectives incorporates: identifications of internal and exogenous risk factors, institutional circumstances (risk areas, compartments, organization) and activity relevant perturbation factors (setting responsibility regarding risk management actions).
- Risk assessment – relates to the estimation of risk significance (inherent risk) depending on probability, impact, exposure; assessment of risks determinants categorized as: small, medium, high.
- Assessing the degree of acceptance of risks by management - concerns the evaluation of internal control instruments, estimating the impact that the production of the risks may have on the activity, creating an adequate procedural system, assessing the impact of risks in relation to the achievement of the objectives.
- Establishing actions to be taken. There are four types of risk responses: transfer, tolerance, treatment, termination; The management of the entity will have appropriate controls in place to avoid risks (detection or prevention).

According to the Romanian Court of Accounts reports, depending on the maturity of the understanding of risk management mechanisms, managerial attitude may differ. Thus, the implementation of prudential risk management mechanisms, broadly suppose the acceptance of risks and the undertaking of measures with the sole scope to treat them. On the other hand, accepting risks and managing them in the sense of treating and transferring or tolerating can set the premises for a managerial attitude oriented to pursuing opportunities, either in terms of identifying new opportunities for business development or restructuring the entity. The schematic representation of the relationship between risk management and managerial attitude is shown in Figure no.2.

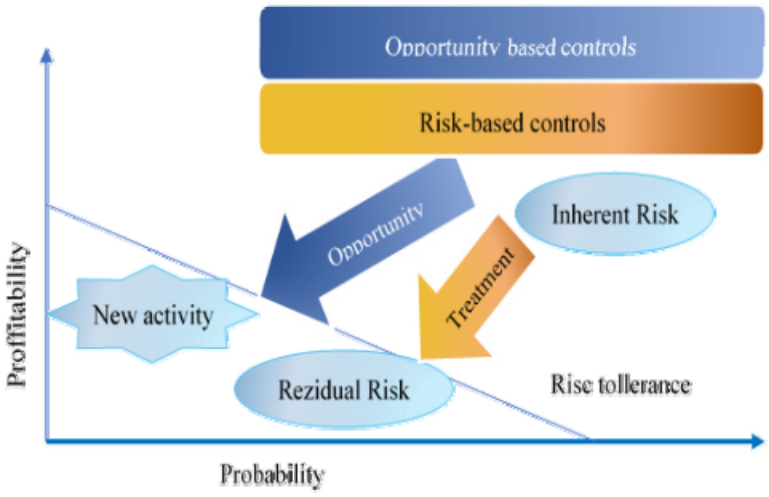


Fig. no. 2 Attitude towards risk. Management risk

Source: Authors' work

Control activities. Control activities include all the policies and procedures established to identify the risks that could impede the entity's objectives.
Control activities can be:
- Preventive: authorization and approval; separation of duties; limiting access to resources and records.
- Tracking: checks; reconciliations; performance analyzes; reporting and reporting of deviations.
- Combined (screening and prevention): revisions; supervising

Management must implement control activities in accordance with applicable regulations and rules. Control activities must be appropriate in the sense that they must be understood quickly and correctly. To be effective, they must be reasonable and integrated into other components of internal control (preventive financial control, financial management control, internal audit). Control activities are supposed to be permanently in line with the plan for the corresponding period.
Information and communication are very important for achieving the internal control objectives of an entity. The quality of information, also known as adequate, timely, accurate and accessible, depends on the ability of the management to make the right decisions. Permanent monitoring of the procedural reporting framework, information flow and access to information sources are required.
Monitoring is done through routine activities, separate evaluations, or a combination of these two methods. Continuous monitoring is specific to current activities. It includes regular approvals and approvals at the level of each component of the internal control system with the scope to prevent unethical behaviors, inefficient and inefficient activities.
The use of *information technology* consists of:
- Organization and functioning of IT structures: it is necessary to establish responsibilities regarding operation, authorization of operations, verification of data, maintenance and security of the informatic system; involves the inventory of risks in the field of IT and the design of efficient strategies for the functioning of the IT structures.
- Implementation of the IT system: monitoring the need of IT resources and the functionality of the IT applications; monitoring the Internet access of IT system users and using external data storage resources; uniform transaction processing, transaction automation, unusual or unauthorized operations monitoring.
- IT system security: monitoring of antivirus systems and defense against cyber- attacks;
- Ensuring that security bailouts are made and data is properly archived.

The risk-cost-value balance
At managerial level, an important challenge for organizations is to find the balance between risk, costs and value. Understanding and ascertaining the conceptual importance of the three pillars of institutional KPI may be equivalent to creating the premises for achieving the entity's objectives while respecting the three fundamental principles of economy, efficiency and effectiveness. Practically, in simple language, the equilibrium relationship allows achievement of significant benefit at a low cost and respectively, an optimized consumption of own resources. One of the most important managerial levers for achieving this balance is the implementation of viable internal control mechanisms.
The challenge is, according to the public sector auditors, to clearly understand the key risks associated with the entity's operations and to implement appropriate cost-effective measures to optimize the achievement of the established objectives.

Fig. no. 3 The relationship between internal control and the risk-cost-benefit balance trilogy

Source: Authors' consideration

By summing up the results of both theoretical and empirical analysis, a shortlist of supporting checkpoints can be outlined, with the role of guidance, for balancing the three pillars of effective public governance:

Concerning Risk:

- Do the entity's management understand the risks associated with the activity?
- Are key risks reported to management?
- Does management recognize the correct level of risk?
- Do you analyze, on a regular basis, whether the risks are properly managed?
- Is there a specific risk document (registry)?

Concerning Cost:

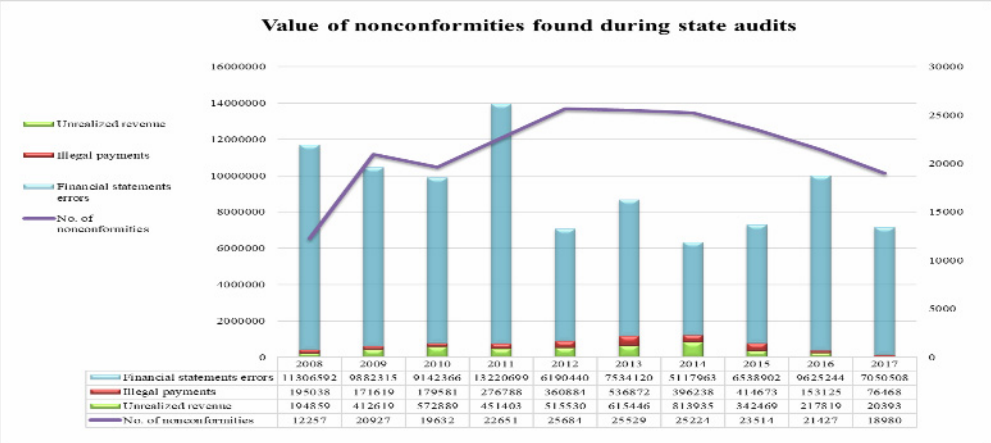
- What is the cost related to the necessary activities to achieve the corporate objectives?
- Are scenarios being designed for costs associated to the operational risks?
- Are there any risks that may double, overlap and which can increase costs?
- Are automatic controls or manual controls being used?
- Is Staff remuneration done at fair costs?
- Is the objectives of the entity achieved through fair costs?
- Is the budget projection correlated with a prior analysis of the operational risks?
- Is the cost dynamics pursued in correspondence with the dynamics of the value?

Concerning Value:

- Are the benefits being higher than costs?
- Do the risks assumed correspond to the established strategic objectives and support a correct cost calculation?
- Can added value be created in risky investments?
- Can efficient services be provided at an optimal operational cost?
- Can resource consumption be optimized?
- Implementation of the risk management process produces improvement solutions?
- Risk management helps to achieve sustained and effective progress or a slowdown in activity?

Our study focuses on identifying an empirical format of references that determine the deficiencies of the balance between the three pillars. In order to achieve this goal, we analyzed the Court of Accounts' reports issued during 2008-2017. The study focuses on the analysis of the quantification of the non-conformities identified by the public auditors at the

level of the verified public entities and on establishing the link between the statistical results and the balance between the three pillars. Thus, the analyzed database comprises of three major categories identified by external public auditors during their missions:
- Income not realized by the audited entities - the category includes those earnings appreciated by the controlling authority not to be realized as a result of deficiencies in the risk management process. Relevant examples are: inappropriate application of legal procedures in the process of revenue collection, non-compliance with accounting regulations regarding income recognition or reporting, deviations regarding the administration and management of public and private patrimony of the state. Our study considered this indicator as a risk reference.
- Illegal payments – our study considers it as having a direct reflection on the entity's costs. Practically, through non-conformities in public procurement procedures, through unlawful payment orders, or through the implementation of defective management decisions, the entity's costs are increased, to the detriment of judicious use of the entity's resources;
- Financial-accounting reporting deviations - referring to the way of complying with the financial reporting or budget execution regulations, the quantification of errors in the implementation of internal financial control or the quality of economic and financial management. It can be said that the results of financial reporting are the expression of the financial position and performance of the enterprise, which makes it possible to associate this referential with the value indicator.
In addition to the non-realized income indicator used as a risk reference, we included in our research the number of cases of non-conformities reported at the level of the public entities during the analyzed period. This reference was associated with the risk indicator and it's evolution was observed in correspondence with the rest of the investigated indicators.
The analyzed statistical data are summarized in Fig. no.4:



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Financial statements errors	11306592	9882315	9142366	13220699	6190440	7534120	5117963	6538902	9625244	7050508
Illegal payments	195038	171619	179581	276788	360881	536872	396238	414673	153125	76468
Unrealized revenue	194859	412619	572880	451403	515530	615446	813935	342469	217819	20393
No. of nonconformities	12257	20927	19632	22651	25681	25529	25221	23514	21427	18980

Fig. no. 4 Value of nonconformities found during state audits
Source: Romanian Court of Accounts, authors' compilation

Thus, from the analysis of the centralized table data it can be noticed that the value of the non-conformities reported at the level of the financial statements has the highest consistence during the analyzed period. Starting from the premise that financial reporting, as a representation of the financial position and performance of an entity, represents the value expression of the achievement of projected objectives, we consider that the risk-cost-value balance trilogy tends to descend to an unfavorable value direction at any increasing oscillation of risk or cost. From the point of view of the number of reported nonconformities, the graphical analysis does not show that there is a predictable and

correlated trend between the risk of increasing the number of nonconformities signaled and their value expression.

Conclusions

By applying internal control rules and procedures at all hierarchical and functional levels, the entity aims to achieve the proposed objectives. The public managers must ensure the development, approval, implementation and improvement of organizational structures, methodological regulations, procedures and evaluation criteria to meet general and specific internal / managerial control requirements. Requirements of a viable internal control system are: adaptability - to size, complexity and environment of the entity; universality - target all levels of leadership and all activities / operations; uniformity - be built with the same "instrument" in all public entities; adequacy - provide reasonable assurance that the entity's objectives will be attained; economy - the costs of implementing the internal control system are inferior to the benefits resulting from it; compliance - be governed by the minimum management rules contained in internal managerial control standards.

Limitations of internal control. Internal control can only provide reasonable assurance that the entity's objectives are met. The probability of their realization is affected by the inherent limits of internal control, for example by internal and external factors that cannot always be taken into account from the date of implementation of the inward control system. The costs of implementing internal control must not exceed the expected benefits. The human factor fulfills a decisive role in any internal control system. Inattention, inappropriate professional training, indifference, abuse can lead to the inefficiency of internal control. Formalizing the implementation of the internal control system may lead to its inefficiency or financial loss.

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CASE STUDY ON THE REORGANIZATION OF COMPANIES WITH THE APPLICATION OF HAIRCUTS ON RECEIVABLES

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Abstract
The paper addresses aspects of the insolvency procedure, in the current domestic and international economic context in which companies operate economically in the event of bankruptcy. Bankruptcy laws are essential for a well-functioning economy, which, if well designed, facilitates better risk-sharing and offers better incentives not only to avoid bankruptcy but also to avoid further distortions.
A company in insolvency, during the observation, reorganization or bankruptcy period is subject to the provisions of the Law on insolvency and insolvency prevention procedures.
We have presented a case study that captures the purpose of the insolvency procedure versus contradictions and legislative gaps concerning the reorganization of companies applying the haircut of receivables.

Keywords
Reorganization procedure; haircut of claims; reorganization plan; debtor.

JEL Classification
G33, K33, M40

Introduction

The international collaboration of states has created modern regulations in addressing the global phenomenon of insolvency. In this context, giving a second chance to the honest debtor and supporting it in its business recovery efforts becomes the fundamental principle of company reorganization.
There is a strong argument that a bankruptcy procedure should deliver an ex post efficient outcome, that is, it should maximize the total value (measured in money terms) available to be divided between the debtor, creditors and possibly other interested parties, e.g., workers (Hart, O., 1999).
The identification of the most efficient insolvency system has been an important element, which has resulted in the on-going adaptation and modernization of state laws, and Romania has not made an exception. The Bankruptcy Code, adopted in the United States in 1979 and substantially modified in 1984, aims at supporting traders/ consumers in restructuring their financial activity, enabling a new start (U.S. Bankruptcy Code, 2019).
At European Union level, more than 200,000 businesses are affected annually by bankruptcy, which leads to the loss of more than 1.7 million jobs each year. Reorganization

through insolvency is perceived as a contradiction because the public perception leads us to the idea of the definitive collapse and liquidation of the company.
Since the middle of the last century, however, there has been a change of the main direction. In the US law, the reorganization procedure was introduced in order to save a company; in terms of its social impact, the continuation of commercial relations and the fees collected to the budget would be more valuable if the company were kept in operation than in the case of liquidation/ bankruptcy. The reorganization of companies thus becomes an essential attribute of the free, functional market economy, a feature that justifies free competition.
The central role of bankruptcy in modern capitalist economies is to encourage reorganization (Stiglitz, J., 2003).
Recent debates divide insolvency proceedings into two broad categories: those favoring creditors, which encourage the liquidation of the insolvent debtor, with the main example of the UK legislation, and those favoring debtors, giving insolvent debtors a chance to redress, illustrated by the US legislation.
The Romanian legislation on insolvency has taken over, adapted and implemented the "best practice" rules at international level, in particular the recommendations of the World Bank, synthesized both in the *Principles of Insolvency Effectiveness and Creditor/ Debtor's Rights*, and in the *Report on the Observance of Standards and Codes (ROSC)* and the *European Commission Recommendations* and the *UNCITRAL Legislative Guide*.
In terms of business restructuring, internal rules (Law 85/2006 on insolvency proceedings, which was amended in 2014) are based on the recommendations, rules and interpretations inspired by the European Commission's communications:
- December 2012 - European Commission Communication to the European Parliament, the Council and the Economic and Social Committee, entitled "A new approach to business failure and insolvency";
- March 2014 - European Commission Communication entitled "The Commission recommends a new approach to rescue business and give honest entrepreneurs a second chance".

Brief introduction of the terms analyzed in this study
Insolvency is the state of the debtor's patrimony characterized by insufficient funds available for the payment of its due debts.
The list of creditors includes all claims/debts incurred before the opening date of the current, due proceeding, under condition or litigation, accepted by the legal administrator, following verification.
Reorganization is the procedure that applies to the debtor (legal person), in order to pay its debts in accordance with the list of creditors. The reorganization procedure involves drawing up, approving, implementing and complying with a plan, called reorganization plan.
Under the Romanian insolvency law (Law 85/2014 on Insolvency Prevention and Insolvency Proceedings), *the reorganization plan* shall indicate the recovery prospects in relation to the possibilities and specificities of the debtor's activity, the available financial means and the market demand for the debtor's offer. It shall include:
a. The payment list of the claims/debts entered in the list of creditors,
b. The due date for the implementation of the plan, which may not exceed 3 years, calculated from the date of its confirmation by the syndic judge,
c. Other measures for its implementation, namely:
   i. The debtor's operational and/or financial restructuring;
   ii. Modification of the share capital structure;
   iii. Downsizing, by liquidating some assets from the debtor's patrimony, etc.

Haircut on debts/claims. The debtor in insolvency proceedings may be reorganized if a part of its debts entered in the list of creditors is cancelled. This debt discharge has to comply with an essential condition, i.e. no creditor can receive less than s/he would receive in the event of bankruptcy (of course, in the situation where the assets are capitalized and the funds distributed to the creditors). By reorganization, the debtor must present to its creditors a better coverage of their claims than in the case of bankruptcy, and the added value derives from the debtor's business activities.

Main stages of company reorganization in Romania

a. Opening insolvency proceedings. The insolvency proceedings are triggered based on an application submitted to the court by the creditors or by the debtor itself.

b. Statement of the reorganization intention. If the request to initiate the procedure is filed by a creditor, the debtor shall have 10 days to declare its intention to reorganize. If the claim belongs to the debtor, the latter shall declare its intention to reorganize when it registers the application. If the debtor retains the right to manage the business, it shall carry out its activity under the supervision of the legal administrator, up to the due date of the proposed reorganization plan, called the observation period.

c. The report on the causes that generated the insolvency of the company; Conclusions about the chances of the debtors' reorganization. Within 40 days, the legal administrator shall prepare the report on the causes that generated the insolvency, indicating whether there is a real possibility of effectively reorganizing the debtor's activity. The financial-accounting information in the financial statements, together with data on the activity sector, the market evolution, etc. underlie the analysis of the debtor's situation during the observation period and during the period prior to insolvency proceedings. Subsequent to the analysis, by his/her professional reasoning, the legal administrator shall conclude whether the debtor has the material, financial, managerial, etc. basis in order to reorganize itself.

There are conceptual models of analysis in order to predict bankruptcy and to analyze the impact of the factors that determined the companies' insolvency; however, in order to substantiate/ support the debtor's reorganization decision, further analysis is needed.

The mathematical models used in order to predict the bankruptcy risk have resulted in the use of several shares/rates determined based on specific financial statement indicators, to which certain weights are allocated, so that their sum reveals a global indicator, i.e. the score. Different scores make it possible to distinguish "healthy" businesses from those in difficulty at a certain point in time, but it is unclear which variable should be modified in order to trigger/ raise the idea of relaunching the company's activities.

d. The preliminary list of creditors encompasses all claims incurred prior to the date of opening the current, due procedure, under condition or litigation, accepted by the legal administrator, following verification. It can be disputed by any interested party.

e. Evaluation of the assets from the debtor's patrimony under insolvency proceedings.

Given that the creditors' guaranteed claims/debts shall be entered in the consolidated list of creditors, the debtor's assets shall be evaluated by an ANEVAR independent assessor.

The evaluation of the debtor's asset is also important in terms of bankruptcy calculation. The bankruptcy calculation is a simulation of the hypothesis where a debtor goes into bankruptcy proceedings. The calculation is specific to the reorganization plan, in order to verify the condition that no creditor would receive through the plan less than it would receive in the event of bankruptcy.

f. Consolidated list of creditors. If the preliminary list of creditors is not contested, the amount of the claims/debts shall remain unchanged.

g. Registering the reorganization plan. Within 30 days after the publication of the consolidated list, the reorganization plan of the debtor's activity will be drawn up. It can be proposed by the debtor, by the creditors or even by the legal administrator.

h. Haircut on claims. A company in the insolvency proceedings may be reorganized, benefitting from a cancellation of the debts entered in the list of creditors.
The reorganization plan should provide for a better coverage of the creditors' claims than the distributions that would derive from the liquidation of assets in the event of bankruptcy.
i. The procedure for approving the reorganization plan. The reorganization plan shall be registered at the Tribunal, communicated to the legal administrator (if the latter does not propose it) and to the creditors and it shall be mentioned in the Trade Register, to which the debtor belongs. The Judicial Administrator shall convene the creditors' meeting within 20-30 days in order to vote on the plan.
The plan is voted on categories of claims:
- Claims that benefit from preference rights
- Salary claims
- Budgetary claims
- Claims of indispensable creditors
- Other chirographic claims.

The plan shall be accepted by a category of claims if it is accepted by the majority from the respective category of claims.
j.The confirmation of the reorganization plan shall be performed by the syndic judge within 15 days from the date when the minutes of the creditors' meeting were submitted to the court.

The purpose of insolvency proceedings versus contradictions and legal gaps in the reorganization of companies by implementing the haircut on claims
The purpose of insolvency proceedings. "The establishment of a collective procedure in order to cover the debtor's liabilities, granting it, whenever possible, the opportunity to redress its activity ..." (Law 85, 2014)
Contradictions and legislative gaps. The debtor in insolvency proceedings is entitled to a partial debt discharge through the reorganization plan. This provision is beneficial to the debtor, but the law also provides the creditors with such a solution, so that no creditor can receive within the reorganization less than it would receive in case of bankruptcy.
Debt relief helps the debtor to survive, but the fiscal effects of this solution must also be analyzed because the reorganization must not be jeopardized.
The fiscal effects triggered by the reorganization are:
- Registering the list of creditors;
- Registering the haircut on claims.

The application/ interpretation manner of the various regulations applicable to the situation is unclear. Moreover, the different interpretations give rise to additional obligations in the debtor's task. The first contradiction concerns the nature of debt cuts, i.e. whether these debt cuts lead to the recognition of certain income; if we are talking about income recognition, it is important to know whether these incomes are taxable or not.
Implementing the reorganization in the current Romanian fiscal context
Since the fiscal law identifies only non-taxable incomes, we can only conclude that what is not taxable will be taxable. Therefore, if the income resulting from the cancellation of some debts is not classified as non-taxable, consequently, it may be taxable.
The additional obligations (profit tax) generated by the implementation of the reorganization concern:
- The registration of the consolidated list of creditors by recording the income from the cancellation of the claims from the accounting records, not recorded in the list (we are talking about those creditors of the company who have not filed claim/debt statements for the enrolment in the list of creditors)

- The registration of the reorganization plan and of the income resulted from the cancellation of the debtor's debts.

This interpretation may not necessarily be clear as long as we have other types of regulated income, such as "upfront revenues" that are not likely to generate a tax on profits or contingent debts. In practice, the opinion of the tax body is that the income from debt cancellation is taxable.

At international level, the situation is different:

- The US specific tax legislation qualifies debt cancellation as part of the category of exceptions to taxable income. For reference, these legal provisions are stipulated in the Internal Revenue Code Section 61(a)(12). This law says that "the income from discharge of indebtedness" is included in a person's gross income for the year. The tax laws also spell out specific circumstances when a person shall not have to pay tax on canceled debts. These are called exclusions, which mean that the amount shall not be included in a person's taxable income. There are several exclusions available, but only three of them apply to the situation of canceled mortgages. These three exclusions are for:
  - Debt canceled in bankruptcy proceedings,
  - Debt canceled when the person is insolvent, and
  - Debt that qualifies under the Mortgage Forgiveness Debt Relief Act.

Each of these exclusions have their own set of criteria and reporting procedures

- In Germany, the revenue from debt relief under insolvency proceedings is subject to reduced taxation.
- In France (Article 80 Loi de impôt sur le revenu) – the law provides for the forgiveness of the debts canceled through the reorganization plan.

Case study on the reorganization procedure of a Romanian company, under the proposal of a reorganization plan with haircut on claims

Going into payment default due to the non-recovery of the debts held against other companies, the debtor "A" SRL declared its insolvency, subject to the communication of the intention to reorganize.

The company entered into insolvency proceedings in October 2016.

The preliminary list was drawn up by January 2017.

After finalizing the evaluation of assets and the contestations to the preliminary list, the consolidated list of creditors from October 2017 was finalized with the following claim categories:

- Guaranteed claims
- Budgetary claims
- Chirographic claims

Under the accounting provisions, the consolidated list of creditors had to be recorded in the accounts, which generated an additional profit tax at the end of 2016.

Within 30 days from this date, the debtor proposed a reorganization plan with haircut on claims, as follows:

Guaranteed claims – paid in full by the debtor;

Budget claims – paid in full by the debtor;

Chirographic claims - which the debtor paid in proportion of 10%, in relation to the bankruptcy calculation (if the company had liquidated the guaranteed and unsecured assets, it would have covered only the guaranteed claims.

By reorganization, it was estimated that it would pay also (in addition) the guaranteed and the budgetary claims - in full - and the chirographic claims - only 10%).

The reorganization plan was approved by the creditors and confirmed by the syndic judge in December 2017.

At that point, the list being final, it had to be recorded.

Therefore, in March 2018, when the debtor was in the first quarter of the reorganization plan, it recorded a due profit tax liability equivalent at least to the tax entailed by the registration of the income resulted from the registration of the list of creditors and of the reorganization plan.
These obligations of certain, liquid and exigible nature, being huge, could cause the debtor's bankruptcy; thus, the debtor would go back into payment default and, of course, to bankruptcy.

Conclusions

The limiting factors of the reorganization procedure in Romania.

- Implementing the European Commission's recommendations on insolvency and not corroborating the insolvency regulations (including the principle of encouraging a second chance for the debtors in insolvency proceedings) with specific national (fiscal) provisions;
- The reluctance of tax authorities to cooperate and encourage the reorganization of the debtors in insolvency proceedings, the main reason being that there are no risk profile analysis models for these debtors in order to conclude upon the reorganization of the company's activity;
- Lack of impact studies on frequent legislative changes. For example, until its repeal, the Old Romanian Tax Code (Law 571/2003) was amended/ completed 138 times; since its adoption, the new Fiscal Code has been amended/ completed (Law 227/2015) 14 times over 2 years;
- Unclear / contradictory / insufficient regulations regarding the interpretation of legal provisions and the insufficient professional training of inspectors/ the abusive nature of the controls carried out by state institutions, resulting from the many litigations settled in favor of the taxpayers in the reorganization procedure.

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THE URBAN DEVELOPMENT INDEX - A PROPOSAL FOR THE ROMANIAN CITIES

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Abstract

Due to the fact that transport facilities allow facile movement of inhabitants across continents and mobility is rapidly increasing, assessing and monitoring the urban development in the nowadays context when the urban areas are the main economic and social evolution driver has become increasingly important both for policy makers, and for the business environment. Therefore, starting with the human development index and using publicly available data we propose in this paper an aggregate index that can be used for monitoring the urban development for the case of the Romanian cities. The index will be used to assess the urban development of the Romanian cities, over the period 2009 – 2018, clustered according to the criteria used in the Regional Operational Program.

Keywords: urban development, aggregate index, regional development program

JEL Classification

I14, I24, C25, C35

Introduction

The main objective of the paper is to assess the evolution of the urban development of the Romanian cities using a multi-criterial approach, including aspects related to education, longevity (health), employment and infrastructure, over the period 2006 – 2017.

Literature review and general framework

The specific scientific literature provides a strong theory linked to the use of the HDI index, which actually provides a quantitative assessment of human capital. The HDi index includes and characterizes the human development level in the analyzed countries and regions. (Gregory Mankiw, David Romer, David N. Weil, 1992)

An important issue is the comparation between the Human Development Innovation Fund (HDIF) and HDI showing human development with flow variables offering a better human development performance in terms of health and education than the traditional measure which is a mixture of stock and flow variables. (Hou, Walsh and Zhang 2014)

Methodology and data

The methodology proposed in this paper is based on the general methodology proposed by two aggregate indexes. The most prestigious among them is the Human Development Index which is constructed by the aggregation of three main dimensions: health, education and economic development. The second is the human local development index (IDUL), proposed for the Romanian municipalities in the Competitive Cities report of the World

Bank. The index proposed by the world bank includes four dimensions, altering one of the three dimensions included in HDI, namely the economic one, and adding another one referring to infrastructure. The main limitation of IDUL is represented by the fact that it is very difficult to compute on a yearly basis and provide continuity in this way since it uses data that are not calculated on a yearly basis and as a consequence are not publicly available. Another important limitation of the index is represented by its computation method which is data driven and does not allow for easy replicability as in the case of the human development index (Oţoiu, Bere & Silvestru, 2017).

Thus, we propose an alternative aggregate index entitled the urban development index that will be easily computable on a yearly basis for all Romanian Urban areas (cities and municipalities) Even though the index uses proxies based on available data and its values might not permit comparison among different type of urban areas, analyzing its dynamic will help us reach the objective of the paper.

The index is constructed by aggregating the following four dimensions: education, longevity, economy and infrastructure. The second dimension replaces the health dimension and is proposed as an approximation of the replaced one. The first three dimensions are based on a single variable while the fourth dimension includes five individual variables. All eight variables are composite variables being standardized with the help of a ninth variable, namely population so that they are comparable across and among cities with significantly different sizes. The data for all nine variables are available in the TEMPO database of the National Institute of Statistics for all urban areas in Romania.

Table no. 1 Variables and codes

Variable	Tempo Code	Dimension	Period
Population enrolled in school	SCL103D	D1	2006 - 2017
Number of deaths	POP206D	D2	2006 - 2017
Average number of employees	FOM104D	D3	2006 - 2017
Number of existing houses	LOC101B	D4.1	2006 - 2017
Available green area	GOS103A	D4.2	2006 - 2017
Length of running-water system	GOS106B	D4.3	2006 - 2017
Length of gas system	GOS116A	D4.4	2006 - 2017
Length of sewage system	GOS110A	D4.5	2006 - 2017
Total population	POP108D	-	2006 - 2017

Sursa: Author's work

The steps of the methodology are as follows:

1. For each individual variable an average of three years is computed. Thus, for each year the value of the indicator is represented by the average of the previous three years.
2. Each individual variable is standardized using population so that indicators measured as unit/inhabitant are obtained.
3. Each individual variable is rescaled so values between 0 and 1 are obtained. Values close to 0 represent a very poor development level while values close to 1 show a high development level.
4. For the five variables included in the fourth dimension, an aggregated indicator is computed so that it represents the dimension.
5. The four dimensions are aggregated using the following system of weights: 20%, 20%, 20% and 40%.

Table no. 2 Dimensions and their structure

D1: Education	D2: Longevity	D3: Employment (Economy)	D4: Infrastructure
Population enrolled in school / Total population	Number of deaths / Total population*	Average number of employees / Total population	Number of existing houses / Total population Available green area / Total population Length of running-water system / Total population Length of gas system / Total population Length of sewage system / Total population

Sursa: Author's work

Empirical results

After computing the index for all 320 urban areas of Romania five clusters are constructed using the clustering mechanism used by the Regional Operational Program (ROP) over the programing period 2007 – 2013.

The first group includes the capital city and the seven large cities, one, for each region, named concentration poles, namely: Cluj-Napoca, Iasi, Timisoara, Craiova, Constanta, Ploiesti and Brasov.

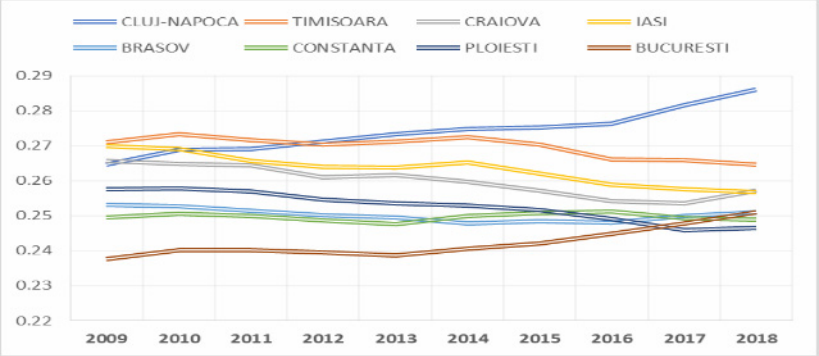

Fig. no. 1 Evolution of the index for the seven growth poles and Bucharest

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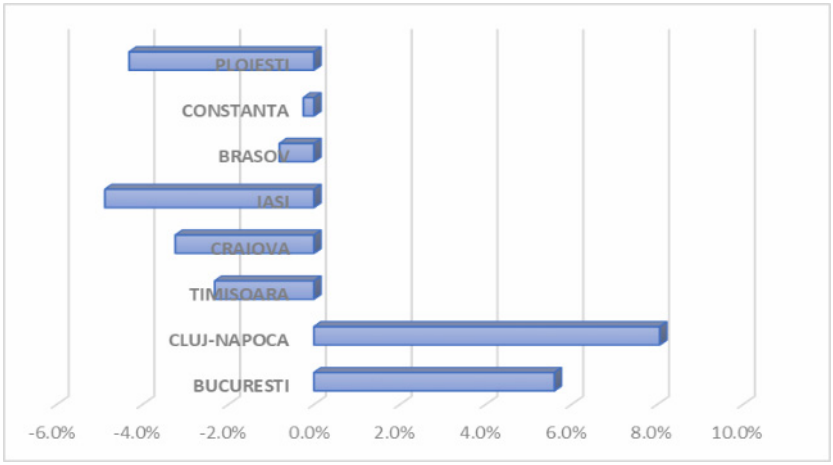

Fig. no. 2 Evolution of the index for the seven growth poles and Bucharest
Sursa: Author's work

Noteworthy is the fact that only two of the largest eight cities record an increase of the index over the 2009 – 2018 period. Cluj Napoca recorded an increase of almost 8%, and Bucharest recorded an increase of around 5.6%, while Iasi has recorded the highest decrease.

The second group includes the thirteen second tier cities named urban development poles: Suceava, Ramnicu Valcea, Baia Mare, Sibiu, Oradea, Pitesti, Targu Mures, Satu Mare, Arad, Deva, Bacau, Galati and Braila.

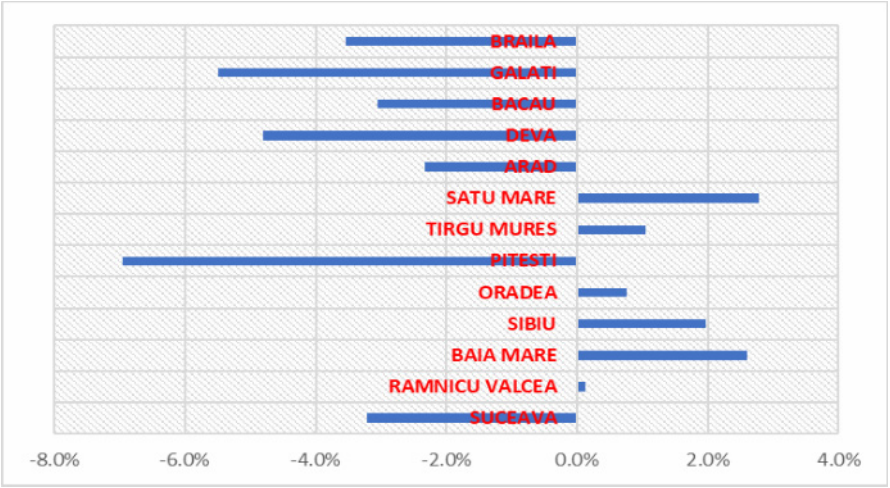

Fig. no. 3 Evolution of the index for the thirteen urban development poles
Sursa: Author's work

In the second group only six cities record an increase over the analyzed period and the remaining seven record decreases with the maximum decrease of almost 7% for Pitesti.

The fourth group includes all other urban areas with more than 10 000 inhabitants in 2007 (184 cities) which were cluster in the group of urban centers according to the Regional Operational Program. Among these 70 were supported through the ROP for developing their infrastructure, and the remaining have not submitted projects that were accepted for financing during the 2007 – 2013 period.

Table no. 3 Evolution of the index for the urban centers

The group of 70 cities supported through ROP	average	min	max
	0.4%	-14.2%	27.6%
The group of 114 cities not supported through ROP	average	min	max
	0.2%	-12.9%	16.2%

Sursa: Author's work

The average (computed as a simple arithmetic mean of the individual relative changes) relative increase of the index, for the 2009-2018 period is double for the group of cities supported through ROP. The highest increase of 27.6% is recorded by the city Pecica, while the largest decrease of 14.2% is recorded by Vaslui. Among the cities that have not received support the highest increase is recorded by Bolintin Vale, while, the highest decrease is recorded by Rovinari.

Finally, the last group includes all other urban areas, with less than 10 000 inhabitants, which were not eligible for infrastructure projects under the Regional Operational Program.

Table no. 4 Evolution of the index for the urban areas with a population under 10 000 inhabitants

Cities with under 10 000 inhabitants in 2007, not eligible for ROP	average	min	max
	5.2%	-23.5%	43.8%

Sursa: Author's work

These cities have recorded an average increase of over five percent, with the largest decrees of over 23% recorded by Ulmeni, and with the largest increase of 43.8%, recorded by Racari.

Conclusions

The proposed index for assessing the urban development incorporates four dimensions, replacing the health dimension of the human development index with a longevity dimension and adds a new dimension measuring the development of the infrastructure. Each dimension includes individual indicators available on the Tempo database of the National Institute of Statistics. For replicability purposes the approach proposed is not data driven and assigns a-priori decided weights to the indicators considering all individual indicators in a dimension equally important. The initial 3 dimensions have a 0.2 weight while the infrastructure dimension is twice as important having a 0.4 importance.

Among the largest eight cities, namely the concentration poles and the capital city, only Cluj-Napoca and Bucharest record an ascending evolution, having therefore better development level than they had at the beginning of the period.

Among the thirteen urban development poles Baia Mare and Satu Mare record the highest increase while Pitesti records the highest decrease in development level.

The average increase of the index among the urban centers supported through ROP is 0.4% while the average increase among those with no projects financed through ROP is only 0.2%.

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ORGANIC PRODUCTION IN ROMANIA. PERSPECTIVES IN EUROPEAN CONTEXT

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Abstract
Organic food products are a "must" for consumers who aim at a healthier lifestyle based on clean food and a friendly development of human society, in harmony with the environment. Orientation towards organic products is increasingly present in the European population, which also has the material means to purchase these products, which are more expensive than conventional products. This paper aims at presenting the organic products sector at European and national level. The data needed for research were taken from national and European statistics. Organically cultivated areas at European level have evolved over the last period, over the past 5 years, the recorded increase being of over 25%. Although ecological production may represent a market niche, Romania's evolution is atypical, contrary to the European trend. Thus, during the period when statistical data are reported at European level (2012-2015), the number of Romanian farmers has fallen by almost half and the ecologically cultivated area has decreased by 10%. National support measures for ecological agri-food producers have proved to be insufficient, and the ministry of agriculture's policies inefficient.

Keywords: ecological production, evolution, European Union, Romania

JEL Classification: Q01, Q15, Q57

Introduction

The term ecological used for agricultural production in Romania is similar to the organic or biological variants used by other EU Member States. The ecological production system has the function of producing cleaner food, in line with the requirements of human metabolism, in conjunction with the conservation and development of the environment. One of the main purposes of ecological agriculture is the production of fresh and authentic agri-food products that respect natural and environmental factors. The production and marketing of ecological products, focusing on finished products with high added value, the development of exports towards areas with high economic potential and the penetration of Romanian exports into new markets are some of the priorities of the National Export Strategy (SNE) 2012-2016 in the field of ecological agriculture in Romania.

1. Literature Review

Koklic et al (2019) analyses the consumption patterns of organic food in Slovenia. The research included a survey conducted on 462 adults, examining the relationship between consumption tradition and intentions to buy ecological food, ecological concern, or personal

rules. The results have shown that the tradition in ecological food consumption influences purchasing decisions more strongly than personal rules or environmental concerns.
Besson et al (2019) shows that specific attributes of an organic food can frequently lead to a health halo effect. Consumers believe that ecological food is characterized by a lower energy value compared to conventional products due to the reactivation of positive implicit evaluations and / or the reactivation in memory of a semantic association between the "organic" and "non-caloric" concepts. By applying the Bayesian Model and statistical processing over two samples with a total of 420 users, the authors have demonstrated that the ecological label leads to an underestimation of the caloric value, and the halo effect is not attenuated by implicit evaluations Proshchalykina et al. (2019) presents the peculiarities and characteristics of the world market of ecological agriculture, highlighting the existing demand and supply. The price of organic products must cover the differences in yield and productivity, the need for crop rotation, harvest and storage losses, the cost of research and development. The authors have identified the development factors of the ecological product market, systematized in the following groups: organizational and legal, financial and economic, technological and socio-psychological. According to the authors, a systematic approach to the development of production on an investment-innovative basis, the creation of an institutional environment, the sustainable development of rural territories, the development and implementation of strategies for the development of vertical integrated structures are necessary actions, taking into account the territorial differentiation for the development of the ecological agricultural products. In an analysis of ecologic agriculture production in the vegetable sector, Kirchmann (2019) shows that a relevant comparison between organic and conventional crop systems should include the environmental consequences caused by changing land use and lost ecosystem services. The concept of ecological agriculture is generally based on philosophical principles about nature rather than on biological scientific arguments. There is no scientific evidence to support the abandonment of synthetic mineral fertilizers as nutrients for crops, and the scientific community is bound to follow rigorous scientific criteria in the analysis of ecological agricultural production. Hurtado-Barroso et al (2019) shows that the production and consumption of ecological food have steadily increased in recent years worldwide, despite the low productivity of ecological crops. Analysing the impact of a diet based on ecological food, the authors point out that ecological agriculture appears to contribute to maintaining good health and to reducing the risk of developing chronic diseases. However, scientific evidence is relatively low and long-term studies are needed to make sure that an ecological diet is healthier than a diet that includes conventional foods. Oncioiu et al (2019) analyse the trends of the ecological grain market in Romania, taking into account the ecological wheat market and production in large farms versus individual exploitations. The research results indicate that the negotiating power of legal buyers is significantly higher than that of small ecological wheat producers without a legal form of organization that benefit from significantly reduced prices. The conclusion of the article is that ecological wheat can be one of the most profitable businesses in Romania for the big agricultural producers. Petrescu et al (2017), propose a study on the attitudes of Romanian consumers in relation to ecological food. The survey on consumer attitudes towards organic food targeted 672 consumers in Romania. The results have shown that a positive attitude of consumers towards ecological food will further increase purchasing intentions. In view of the increase of the Romanian ecological production, Vietoris et al (2016) analysed the opinions and preferences regarding the ecological food products of 350 respondents in Romania. The findings of the study show that for Romanian respondents the most powerful reason for purchasing ecological food is health care. Respondents indicated they prefer ecological food purchases directly from manufacturers, followed by that from supermarkets, specialized stores or pharmacies. Respondents are willing to pay for ecological food by 5-10% more

than for conventional foods. Năstase and Toader (2016), show that ecologic farming is an integral part of sustainable development strategies and a viable alternative to conventional agriculture in Romania, but rigorous ways of certifying ecological production are required. Ecological labelling can be a quick and easy way for consumers to recognize ecological products and a guarantee of compliance with quality standards. An assessment of the ecological potential of the Romanian fisheries sector is carried out by Stanciu et al (2015). The authors state that although the sector has potential, there is little interest from Romanian farmers and the investments necessary for the development of the sector are high. Research made by Stanciu (2014) shows that ecological products can be a valid alternative to Romanian agriculture. The natural resources for ecological production in Romania are represented by large agricultural areas that have not been conventionally cultivated for a long time, the presence of a small number of industrial polluters and the tradition of the national agricultural sector. The reduced development of intensive agricultural production can be a strategic advantage in the development of the Romanian ecologic agricultural sector.

2. Material and methods

Information on the dynamics of ecological production in Romania, the number of certified agricultural producers, the criteria and agencies specialized in organic certification have been collected from the MARD Ministry of Agriculture and Rural Development press releases. For European statistics on organic production the Eurostat database was consulted. Data were processed statistically, graphically and commented. The results obtained were correlated with the research literature, in order to obtain the best conclusions.

3. Ecological production conditions in Romania

The terms ecological, organic or biological are equivalent in meaning, their use being associated with the traditions of certain geographic areas (Stanciu, 2014). According to the national regulations, the ecological term is regulated in Romania, ecological production being defined as obtaining agri-food products without the use of chemical synthesis products, according to the rules and principles of ecological production.

European Union legislation The EU defines ecological production as a global system of agricultural and food production management, combining best environmental and climate action practices, high biodiversity, natural resource conservation and high animal welfare standards, and high production standards that meet the requirements of more and more consumers seeking products obtained through natural substances and processes (European Parliament and Council of the European Union, 2018). Organic products are certified in Romania by a recognized control and certification body (Government of Romania, 2000). The objectives, principles and rules applicable to organic production are governed by specific Community and national legislation. According to MARD (2019), along with the definition of the organic production method in the plant, livestock and aquaculture production sectors, the rules regulate processing, labelling, trade, import, inspection and certification issues. The provisions on the labelling of products obtained from organic agriculture laid down in Regulation ((EC) no. 834/2007 of the Council on ecological production and labelling of ecological products and Regulation ((EC) no. 889/2008 of the Commission laying down the rules for the application of Regulation (EC) 834/2007 aim to provide consumers with confidence in ecologic products, obtained and certified in accordance with strict production, processing, inspection and certification rules. Ecological products are labelled with specific labels and logos when marketed, the national and Community legislation specifying the manner of award of the ecologic trademark and the labelling requirements (Table 1).

Table no. 1 Ecological label

Trademark	Logo	Observations
European trademark		It offers recognition to certified ecologic products in the European Union. The logo is accompanied by an indication of the place of production of the agricultural raw materials (EU, non-EU and / or the name of the country where the product / raw materials were obtained). The label shall specify the code number of the control authority / control body regulating the activity of the operator who carried out the last production or preparation operation. The use of the EU logo for ecologic production is optional in case of products imported from third countries.
National trademark		The "ae" logo, MARD property, guarantees that the product comes from ecologic agriculture, being certified by an approved inspection and certification body. The use of the logo is done in accordance with Annex 1 to the Common Order amending and supplementing the Annex to the Order of the Minister of Agriculture, Forests and Rural Development no. 317/2006 and of the president of the National Authority for Consumer Protection no.190 / 2006 approving the Specific Rules on the labelling of ecologic agri-food products.

Source MADR, 2019

Ecological producers must undergo a rigorous certification process and a conversion period of at least two years in order to pass from the conventional production to the organic one, their work being verified by inspection and certification bodies for the purpose of assessing compliance with the rules in effect on ecologic production. In Romania, the control and certification of ecological products is ensured by 15 private inspection and certification bodies, approved by MARD in accordance with Order no. 181/2012. The approval of the Inspection and Certification Bodies by MARD is preceded by their accreditation by the Romanian Accreditation Association (RENAR) in accordance with European Standard EN ISO 45011: 1998 (MARD, 2019). RENAR accredits the control bodies in accordance with the requirements of European Standard EN ISO / CEI 17065: 2012 "Requirements for Bodies Certifying Products, Processes and Services" or other equivalent accreditation bodies in the European Union that are signatories to the Multilateral Recognition Agreement for European Accreditation EA -MLA and approved by the Ministry of Agriculture and Rural Development MARD to carry out this activity (MARD, 2019).

4. European ecological food production

The total agricultural area for ecological production at EU level has been steadily rising in recent years. From a 3% share in 2000, ecological crops reached over 7% of total agricultural areas at European level in 2017 (an absolute value of 12.6 million ha) (Eurostat, 2019).

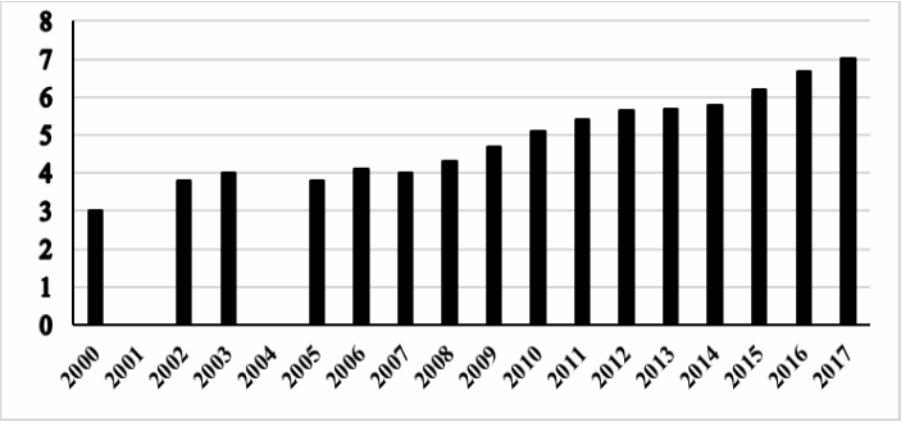

Fig. no.1 The share of agricultural areas allocated to organic agriculture in the EU
Source Eurostat, 2019

Compared to 2012, the total increase in areas allocated to organic crops at European level has exceeded 25%. The Eurostat analysis proposes an assessment of the weight of the ecologically cultivated areas, relative to the total agricultural area. According to European statistics, the largest shares of the agricultural areas allocated to organic production are recorded in Austria (23.4%), Estonia (19.6%) and Sweden (19.2%), followed by Italy (14.9%), Czech Republic (14.1% Latvia (13.9%) and Finland (11.4%). With a 1.9% share, Romania is well below the EU average and occupies one of the last positions in the ranking, outpacing only Ireland, Iceland and Malta. In absolute terms, Spain (2,082,173 ha), Italy (1,908,570 ha), France (1,744,420 ha) and Germany (1,138,372 ha) occupied the top positions in the list of organically cultivated agricultural areas at European level (Figure 2).

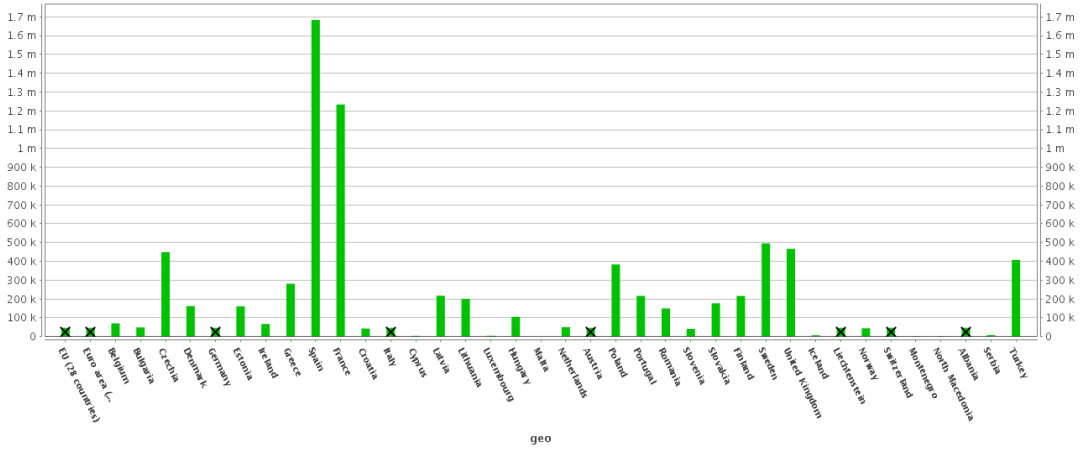

Fig. no. 2 The ranking of organically cultivated agricultural areas at European level
Source Eurostat, 2019

Summing up, the organically cultivated agricultural areas by the 4 Member States exceeds 54% of the European total (12,560,191 ha in 2017). These regions are also the main market for ecological products. Although an increase in domestic ecological production has been registered, Western Europe is the main destination for organic production in other EU or non-EU Member States.

5. Evolution of ecologic production in Romania

Romania benefits from fertile lands, favourable to ecologic crops. The existence of uncultivated agricultural lands (about 3 million hectares of land, according to Bio Romania, 2019) and of about 2 million small subsistence farms, are trumps for the conversion of indigenous agriculture to organic production. If there was a government support, with subsidies for production and processing, Romania could become one of the world's largest eco-producers.

According to Eurostat data (2019), in Romania 208,478 hectares were cultivated ecologically in 2017, less by 10% compared to 2012. The data presented by MADR (2019) show an increase in the agricultural areas allocated to organic crops as well as in the number of certified producers in Romania in the period 2010-2013, followed by a decrease in the last years (Figure 3).

Romania exports over 90% of ecologic products in the form of raw materials to partners in Europe where they are processed and marketed as finished products. The main destinations are Germany, Italy, Spain, Great Britain, Nordic countries (Bio Romania, 2019). On the Romanian market the range of organic products is restricted, most of the food being imported (canned vegetables, fruits, some bakery products).

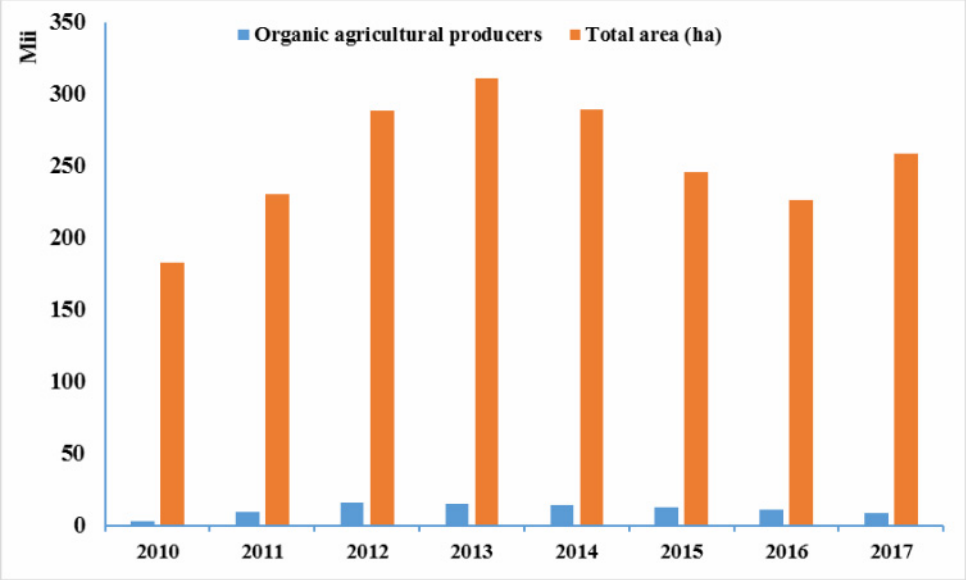

Fig. no. 3 Organically cultivated areas and certified producers in Romania

Source Data Processing MADR, 2019

In Romania, in the year 2017, the largest share of ecologic crops was allocated to cereals (84,926 ha), followed by industrial plants (72,388 ha) and pastures and meadows (50,686 ha). The least widely spread crops were soy and other leguminous (4,995 ha), potatoes and roots (666 ha), and vegetables (1,459 ha) (Figure 4).

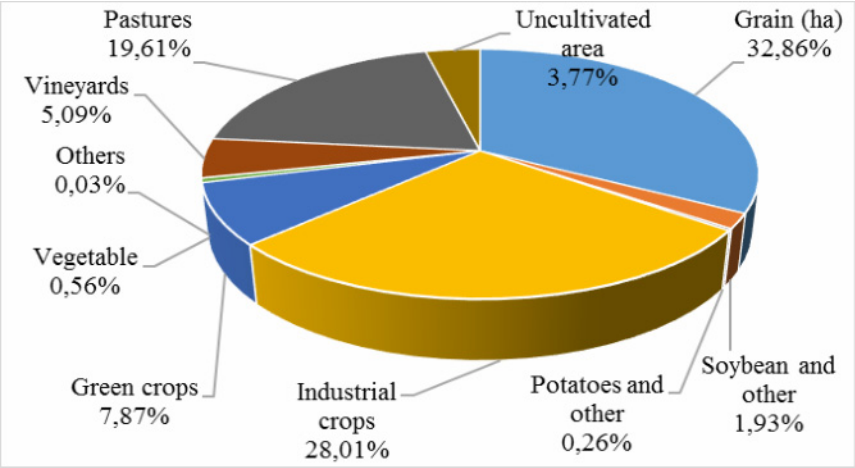

Fig.no. 4 Share of ecologic crops in Romania (2017) (2017)
Source MARD, 2019

According to the Business Hub study (2018), the most demanded organic products in Romania are milk, eggs, yogurt, fruit, vegetables and meat products. Total sales of ecologic products in Romania were estimated at about 10 million euro in 2018, accounting for less than 1% of the retail market, below the European average (5-6%). Similar to the situation in the Czech Republic and Hungary, the demand for organic products has increased in Romania after joining the EU, but the market has not matured.

Conclusions

Romania has significant natural resources with potential for the development of the ecological production sector. The main directions targeted by native producers are highly mechanized crops (cereals, industrial plants, meadows and pastures) that lead to raw materials for export. Although there is a high demand for organic products on the European market, domestic producers do not exploit these opportunities. Lack of government support measures, reduced investment in processing plants, insufficient knowledge of the European market or reduced entrepreneurial culture affect national agriculture, including organic production.

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THE IMPLICATIONS OF A MANDATORY rPET CONTENT IN THE SOFT DRINKS PLASTIC BOTTLES FROM AN INDUSTRY - RETAIL - CONSUMER RELATIONS PERSPECTIVE

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Abstract

The ongoing discussions about the uptake of recycled content in plastics packaging, sparked through the EU Plastics Strategy and the related European Commission's voluntary pledging campaign, as well as the ongoing legislative negotiations on the proposal for a Single-Use Plastics Directive (SUP), have to ensure at all times that the EU's Internal Market is safeguarded and that a level playing field is maintained for all packaging materials. Hence the need of performing an unbiased, high level assessment on the implications of the above mentioned initiatives over the beverages packaging supply chain, that is called to respond to an ever higher competitive and fluctuating market.

Keywords

recycled content, soft drinks, plastic bottles, single use plastic, extended producers responsibility, plastic strategy, beverages packaging

JEL Classification

Q32, Q56

Introduction

Recycled materials have been increasingly used in the packaging industry for a long time, mostly paper, cardboard, glass and steel-based products. The packaging industry has seldom used recycled plastics, mainly for safety reasons, especially for packaging in contact with food. However, technology has advanced over the last two decades and it is now possible to use some recycled plastics for food packaging. Under certain conditions, a few plastic polymers (mainly PET) can meet the necessary quality and food safety requirements as laid down in the EU Regulation 1935/2004 on Food Contact Materials, but these plastics are not applicable for all food and drink packaging's needs, [1].

There is a risk of toxic substances contaminating food with recycled plastics, which may contain a number of contaminants coming from cross-contamination during waste management that may not be known. The European Food Safety Authority (EFSA) has issued 140 positive scientific opinions on the safety of processes to recycle plastic for use in food contact materials, [2]. To date, the European Commission has not officially authorized any processes.

EFSA's risk assessment focuses on the start of the recycling process, not on the finished product that comes out at the end of it. Hence, the cumulative exposure is not taken into account by EFSA.
Current global economic conditions, depending on the fluctuating price of raw oil and the related price of new (virgin) PET, do not favor the recycling of plastics, even though the process has, overall, a lower carbon footprint. For example, the recycled PET (rPET) produced in Austria – country with a strong legacy of environment related enactments after having chaired the rotating Presidency of the Council of the EU - has a carbon footprint of 0.45 kg CO^2 - equivalent per kilogram. That results in approximately 80% less greenhouse gas emissions compared to virgin PET (2.15 kg CO^2-eq./kg), [3].

1. Packaging supply chain's voluntary commitments

In January 2018, as part of its EU Plastics Strategy, the European Commission launched a Pledging Campaign, calling on stakeholders to come forward with voluntary pledges to boost the uptake of recycled plastics. The objective is to ensure that by 2025, ten million tonnes of recycled plastics find their way into new products on the EU market, [4].
Stakeholders had until end September 2018 to submit their pledges. By end of 2018, the European Commission assessed them against the above-mentioned quantitative objective.
The major bottling industry actors have individually responded to the call, submitting ambitious commitments, on recycled content for plastics packaging, where possible (Table 1). Corporate voluntary commitments will allow each of the supply chain partners to commit and focus on those areas where they can make a difference, so they could continuously increase their sustainability efforts, including the uptake of recycled content for packaging.

Table no. 1 Voluntary pledges for boosting the uptake of recycled plastics in soft drinks bottling industry

Company	Corporate Commitments/Innitiatives	Start	Deadline	Framework conditions required
Coca Cola	min. 50% of recycled content for PET bottles	2017	2025	100% of raw materials to come from sustainable sources by 2020
Danone	phase 1: min. 25% of recycled content for PET phase 2: 33% of recycled content for PET	2015	(1) - 2020 (2) - 2025	EU "End of Waste" criteria to stimulate secondary raw materials (SRM) markets; domestic markets to allow rPET
Evian	100% recycled content for PET bottles	n.a.	2025	pioneering partnerships to redesign its packaging, accelerate recycling initiatives and zero plastic bottle waste
Ferrero	10% increase of recycled plastic	2009	2020	a common and agreed approach to bioplastics along their life cycle
Nestle	25% recycled content for PET bottles in Europe	2018	2025	n.a.
Pepsico	increase use of recycled content in plastics	2016	2025	access to secondary raw materials required
Mars	utilise recycled content in plastic packaging	2015	n.a.	wherever possible and legal
Mondelez	seeks to use recycled materials	n.a.	n.a.	where practicable, subject to food safety constraints
Tetra Pak	100% of all packages to be made from responsibly sourced, renewable materials	2010	n.a.	incentivise renewables to stimulate investment and production of bio-based plastics in Europe
Unilever	min. 25% recycled plastic content in packaging	2015	2025	n.a.

The numerous pledges submitted by the packaging supply chain suggest its will to fulfil their responsibility to find sustainable ways to manufacture their products, including investments in sustainable innovation. But the industry claims, in order to identify and

advance the appropriate investments, a number of framework (pre)conditions needed to achieve the commitments.

2. Key framework conditions for voluntary pledges on recycled content for plastic packaging

The ability of companies to boost the uptake of recycled content in their products will be influenced and/or conditional upon several factors highlighted below. Many of these factors are outside the control of the food and drink supply chain (i.e., the regulatory and fiscal landscape for packaging as well as market dynamics). This implies the need for actions on the part of EU policy-makers, Member States, waste management, and all other actors in the plastic packaging value chain. With this in mind, we have identified *9 key framework conditions*, as follows:

1. *Continuity of the EU Internal Market:* The legal basis of the Packaging and Packaging Waste Directive (PPWD) is Article 114 of the Treaty on the Functioning of the EU (TFEU), which protects the functioning of the Internal Market, [5]. Nevertheless, numerous provisions in the revised PPWD and Waste Framework Directive (WFD), as well as proposed measures under the Single-Use Plastics (SUP) Directive provide opportunities for Member States' initiatives that can potentially impact or otherwise restrict the free movement of packaging and packaged goods at national level, [6]. Any erosion of the EU Internal Market that results in divergent/disparate packaging measures across the EU will likely divert resources (financial & human capital) from innovation to legal compliance and hence adversely impact the potential for investments in sustainable innovations (including in packaging design, packaging materials and recycling/sorting technologies).

2. *No 'Plastics Tax'* (= waste based - own resource levy): The Multi-Annual Financial Framework (MFF) – i.e. EU budget proposal for 2021 to 2027 contains a proposal for a levy of €800 per tone on non-recycled plastic packaging to be collected at national level (capped at €1,000 per tone), [7]. There is also no guarantee that this revenue will be used for environmental and sustainability purposes, for example to invest in plastic recycling infrastructure or technologies. As such it represents a very significant diversion of industry resources away from the challenges of ensuring a Circular Economy in plastics. The Commission estimates the yield from the call at €7 billion per annum. This is more than twice the current total fees payable by industry in the EU for packaging Extended Producer Responsibility (EPR), which is approx. €3 billion per year. A diversion of this magnitude will seriously compromise the ability of industry as a whole to act on existing and/or future innovation programs.

3. *Full 'Net Cost'* Principle Transposition and Application of the for Packaging EPR Schemes across all Member States: Article 8a of the revised WFD outlines the Minimum Requirements for EPR schemes, [8]. These requirements include the 'net-cost' principle (i.e. taking into account revenues from recovered materials when ascribing costs to the obligated industry). This ensures that industry is responsible for the operational costs of collection (net of receipts from sales of secondary raw materials). Given the projected increase in costs of packaging EPR compliance in the future decade, the full application of the 'net-cost' principle will help ensure that industry has sufficient financial resources available to address obligations and voluntary commitments in respect of packaging.

4. *Consistency between the Essential Requirements & Eco-modulation*: There is an assumption that the soon to be revised Essential Requirements (Annex II of the PPWD,

[9], governing the composition and design of all packaging materials) and the pending guidance to Member States on eco-modulation will (i) provide a consistent, and harmonized, set of signals in respect of packaging design and (ii) preclude divergent/disparate member state provisions in relation to packaging design. This is why the Essential Requirements and the eco-modulation of fees need to be considered as two sides of the same coin and should be developed together.

5. *Availability of Secondary Raw Materials* (SRMs) at *Competitive Prices*: Plastic recyclate prices fluctuate according to market conditions and currently enjoy a price premium over virgin resin. Greater demand for recyclate driven by the collective pledges of companies as encouraged through the Commission's Plastics Strategy or mandated recycled content may magnify this discrepancy if the market fails to properly respond to this increased demand. There may come a point where this discrepancy is so great as to become punitive in terms of costs & margins, [10]. Companies are therefore dependent upon the existence of functional markets for SRMs by 2025 (with appropriate infrastructure available for sorting and reprocessing where they are needed to ensure sufficient scale).

6. *Availability of SRMs of Appropriate Quality* (as established by 'end-of-waste' criteria): Effective 'end-of-waste' criteria are a prerequisite to functioning markets for SRM. They are essential to provide the necessary reassurance to manufacturers, regulators and consumers in respect of recyclate use. This applies to health & safety considerations, in particular in food packaging and also functionalities related to performance (i.e., strength etc.). The overall benefits and drawbacks of the uptake of recycled content in packaging, including plastic packaging, should always be evaluated holistically from a life-cycle perspective, based on a case-by-case approach. 'End-of-waste' criteria also need to accommodate different uses/applications and this implies multiple criteria that exist in a hierarchy rather than a single set of criteria for any given material.

7. *Definition of 'Recycling'*: Any definition of recycling needs to include mechanical, organic and chemical recycling (e.g. depolymerization). The availability and acceptability of chemical recycling will be particularly important for difficult to (mechanically) recycle materials such as laminates/films. The development of and installation of chemical recycling plants will also help increase the availability of recycled plastics, especially of polyolefins. It will further help overcome risks related to food safety.

8. *R&D Support* under Framework Programs: Financial incentives that support close to market technologies for both materials and treatment technologies (such as chemical recycling) will be a key framework condition.

9. *Functioning EU Approval Process* for Use of Recycled Plastic in Food Contact Materials: The European Food Safety Authority (EFSA) has issued 140 positive scientific opinions on the safety of processes to recycle plastic for use in food contact materials. To date, the European Commission has not officially authorized any processes. Authorization would ensure harmonization across the EU and remove any legal uncertainty in trading SRMs in food contact applications. Food safety for consumers is the first priority for food and drink producers. It would also allow a 'pull' approach in terms of demand from the food and drinks sector.

These framework conditions need to be met prior to considering voluntary or mandatory requirements on recycled content. In the absence of such framework conditions, the uptake of recycled content could lead to a number of negative implications.

3. Potential unintended consequences of a mandatory recycled content target

Packaging producers are willing to incorporate more recycled content, but for some materials the pre-conditions are insufficient in terms of quantity and quality. A potential mandatory requirement/minimum legal target of recycled content in (plastic) packaging will affect the balance between the demand and supply of recycled materials in the EU. *Unintended consequences* would also impact packaging functionalities (e.g. health and safety), environment and society:

- *Increased prices:* The increase of recycled content in certain packaging may lead to environmental benefits, if less virgin material is used (less extraction of virgin raw materials and less waste to be eliminated). However, mandatory eco-design requirements for packaging regarding their content of recycled materials may lead to negative impacts on the packaging and recycling industries.
    - The production capacity of recycled materials and their prices depend highly on the type of material, access to the waste streams and current recycling technologies. The demand for recycled materials would increase, which at stable supply, could be overly market intrusive and distortive and would further increase the prices of the relevant recycled materials in the short/mid-term. This situation will lead to a disproportionate and uncompetitive increase of the cost of the final products for consumers.
    - The pledging exercise has already proven to be sufficient to incentive the market to take up recycled content for plastics, where possible, affordable and safe. A mandatory requirement could be overly prescriptive and market intrusive, potentially leading to artificial premium price settings and other unintended consequences.
- *Possible threat to the Internal Market:* A minimum EU mandatory target for recycled content for plastics would not prevent Member States to go beyond. This risks leading to diverging minimum mandatory recycled content targets in Member States which would constitute a barrier to the Internal Market.
    - *For instance,* a packaged product could be forbidden in one Member State because it does not meet a certain level of recycled content, while being available in another Member State where levels would be lower.
- *Trade barrier for EU exports/imports:* In addition, mandating recycled content in Europe, including in food packaging, might create trade barriers for EU exports.
    - *For instance,* China does not allow recycled content in food contact materials. Imports could be affected too. This also links up with traceability issues for imported packaged goods.
- *May not be legal or desirable for some materials:* For some materials, the use of recycled materials to manufacture packaging could negatively affect some of the functions of the packaging, such as the protection of the product and safety for consumers, or pose problems for product compliance, due to legislation that limits the content on some chemical components.

- Packaging materials that are in contact with food and drinks have to meet very strict requirements as laid down in the EU Regulation 1935/2004 and completed by EU Regulation 10/20112, [11]. Food safety for consumers is the first priority for the food and drink supply chain.

- In some cases, the use of recycled material for packaging that is in contact with food or drink may lead to an increased food safety risk. *For example*, mineral oil hydrocarbons derived from printing ink used in newsprint, which is commonly used to make recycled cardboard for food packaging, could lead to inflammation of internal organs, including the liver, spleen and lymph nodes. To limit this risk, a multilayer barrier film for dry food products has to be added to prevent the migration of potentially harmful mineral oils from the outer packaging into the food, which increases the weight of the package and decreases its recyclability.

- For some materials, using recycled packaging single-layer materials may decrease the strength of the packaging, as occurs*, for example*, in paper and cardboard products: the length of the pulp fibers decreases and therefore the structural resistance is lower. This can be solved by an increase of material used and would therefore entail a higher packaging weight for a similar function.

- The few existing recycled content laws, such as in California, contain many exemptions and flexibility for compliance to account for the aforementioned challenges. *For instance*, containers used to hold materials regulated by the U.S. Food and Drug Administration (i.e. food, drugs, cosmetics, baby formula, and medical devices) are exempted.

- *Traceability of components* is a challenge: The restrictions on the use of chemical substances are a major driver in the selection of materials for packaging because the packaging supply chain will not compromise on safety and compliance.

  - The number of chemicals restricted or prohibited in products in the EU is growing, and the compliance with this legislation may be more difficult for recycled products, since the traceability of all their components is not easy.

  - The origin of the waste collected and recycled is not straightforward, and neither is their content. In any case, if hazardous or restricted chemicals are detected, it can be difficult or costly to separate and eliminate them during the recycling processes. The products and materials imported are especially difficult to trace, which would be a barrier for the increase of the supply of recycled materials for the EU industry.

- *Inability to distinguish primary from secondary materials* for some materials: A requirement on recycled content will be difficult to implement and enforce for some materials because of the inability to distinguish primary from secondary material, implying traceability issues.

Conclusion

The actors of the soft drinks supply chain are best placed to evaluate what they can achieve in a certain framework, and how to best achieve their own targets. EU and national legislation can help encourage more voluntary commitments by ensuring the framework

conditions are in place that are necessary to achieve the commitments. Hence, companies will be encouraged to continue to increase their sustainability efforts, including the uptake of recycled content for packaging.
In order to align agenda and to match wills with reality, a constant, transparent and unbiased communication process has to be put in place amid all stakeholders.
The key framework conditions that need to be in place before voluntary or mandatory rules on recycled content for plastic packaging can be considered are as follows:

- *Secondary raw materials* need to be available in *sufficient quantity and quality* at *competitive prices* relative to primary materials in order to stimulate the uptake of recycled content.

- An *appropriate quality framework* also needs to be in place.

- The EU should strive for a *genuine internal market for secondary raw materials* with relevant infrastructure *for sorting and reprocessing* available where they are needed.

- In addition, the development *of end-of waste criteria* is a pre-requisite for such a market.

- *Packaging functionality* is particularly important to bear in mind, in this context especially for packaging in contact with food and beverages, because introducing recycled content in food contact materials is not legal or desirable in some cases, currently because it can pose a contamination and food safety risk for consumers.

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