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**SECTION: *ECONOMICS, BUSINESS ADMINISTRATION,
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EMPLOYMENT IN BIHOR COUNTY. CONCRETE RESEARCH: “THE PERCEPTION OF THE EMPLOYERS OF BIHOR ON THE PUBLIC EMPLOYMENT SERVICE”

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Abstract: *This article carries out a quantitative, but also a qualitative analysis of the activity of Bihor County Agency for Employment (AJOFM Bihor) in 2018. In the first part, the article aims to treat the theoretical aspects related to employment, invoking the significance that the specialized literature attaches to the concepts of supply and demand of workforce, active population, employed population, labor resources, active and passive policies, as well as considerations on the impact of employment on the economy and the individual. Afterwards, a few quantitative aspects of the 2018 Bihor workforce structure are presented, as well as the results of a qualitative research carried out through interviewing 16 subjects, specialists from the socio-economic units in the county, in their position of employer representatives. The research method used is the interview-based sociological investigation, which aims to capture all of the aspects that are subject to the study in an in-depth manner, and the investigation tool used is the interview guide. The qualitative research aimed to gather knowledge on the perceptions of the employers in relation to the activity of the Public Employment Service, represented by the Bihor County Agency for Employment (concerning the general activity of the service, the way in which the Job Fair is carried out, and the manner in which the employers communicate with the persons looking for a job). At the end, we present the conclusions of the research, which can be a useful tool for the public service in order to optimize its own activity. Thus, the analysis of the subjects' answers generally revealed that the majority of the employers have a positive view on the activity of the institution, believe that it is preferable to continue to communicate with it, arguing that it has numerous and quality resources, that it manages an accurate database of the unemployed persons in the county, divided by areas, levels of training and education, that it offers advice, qualification and re-qualification courses, offers an updated list of vacant positions, facilitating the identification of the persons appropriate for various jobs. Among the measures proposed by the subjects in order to optimize the activity are: more investments in advertising and online platforms, the involvement of vocational schools in the process of the entry of the youth on the labor market, and the timely notification and motivation of the skilled unemployed persons to participate in the Job Fairs.*

Keywords: *workforce supply and demand; total population; employed population; active policies; the Job Fair.*

JEL Classification: *J23; J24.*

1. Introduction

This article aims to treat a few of the aspects concerning employment in Bihor County in 2018, the last year on which we currently have final data.

In the first part of the article, we express a few theoretical points of view on the need to use the labor resources of a certain country or geographical area, demarcating the concepts with which we operate in this sense, respectively those of total population, active population, employed population, human resources, and workforce demand and supply.

The second part of the article, which has the highest degree of originality, is dedicated to the concrete research, carried out at the level of Bihor County and structured into two parts, respectively, a quantitative research based on the statistical analysis of the data offered by the AJOFM Bihor concerning the volume and structure of the total population, of the working age population, of the employed civil population, of the labor resources, of the unemployed and of the vacant positions in 2018.

Another part of the concrete research is the presentation of the results of a qualitative study, based on interviews, applied to a random sample of employers who participated in the Job Fair in order to know their opinions on their relationship with the Bihor Public Employment Services.

The final conclusions of the article also suggest a few possible measures for the optimization of the institution's activity, in order to reach its fundamental objective, to contribute to the growth of the employment rate in Bihor County by choosing the methods and means that are the most efficient and in consensus with the expectations of its own beneficiaries.

2. Theoretical considerations concerning employment

Employment can be analyzed from the perspective of the concepts of workforce demand and supply.

The workforce demand can be defined as the necessary number of workers, of various trades and professions from a certain geographical area and during a certain interval of time. This demand manifests as a result of the fact that labor is an important production factor, which, along with the other production factors, primary or original (natural capital, financial capital), participates in the production process, which results in goods and services that can be sold on the market. (Preda, 2002)

The workforce supply represents the labor that the members of a society can perform for a salary. The theoretical approaches of the workforce supply are based on the relationship of interdependence between economic growth and the active population. Thus, on the one hand, economic growth has an impact on the evolution of the employees divided by activity sectors, social-professional categories, on the territorial and professional mobility of the active population, as well as on the quality, duration and difficulty of the labor. On the other hand, the active population can have a positive effect on the economic growth process through increased productivity, the

quality of the workforce, and its openness towards professional and territorial mobility. (Nica, 2011)

When examined during one point in time, the workforce supply seems influenced by several factors (Oprescu, 2001), such as: the size of the total population, the participation or activity rate, meaning the percentage of the working age population that is fit for work, working or looking for a job, the duration of the labor and the quality of the workforce.

Human resources represent the essential factor in the economic and social development of a country. They represent that section of the population that has the physical and intellectual capacities allowing it to perform a useful activity. (Nica, 2011)

Thus, the total population of a country is formed of the active and the inactive population. From an economic point of view, the most important demographic category is the active population, also called the potential workforce of the society, and it contains the employed persons: employees, employers, self-employed workers, unpaid familial workers and unemployed persons. (Mihăescu, 2001).

As of late, the approaches that highlight the qualitative side of the labor resources have been given considerable importance. The human capital theory, whose initiator is Gary Becker, emphasizes the importance of education and vocational training in order to economically capitalize on human potential.

The gain from investing in human capital does not only refer to the net amount of income attained throughout life from the sale of skilled workforce in contrast to that of unskilled workforce, but also takes into consideration the subjective feeling of intellectual well-being, trust and social recognition. (Giarini and Liedtke, 2001).

Employing labor resources at as high a level as possible is an important national desideratum, a permanent objective of the governmental economic policies and workers' syndicate policies, having an impact on the population and the individual, aiming to avoid wasting the labor resources of the active population, as well as an impact on the level of the national economy, economic agents and social partners (Bădulescu, 2006: 11; Cojocaru and Pupp, 2010:394).

In order to efficiently capitalize on the workforce, there are adequate policies to decrease unemployment developed at governmental level in order to maintain and increase the employment rate through direct or indirect actions to stimulate employment both from the standpoint of the employers, as well as those who are employable, aiming to ensure jobs for the youth entering the labor market, for the unemployed, for persons with an employment risk, etc. (Odobleja, 2016: 72).

Employment is generally approached through two types of social policies: passive, which especially consist in granting unemployment benefits, and active, which aim to counteract the imperfections of the labor market, support the unemployed in their pursuit for a job through measures such as: professional information and counsel, the mediation of labor, vocational training, the stimulation of workforce mobility, supplementing the salaries of the employees, and professional advice and assistance in starting an independent activity or for the initiation of a business. Active policies are more costly than passive ones, but can reduce the rate of unemployment

and, thus, raise the employment rate and socio-economic productivity. (Neamțu, 2003)

3. Aspects concerning employment in Bihor County

3.1. The labor market in Bihor County, 2018 (Analysis carried out on the basis of the Activity Report by the AJOFM Bihor, 2018)

3.1.1. The structure of the labor resources in Bihor County

When analyzing the employment and ensuring of the necessary workforce, one should start from the labor resources existing at the national level or at the level of the analyzed region, in this case, the level of Bihor County. The base of the workforce resources is, on the other hand, the total volume of the population living in the area, in its concrete structure divided by age, gender, level of training, etc., which is why the analysis of the workforce market of Bihor will commence from the identification of the indicators mentioned.

In 2018, *the total population* of Bihor was 591,283, of which 304,172 were women (51.44%) and 287,111 were men (48.66%).

The working age population was 384,600 persons, of which 183,900 (47.81%) were women and 200,700 (52.19%) were men. The working age population consists of all men and women from the age of 16 up to the standard retirement ages.

The civil active population was 274,800 persons, of which 129,600 (47.16%) were women and 145,200 (52.84%) were men. We should mention that, in the civil active population, the persons who are past the working age of 16 and represent the available workforce for the production of goods and services are also included.

When it comes to the total labor resources, we can see that the working age population is about 65% of the total population of the county, the rest being children and persons who have exceeded the working age limit. Furthermore, the civil active population represents 71.45% of the working age population and 46.44% of the total population of the county.

Another element that can be mentioned here, which is relevant for the specifics of the labor resources in the county, is the fact that if, in the total population, the female persons represent over half, respectively 51.44%, within the other two structures, the situation is reversed, as over 50% is represented by male persons (52.19% in the case of the working age population, and 52.84% in the case of the civil active population). It is notable that the phenomenon is present during all analyzed periods both at Bihor level, as well as at national level, which suggests a higher risk of infant mortality within the male population (Chipea, 2015: 112-150).

3.1.2. Unemployment in Bihor County, 2018

At the end of 2018, the number of *registered unemployed persons* (4,074 persons) was lower than in December 2017 (6,497 persons) by 2,423 persons, but we should remark that the number of unemployed persons receiving unemployment benefits is approximately the same, with the decrease being due to the non-renewal of the claims by the persons with no right to such benefits. Furthermore, at the end of 2018, the registered unemployment rate at county level was 1.53%, which is lower by 90%

than the same month of the previous year. The unemployment rate is influenced both by the number of registered unemployed persons in said month, as well as the civil active population at the level of Bihor County.

In what concerns the structure of unemployment based on age categories, on 31.12.2018, the highest percentage was represented by unemployed persons aged 40-49 (28%), followed by those aged 30-39 (20%), and, when analyzing the level of employability, we can find that these two categories bear an employability level of "Very hard" and "Hard." (AJOFM Bihor Activity Report 2018)

When it comes to the structure of unemployment based on the level of training, the unemployed persons who have a primary education, a middle school education or a vocational education most often address the Bihor County Agency for Employment in order to identify a job and find employment. On 31.12.2018, the amount of these persons from the total number of unemployed persons was 45%. Unemployed persons who had a high school education represented 17%, while those with a university education represented only 10%.

3.1.3. The activity of the AJOFM in 2018

In 2018, 5,858 new entries for vacant positions, declared by employers, were registered in the database of the Bihor County Employment Agency. These positions were available on the workforce market, being identified through the weekly job reports transmitted to the agency through all communication channels.

The types and structure of the positions communicated by the employers throughout 2018 confirmed the county's, but especially the Municipality of Oradea's orientation towards activities in the *technical domain*, whether we are talking about production engineers, CNC operators or industrial robot operators.

For the persons with a higher education, the vacant positions covered a very wide array of trades, from engineer to economist, quality / sales analyst, programmer, network administrator, human resource / WSH inspector, sales advisor to university professor.

The most transmitted positions were meant to be filled by persons with high school or vocational education (56%), especially in *the activities related to commerce, services and tourism*, which were followed by those in the technical field and those in the medical field.

The professions requested on the workforce market were: commercial worker, salesperson, cashier, security agent, chef / sous-chef, server / busser, housekeeper, medical nurse, production / industrial robot / electronic component operator, mechanical fitter, technician, maintenance electrician, welder.

29% of the total number of positions registered in 2018 were for unskilled laborers, and the studies required by the employers were high school- or middle school-level: unskilled workers in the light industry (the clothing industry or the industry of items made of leather or its substitutes), merchandise handler, subassembly fitter, kitchen worker.

Bihor County Agency for Employment, through its employment policies, supports employers *through the application of measures to stimulate employment* in order to create new jobs. The stimulation of the employers to hire the unemployed is done

especially through *the subsidizing of the jobs*. We should mention that the employers that can benefit from these subsidies are those who hire unemployed persons who are part of *the following categories*: graduates of educational institutions, people over 45, unemployed parents who are the sole providers in single-parent families, NEET youth, unemployed persons who, in 5 years' time from the employment date, fulfill the conditions for retirement, disabled persons. (art. 80, 85 of Law 76/2002, with amendments and additions). Other measures that support employers, but also the persons searching for a job refer to labor mediation and the stimulation of the mobility of the workforce, and an efficient method for labor mediation is the organization of the General Job Fair. (Onica-Chipea, 2015: 75-120)

3.2. Qualitative study concerning the perception of employers in Bihor on the Public Employment Service

3.2.1. The objectives of the study and the research methodology

The *purpose* of the qualitative study that will be presented below is to know the perception of employers in Bihor on the Public Employment Service, represented by the Bihor County Employment Agency.

The research objectives consist in: identifying the general perception of the employers in Bihor on the Public Employment Service; the identification of the general perception of the employers in Bihor on the General Job Fair; the manner in which the employers and the AJOFM communicate.

The research method used was the interview-based sociological investigation, which aims to capture, in an in-depth manner, all of the aspects that are subject to this study, while the investigation instrument used was the interview guide.

The interview guide is structured into 3 dimensions and contains a total number of 14 questions. The first dimension has to do with the general perception of employers on the AJOFM Bihor, and the questions contained here are meant to identify the opinions of the investigated subjects on the services offered by the AJOFM Bihor, to know the most accessed services, and to find the measures for the optimization of the services, according to the opinions of the subjects.

The second dimension of the interview guide concerns the organization and operation of the General Job Fair organized by the AJOFM Bihor, with the questions addressed to the employers focusing on knowing their opinion on how the Job Fair is organized; identifying the employers' expectations in what concerns this type of activity; whether the firms that they represent have participated in other such job fairs, and what the actions or activities are that could contribute to aiding employers in identifying potential employees during these events.

The third dimension has to do with the web portal launched by the AJOFM Bihor, locuridemuncabihor.ro, and the communication methods that the employers prefer in their interaction with the Public Employment Service. The questions contained here aim to discover: the problems encountered by the subjects when accessing said web portal, as well as the website of the institution; the main reasons for which they access these websites; what measures they would recommend for the improvement of information transmission towards and from the AJOFM Bihor.

The universe subject to this investigation is represented by all employers in Bihor, while *the sample* consists of 16 employers or representatives of employers selected from those who participated in the Job Fair organized by the AJOFM Bihor in April 2019.

The positions of the 16 subjects are: recruitment specialist, human resource inspector, commercial director, sales agent supervisor, marketing and PR executive, human resource coordinator, human resource analyst, administrator, financial clerk, head of human resources and assistant manager.

The type of the research is qualitative, and is not representative from a statistical point of view due to the small number of interviewees, but it can be a starting point for more in-depth and larger scale research, and the data obtained can be useful reference points for the formulation of certain theoretical conclusions, and it can especially represent a practice optimization instrument for the Public Employment Service of Bihor.

3.2.2. The results of the research

Through the analysis of the discussions and answers, a series of conclusions have resulted concerning the perception of the employers on the Public Employment Service of Bihor (PES), which we will synthesize using the dimensions presented:

1. Employers' general perception on the PES

When asked "*How would you briefly characterize the activity carried out by the AJOFM Bihor, based on your latest interactions with the members of the organization and the services offered?*," most employers (15 of the 16 subjects) expressed their satisfaction in what concerns the activity of these services, appreciating their manner of organization, the efficient communication, and the quality of the services offered. The interactions of the employers with the employees of the service have been deemed adequate, underlining their direct and efficient involvement in the identification of the personnel appropriate for the specifics of the various jobs offered. When asked "*What are the services that you access most frequently and how do they help you in carrying out your activity?*," most of the interviewees (14 of 16) answered that the most frequently accessed services are the institution's site, the database of unemployed persons, and the communication of the vacant positions. The employers also mentioned that a form of communication that was often used was the direct communication with the employees of the AJOFM Bihor for the purposes of notification concerning the available courses and the organization of job fairs.

When asked "*If you were to propose actions for the improvement of the AJOFM's activity, what would be the most important for employers, respectively for identifying a job opportunity?*," the employers gave answers that can be systematized into a few categories: the priority orientation of attention and investments of time, financial resources and competencies toward appropriate advertising; better visibility of available positions such that they can be accessed by a public that is as diverse as possible; the intensification of the collaboration with the schools that fit the profile of the vacant positions, including through promoting an online environment that is as friendly, accessible and simple as possible.

The final question of this first dimension, namely *“Would you recommend the AJOFM Bihor as a recruitment solution? If so, why? If not, why?”*, most employers (14 of 16) claimed that they would recommend the AJOFM as a recruitment solution, as the institution has many more resources of much higher quality, also benefitting from an adequate office in the county. Other arguments mentioned by the subjects to support their recommendation were: the Public Employment Service has a database with all unemployed persons in the county, divided by localities and qualification levels; they offer professional advice, as well as qualification and re-qualification courses depending on what is needed; based on the requests made by the employers, the Public Employment Service draws up and continuously updates a list of vacant positions, which is then made public through all of its means of communication, leading to a higher chance of finding the employees compatible with the requirements of those vacant positions.

Even if the vast majority of the subjects expressed favorable views of the AJOFM Bihor, which could be an effect of a social desirability bias, two of the sixteen subjects were more reserved, explicitly mentioning that they would not recommend the AJOFM as a recruitment solution, as they considered private specialized firms to be far more motivated in recruiting the persons appropriate for the vacant positions. This can, at least, be an impulse in the process of continuous improvement of the AJOFM's own activity such that they become even more competitive.

2. The General Job Fair

When asked the first question of this dimension, respectively *“How would you characterize the event as it is currently (in terms of expectations, positive and / or negative aspects, etc.)?”*, most employers (15 of 16) expressed favorable opinions, believing that the organization of such events *“helps people find a job”* and that *“it is a very good idea since employers get to meet their possible future employees face-to-face.”* They also believe that the event is as ample as it is because it has *“a very high visibility on the labor market.”*

The main issues that the employers have is that *“the same people came frequently,”* and the participants (the persons looking for a job) *“are not well prepared for the requirements of the vacant positions.”*

When asked to *“Please state a few results that you have had by participating in this event (number of candidates interested in the offer promoted, number of persons selected for an interview, number of persons selected for employment, impressions referring to the participants, etc.)”*, the employers expressed their satisfaction with the fact that there were many interactions, but they were dissatisfied due to the fact that: the number of people interested in their offer was small and that *“unfortunately, too few met the expectations,”* and so, the number of persons selected for an interview and who were eligible for hiring was too small.

The employers who participated for the first time in this event stated that they were pleased, even if they did not find suitable people to hire, because they became better known on the labor market.

When asked the third question, *“Has the organization that you represent ever participated in other such events organized by the AJOFM Bihor? What about you?”*, most employers answered that both the interviewed subjects and the organizations

they represented have participated in other such events. There were also a few employers (4 of 16) who claimed that, although their organization has participated in other such events, they personally were participating for the very first time, and, in two cases, neither the organization, nor the interviewed subject had ever participated in such an event, expressing favorable opinions in line with those mentioned above by the other subjects.

When asked *“If the representative of the employer has participated in other such job fairs, how would you characterize this event in comparison with other events that you have participated in?”*, the subjects who had participated in other such events expressed favorable opinions about the current event, invoking arguments such as: there was a very large number of employers in comparison with other events that they had participated in; the location of the event is more adequate in terms of size; When asked the final question of this dimension, namely *“What actions / activities do you think could contribute to supporting employers in identifying potential employees at events such as the job fair?”*, some employers suggested that it would be necessary to invest more in advertising and online platforms. They also believe that vocational schools should become more involved in the process of the youth’s entry into the labor market, and that skilled unemployed persons should be notified in a timely fashion about the organization of such an event.

Most employers, however, said that everything that is already being done is sufficient and that they have no activity to propose that might aid them.

3. Web portal / Communication

The first question included in this dimension – *“When you wish to obtain information on the labor market / facilities offered to the employers, what means / methods do you use in order to be informed (visiting the headquarters of the AJOFM Bihor, phone, e-mail, website, etc.)?”*, most employers (12 of 16) stated that the method that they preferred was the e-mail, website or phone. Some employers (4) mentioned that they prefer visiting the headquarters of the AJOFM, as they preferred direct contact with the specialists and the persons looking for a job.

When asked *“What are the main reasons for which you use <http://www.bihor.anofm.ro/>, in order to obtain information, in comparison with other means / methods?”*, the employers gave answers that fell into a few categories: in order to continuously visualize what the vacant positions are; in order to download various forms; in order to see the legislation in force; because it is the fastest and most accessible means.

When asked *“Do you use the web portal locuridemuncabihor.ro? If so, have you encountered issues when using the web portal? If so, can you specify the issues encountered?”*, most employers (10 of 16) answered that they do not use this web portal, while those who did stated that they had encountered no issues.

One single employer stated that they encountered issues when using the web portal, as it froze and failed to load, but they also stated that they had reported the issue to the employees of the AJOFM Bihor.

When asked *“What are the measures that you would propose for the improvement / facilitation of gaining / transmitting information from / to the AJOFM Bihor?”*, most employers stated that they had absolutely no improvement measure in mind, as they

considered the communication between the AJOFM Bihor and the employers to be very good, which is possibly the effect of a social desirability bias.

4. Conclusions:

- The analysis of the activity of the Bihor County Agency for Employment in 2018, through the structure of the vacant positions managed, shows an orientation of the county's economy, based on the period analyzed, towards *the technical domain*, as most vacant positions were for *engineers*, production engineers, CNC operators and industrial robot operators.
- Most of the communicated vacant positions were meant for persons with a *high school or vocational school education* (56%), a large portion of which had to do with *activities related to commerce, services and tourism*, which were then followed by those in the technical and medical domains.
- 29% of the vacant positions were activities for unskilled laborers, of whom employers request middle school or high school education.
- In order to stimulate employment in accordance with the needs of the employers, the AJOFM Bihor applies a series of policies for employment stimulation, pursuant to the legal provisions.
- The purpose of the interview-based qualitative research carried out on a number of 16 employers who participated in the Job Fair was to know the perception of the employers in Bihor on the Public Employment Service of Bihor.
- The analysis of the answers given by the subjects generally showed that most employers have a positive view on the institution's activity, considering it preferable to continue to interact with it, arguing that it has numerous quality resources at their disposal, that it manages an accurate database of the unemployed persons in the county, divided into areas, levels of education, and degree of training, also stating that it offers professional advice, qualification and re-qualification courses, and an updated list of vacant positions, facilitating the identification of the adequate persons for various jobs.
- When it came to the Job Fair, most subjects had favorable opinions, appreciating the possibility offered to the employers and potential employees to interact directly, and the preoccupation for identifying adequate locations. They were, however, dissatisfied with the small number of participants and the inadequate quality of their training, which are elements that lower the possibility to recruit the persons adequate for the vacant positions.
- When it came to communication, the subjects specified that their preferred method was the e-mail, website or phone, while some preferred direct contact with the specialists and the persons looking for a job.
- Even if the opinions of the subjects were, for the most part, favorable in what concerns the institution, the fact that two subjects answered that they would recommend a private service for recruiting and selecting personnel, as they are more motivated and offer higher quality services, should provide an impetus for the personnel of the public service to continuously perfect their activity.

- Among the proposals for measures made by the subjects in order to optimize said activity, we have: the necessity to invest more in advertising and online platforms; the involvement of the vocational schools in the process of the youth's entry into the labor market; the timely notification and the motivation of skilled unemployed persons to participate in the Job Fairs.

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THE EUROPEAN TRANSLOCAL EMPOWERMENT: AN ECONOMETRIC APPROACH

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Abstract: *Nowadays, there are numerous initiatives in response to contemporary socio-economic challenges. One possible response could be the social innovation phenomenon defined, according to Avelino et al. (2017), as the changing of social relations and involving new way of doing things. In this context, the aim of the paper is to discuss the empowerment and the social innovations concept by developing the empowerment mechanisms under a social psychology point of view, at one side, and exploring, in an empirical way, how people are empowered through transactional linkages, the translocal network. In particular, it is necessary to identify which translocal empowerment dimension is present across the European countries via the selection and the analysis of the possible social innovation proxies. To do this, it is necessary to comprehend the social innovation determinants at the macro-economic level across the European countries. Using the Akgüç multivariate regression model (2019), the paper studies the role of one possible social innovation proxy: the social protection expenditure. Under a methodological point of view, this model is used since it allows the combination between the traditional macro-level variables and the innovative ones, such as cultural norms and fear of failure; and it permits the inclusion of the country-specific characteristics. It also takes into account the macro-economic circumstance, the international financial crisis of 2008 until 2017. This period of analysis permits to control if the international economic crisis in 2008 might have influenced in some way the translocal empowerment dimension and brings together a panel data of different indicators from different data sources, such as Eurostat and Global Entrepreneurship Monitor (GEM), which provides measures of the entrepreneurial behaviour within countries. As part of the robustness check, we have used social innovation measures that could include country fixed effects accounting the heterogeneities across European countries. What emerges from the present empirical study is that the translocal network could be considered as a crucial factor for the social innovation implementation, since social innovation actors might access the local resources, developing, at the same time, the ability to interface with the local institutions, present in the current socio-economic system.*

Keywords: *Translocal empowerment; social innovation; panel data method; cross-country analysis; Europe.*

JEL Classification: *C13; O31; O52.*

1. Introduction

Nowadays, there are numerous initiatives in response to contemporary socio-economic challenges. In this framework, social innovation could be defined as the changing of social relations. Its principal characteristic is to be transformative since it alters and replaces the dominant institutions, according to Haxeltine et al. (2017). Community members could learn new skills through the people's empowerment existing in social relations. The aim of the present paper is to identify which translocal empowerment dimension exists across European countries via the selection and analysis of the possible social innovation proxies.

This paper is structured as follows. Section 2 provides a literature review of the empowerment and social innovation concepts under a theoretical approach. In Section 3, the description of the Akgüç econometric model (2019) is provided and the variables used for the empirical analysis are shown. Section 4 shows the estimation of the social innovation proxies, the results and their robustness checks for the period 2007-2017 are discussed. The last section provides some concluding remarks.

2. The translocal empowerment and social innovation concepts

The empowerment concept could be defined, according to Sen (1999) and Avelino et al. (2017), as the process through which actors gain the capacity to mobilize resources to achieve a goal. More deeply, in this process, actors:

- have access to resources, defined as mental (such as information and ideas), human (such as personnel and voters), artifactual (infrastructures) and natural (physical space);
- are capable to accumulate resources to reach the goal.

This concept is translated in an empirical way through the combination of the self-determinant theory of Ryan and Deci (2000) with the research of Thomas and Velthouse (1990). They developed five psychological dimensions:

- Relatedness;
- Competence;
- Impact;
- Meaning;
- Resilience.

In particular, the self-determinant theory is based on the satisfaction of psychological and universal needs with the aim to reach a well-being. We try to understand this aspect by examining in which ways social innovation could support the growth of individuals. As we have affirmed, there are two basic psychological needs:

- Relatedness, which refers to be part of a social group and receive recognition from it;
- Competence, which is based on the perception of effectiveness in complete actions (Bidee et al., 2013).

According to Thomas and Velthouse (1999), the ability to achieve goals necessitates the same degree of impact and meaning, which supports the passage of innovation. This capacity is the resilience, the last empowerment dimension.

As a consequence, psychological dimensions are present at an individual level but at the same time they are established through relations, shared practices and collective actions. Using this type of conceptualisation, we try to analyse which way actors in social innovation networks put in action the above empowerment concept within the translocal networks defined, according to Greiner and Sakdapolrak (2013), as networks in which local connections between actors and local initiatives are important.

Focusing the attention on the social innovation concept, it could be used for understanding some modern social problems, such as unemployment and inequalities across and within countries. While these problems have been discussed in Canada and the United States, according to the Economist Intelligence Unit (2016), European countries have only begun to debate them recently. Under the empirical point of view, researches are based on qualitative methods, such as interviews with social innovators; under the statistical methodology point of view, instead, only with the Dobele work (2015), it began the cataloguing of the possible components that might influence the social innovation growth, although her work focused the attention only on one country. In this framework, the aim of the paper is to identify which dimension of the translocal empowerment exists across European countries through the study of the country social protection expenditure effect, configured as one possible social innovation variables, using the Akgüç model approach. This model combines the traditional macro-level proxies with the innovative ones, like cultural norms and fear of failure.

3. Methodology, data collection and variables used

This section provides a picture of the methodology used for the estimation of the social innovation in terms of translocal empowerment proxies. It also provides a description of the variables used in the paper, distinguished in dependent and explanatory ones.

The aim of the Akgüç model is to identify a link between the dependent variable, the social innovation proxy of a country, and the possible explanatory variables. More deeply, he estimates the following fixed effects panel model equation:

$$Y_{it} = a_j X_{j,it} + \gamma_i + \varepsilon_{it} \quad (1)$$

where Y_{it} is the translocal empowerment dependent variable, $X_{j,it}$ are the explanatory variables, where $j = 1, \dots, n$ are the different explanatory proxies, $i = 1, \dots, m$ are the European countries and $t = 1, \dots, T$ is the time dimension. The equation (1) possesses a fixed effect because of the presence of the term γ_i , the specific characteristics of a country during the considered period of analysis, while a random error term ε_{it} is present in order to consider any possible shock. Akgüç used a standard panel data with country fixed effects in order to catch country characteristics that might influence the chosen dependent variable. He collects the standard errors at country level to check the possible existence of correlation between error terms themselves and if they are statistically robust to avoid the heteroscedasticity phenomenon.

Under the data collection and variables point of view, data were collected from different sources, since this issue enters into the European political and economic agenda only recently; according to Liger et al. (2016), indeed, the consequent lack of data could be due “[...] both to the differences in legal status and the roles it plays within the single EU Member States and to the attention traditionally paid by statistical offices to social economy entities.” (p. 77).

Despite this data limitation, the macroeconomic indicators, such as GDP per capita, social protection expenditure, tertiary education attainment, unemployment rate, share of people at risk of poverty and gender pay gap, come from the Eurostat database. Linked to the previous traditional variables, in this database there are other proxies connected to entrepreneurship and innovation; even if these proxies are not explicitly centred on social innovation they could influence the surrounding environment in which they operate. Furthermore, these variables come from the Global Entrepreneurship Monitor (GEM), which provides measures of the entrepreneurial behaviour within countries. The following Table 1 presents the list of variables used in the empirical analysis, divided into the empowerment dimensions previously identified.

Table 1: List of used variables (years: 2007-2017)

Empowerment dimension	Variable
Relatedness	Social protection expenditure Poverty risk
Competence	Commercial and physical infrastructures
Impact	Gender pay gap Unemployment rate Tertiary education attainment Total government expenditure Job creation rate GDP per capita

Empowerment dimension	Variable
Meaning	Cultural and social norms
Resilience	Fear of failure rate

Source: Authors' representation

In this paper, the *Social protection expenditure* has been used as a social innovation measure, identifying it as a dependent variable. Being defined, according to the Eurostat, as the “[...] interventions from public and private bodies intended to relieve households and individuals of the burden of defined set of risks or needs [...]”, it is possible to affirm that social protection schemes could be enforced in a social innovative way and hence it might be identified as a proxy for social innovation. Regarding the period of analysis, given the data availability, it covers the years from 2007 to 2017. This time limit permits to control if the international economic crisis in 2008 might have influenced in some way the translocal empowerment dimension.

4. Estimation results

Starting with the summary statistics, as reported in Table 2, the social protection expenditure is on average 16% of GDP across the European countries, and it highlights great differences, between the minimum (0%) and the maximum (25%). The percentage of people at risk of poverty and social exclusion is about 23% across countries, with the maximum sharing around 60%.

Table 2: Summary statistics

	Mean	Median	Minimum	Maximum
<i>Dependent variable</i>				
Social protection expenditure	16.34	16.40	0.00	25.60
<i>Explanatory variables</i>				
Gdp per capita	26621	24450	10400	77300
Gender pay gap	14.202	15.100	-0.900	30.900
Poverty risk	22.41	22.90	0.00	60.70
Unemployment rate	32.07	33.55	0.00	0.00
Total government expenditure	44.95	45.42	26.30	65.00
Tertiary education attainment	28.47	28.80	12.00	46.50
Fail of failure	26.84	34.45	0.00	61.58
Cultural and social norms	1.664	2.250	0.000	4.010

Source: Authors' elaboration

Following, Table 3 shows the estimated results for the social protection expenditure.

Table 3: Determinants of social protection expenditure

	Estimate	Std. Error	t-value	Pr(> t)
Tertiary education attainment	0.297048	0.036282	8.1872	1.288e-14 ***
Gdp per capita	- 0.275980	0.057381	-4.8096	2.588e-06 ***
Total government expenditure	0.760380	0.060829	12.5003	< 2.2e-16 ***
Gender pay gap	- 0.032604	0.014560	-2.2393	0.026 *
Residual Sum of Squared: 0.69354 R ² : 0.61945 Adj. R-Squared: 0.57319 F-statistic: 103.771 p-value: < 2.22e-16				

Source: Authors' elaboration

We can summarise from Table 3 that the total government expenditure is a positive and significant social innovation estimator. This goes along with the findings that countries with the most successfully social innovation plans are the ones with the higher total government expenditures, such as the Nordic countries, France and Austria. Tertiary education attainment exhibits a positive relation with social innovation even if its influence diminished with the presence of other factors, such as gender pay gap and GDP per capita. As before, in countries with a large share of higher educated population, it is possible to observe a greater presence of winning social innovation strategies. The presence of a negative relation between GDP per capita and Gender Pay Gap could be explained in the following way. The existence of a negative relation between gender pay gap and social protection expenditures, according to Rubery and Koukiadaki (2016), social policies could have a negative impact in at least two different aspects. First, social protection affects the way women who become mothers are able to develop careers in their jobs; second, it might encourage the gender division of labour with respect to their job roles. Regarding the negative relation between GDP per capita and social protection expenditure, it is possible to explain this phenomenon by dividing the analysis into two periods: the expansion and fiscal stimulus, during the international financial crisis, and the social consolidation, from 2010 to 2016. More deeply, during the international financial crisis, most of the countries scaled the share of public social expenditure for sustaining the growth and protecting population from the adverse effects of financial shocks. However, as the crisis moved to its second phase, from 2010 to 2016, the previous cyclical measures were short-lived, since governments usually abandoned the fiscal stimuli and introduced, instead, fiscal consolidation measures, showing a significant contraction through, for example, the reduction of the subsidies and the tax increment on consumption, and the social protection benefits reduction.

5. Conclusions

In this paper we have explored in an empirical way how the transactional empowerment is spread across European countries through the study of one possible social innovation proxy: the social protection expenditure.

As it is possible to stress out from the entire paper, the translocal network could be considered as a crucial factor for the social innovation implementation, since social innovation actors might access local resources, developing, at the same time, the ability to interface with the local institutions present in the current socio-economic system. More deeply, as shown in the paper, social innovation is positively associated with the level of education and total government expenditure, considering the country-specific fixed effects.

Under the future research point of view, it would be necessary if a comparison of the different empowerment processes across different European translocal networks, assessing the social drivers in terms of, for example, social justice and sustainability.

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ESPON 2020 COOPERATION PROGRAM IN ROMANIA

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Abstract: *The ESPON program aims to promote and stimulate the European territorial dimension in development and cooperation by providing evidence, knowledge transfer and policy delivery to public authorities and other public policy actors at all levels. The objective of the ESPON 2020 Cooperation Program is to support the strengthening of the effectiveness of EU cohesion policy and other sectoral policies and programs under the European Structural Funds and European Investment Funds (ESI funds) as well as national and regional territorial development policies through the production, dissemination and promotion of territorial data covering the entire territory of the 28 Member States and the four partner countries - Iceland, Liechtenstein, Norway and Switzerland. Romania as a member country of the program, will benefit from the results of ESPON 2020, consisting of territorial analyzes and studies on European trends in various topical areas: labor market or investment developments, commuting models, demographic change, climate change impacts on European territory, etc.*

Keywords: *cross-border; cooperation; financing; Romania; funds.*

JEL Classification: *F26.*

1. Territorial Cooperation Programs 2014-2020

European Territorial Cooperation is the instrument of cohesion policy which aims to resolve cross-border issues and jointly develop the potential of different territories. Co-operation actions are supported by the European Regional Development Fund through three key components: cross-border cooperation, transnational cooperation and interregional cooperation.

Cross-border cooperation programs are those programs that fund accessibility, environmental and risk prevention projects, economic and social development and 'people to people' at the EU's internal and external borders'.

Specific priority areas include: promoting sustainable and quality jobs and supporting professional mobility by integrating cross-border labor markets, promoting social inclusion and cross-border integration of communities, developing and implementing joint programs on education, training and training, etc.

Transnational cooperation programs have as main objective the financing of actions and the development of networks leading to integrated territorial development in areas such as environment, urban development, innovation and accessibility.

Specific priority areas include: strengthening the institutional capacities of public authorities and stakeholders and the efficiency of public administration by developing and coordinating macro-regional and maritime strategies.

Interregional cooperation programs support cooperation between public authorities on issues of common interest, through the transfer of experience and best practices between the regions of the European Union through networking between EU cities as well as between EU researchers (Badulescu et al., 2014).

Specific priority areas include: strengthening the institutional capacities of public authorities and stakeholders and the efficiency of public administration by disseminating good practices and expertise and promoting exchanges of experience (Camagni., 2006).

Romania participates in 2014-2020 for 12 European Territorial Cooperation Programs to be implemented both at the internal borders and at the external borders of the European Union.

The 12 European Territorial Cooperation Programs benefit from European co-financing through the European Regional Development Fund (ERDF), the Instrument for Pre-Accession Assistance (IPA) and the European Neighborhood Instrument (ENI), as follows:

- ERDF:

1. Interreg V-A Romania-Bulgaria Program;
2. Interreg V-A Romania-Hungary Program;
3. The Danube Transnational Program;
4. Interreg regional cooperation program INTERREG EUROPE;
5. The URBACT III cooperation program;
6. The INTERACT III cooperation program;
7. ESPON 2020 cooperation program.

- IPA II:

8. INTERREG IPA Cross-border Cooperation Program Romania - Serbia.

- ENI:

9. Joint Operational Program Romania-Ukraine 2014-2020;
10. Joint Operational Program Romania-Moldova 2014-2020;
11. Black Sea Basin Joint Operational Program 2014-2020;
12. Cross-border cooperation program ENI Hungary-Slovakia-Romania-Ukraine 2014-2020.

In order to support the beneficiaries of the financing, a maximum of 13% of the eligible expenditures for the projects financed by the ERDF and IPA and up to 8% for the programs financed by the ENI is ensured from the state budget.

2. Presentation of the ESPON program

ESPON is an applied research program designed to support the development of territorial development policies in Europe. To this end, the program provides various systematic data on territorial trends related to different economic, social and environmental aspects in order to identify the potential of larger regions, cities and territories as well as the economic challenges they face. ESPON activities target all EU Member States, as well as Switzerland, Iceland, Liechtenstein and Norway. Over 130 organizations across the continent are involved in this program. They

carry out different types of studies (thematic, intertematic, on policy impact, research networking or capacity building) and provide data on territorial trends in the form of statistics, analysis and maps. Therefore, one of the major challenges for ESPON is to put this material at the disposal of local policy makers. At EU level, the results of the research activities carried out under ESPON are a source of comparable information that can be used to improve the Union's competitiveness and sustainable development. During the 2014-2020 programming period, ESPON will operate as a European Grouping of Territorial Cooperation (EGTC). It will focus mainly on the thematic objective no. 11: Strengthening the institutional capacity of public authorities and stakeholders and an efficient public administration.

2.1. The objectives of the ESPON program

To achieve the *objectives of the program*, two priority axes were set: *Priority Axis 1* - Focused on the production of territorial information, their transfer, observation, tools and dissemination, *Priority Axis 2* - Technical Assistance.

Priority Axis 1 will finance a Single Beneficiary Operation (EGTC ESPON 2020 EGTC), which will contract services to research institutions through public procurement procedures. The funds allocated to *Priority Axis 1* will finance research projects that will contribute to: providing territorial information through applied research, increasing knowledge transfer / territorial intelligence, improving territorial observation capacity and tools for territorial analysis, better dissemination and exploitation of the results of territorial research by interested users. *Priority Axis 2* responds to a clear request from policy makers and practitioners, expressed in the final phase of the ESPON 2006 Program, for user-oriented and on-demand actions under ESPON 2013 Program. The targeted analyzes developed under ESPON 2013 aim to respond to this applications and provide a truly European dimension to the database at regional / local, national, cross-border and transnational levels. Using ESPON results in practice will help to make informed policy decisions. By calling for an analytical process where ESPON results are integrated with more detailed information and practical know-how, a new understanding of the potential and future development challenges that may be turned into policy decisions on projects and actions may emerge.

2.2. The total budget of the ESPON 2020 program

The total budget of ESPON 2020 is EUR 48.6 million, of which EUR 41.3 million represents the allocation from the European Regional Development Fund for the period 2014-2020.

As a member country of the program, Romania will benefit from the results of ESPON 2020, consisting of territorial analyzes and studies on European trends in various topical areas: labor market or investment developments, commuting models, demographic change, climate change impacts on the European territory, etc.

2.3. Financing priorities

ESPON focuses on the thematic objective no. 11 "Strengthening institutional capacity". However, all 22 thematic objectives have a territorial dimension or impact. Therefore, all are considered relevant and can be supported by European territorial data produced, generated and disseminated by ESPON 2020.

2.4. Formation of partnerships

The partnership is one of the conditions for participation in ESPON projects. In the sections below, find out about partner partners and sources of partner identification. For example, some statistical data on the structure of the partnerships of the 13 ongoing research projects were presented. The section on partnership proposals will soon be complemented by the proposals made by the Romanian institutions and by the institutions from the participating countries (EU / partner countries). ESPON projects are generally formulated and implemented in partnerships consisting of eligible institutions from at least three different countries participating in the ESPON 2013 Program. They are eligible for ESPON funding: public bodies; bodies governed by public law; private bodies.

As far as the partner's country of origin is concerned, only institutions from the EU Member States and the four partner countries Norway, Switzerland, Iceland and Liechtenstein can participate as partners in a transnational project group. There is also an exception to the general rule for projects with a budget value of up to 200,000 euros for which the fulfillment of the partnership formation condition is not necessary, and the project proposals can be formulated and implemented by a single eligible body. The project proposal has to be developed in close cooperation with the project partners, this being a condition of the projects funded under the "European Territorial Cooperation Objective". That is why preparing a successful proposal involves more than fulfilling some of the requirements of the program, based on the principle of "joint training" and "joint implementation", the term "common" referring to the whole partnership. It is very important for the partners to have experience of cooperating in transnational projects and of carrying out research projects at a transnational level.

The following section presents information on the purpose, key outcomes and image of Romania in 12 ESTON studies, finalized or in the advanced stage of implementation - the list of these projects is presented below:

1. DEMIFER - Demographic and migration flows affecting European regions and cities.
2. EDORA - Opportunities for development of different types of rural areas.
3. ESPON CLIMATE - Climate change and territorial effects on regional and local economies in Europe.
4. FOCI - Future guidelines for city development.
5. ReRISK - Effects of rising energy prices on regional competitiveness.
6. TIPTAP - Assessing the Territorial Impact of Transport and Agriculture Policies.
7. CAEE - Agglomeration savings in Europe.

8. ESPON TeDi .- Territorial Diversity in Europe.
9. METROBORDER. - Polycentric cross-border metropolitan regions.
10. SS-LR - Spatial Scenarios: New tools for knowledge of the territory.
11. SURE - Success of Convergence Region Savings.
12. ESPON DATABASE 2013 - ESPON database (scientific platform).

There is also an ESPON study whose interim results have been published - EUROISLANDS, which analyzes the island regions of Europe.

2.5. Statistics on the structure of partnerships

2.5.1. Statistical data refers to the 13 ESPON research projects that have been running since 2010

Table 1: Applied Research (Priority 1)

Project name	DEMIFER	EDORA	ESPON CLIMATE	FOCI	ReRISK	TIPTAP
No. of partners	7	15	13	7	3	3
The structure of the partnerships	Netherlands (2) Austria Poland UK Sweden Italy	United Kingdom (4) Sweden Spain Greece Ireland Germany (2) Austria Poland (2) Hungary Portugal	Germany (2) Finland Norway UK Finland Hungary (2) Romania Slovakia Spain Netherlands Switzerland	Belgium Spain Poland Greece Switzerland France (2)	Spain Sweden Greece	Italy UK Netherlands

Source: <http://www.mdrap.gov.ro>

Table 2: Focus analyzes (Priority 2)

Project name	CAEE	ESPON TEDI	EUROISLAND	METROBORDERS	SS-LR	SURE
No. of partners	4	4	3	4	2	2
The structure of the partnerships	UK Ireland Spain France	Sweden Greece Romania Switzerland	Greece Denmark Malta	Luxembourg (2) Switzerland Belgium	Italy Spain	Italy Switzerland

Source: <http://www.mdrap.gov.ro>

Table 3: ESPON Database (Priority 3)

Project name	ESPON DATABASE
No. of partners	7
The structure of the partnerships	France (2) Spain Belgium Romania France Luxembourg

Source: <http://www.mdrap.gov.ro>

The studies conducted under the ESPON 2013 Program are a valuable source of policy-making based on existing scientific expertise at European level.

2.5.2. The ESPON DATABASE 2013 project

The goal of the ESPON DATABASE 2013 project is to continue and improve a spatial database that was developed under the ESPON 2006 Project. The first ESPON database contains relevant indicators for the analysis of NUTS 2 and NUTS 3 spatial units from a perspective - territorial competitiveness and economic convergence capacity (underlying the concept of territorial cohesion).

The ESPON Database 2013 project focuses on obtaining variables and indicators with impact and relevance in the decision making process at different scales of territorial analysis. The final products obtained in the implementation of this program are spatial data bases and map funds, tools to which models and methodologies are used to visualize information at the territorial level. The coverage area of the study is represented by the countries participating in the ESPON 2013 Program and some countries located in the South-Eastern neighborhood of the European Union (Balkan states). The level of analysis starts with obtaining data and indicators for classical administrative levels (NUTS0, NUTS1, NUTS2 and NUTS3) with local size query capabilities (LAU1 and LAU2) for selected selected states. Efforts under the ESPON Database 2013 project have a twofold goal: to streamline decision-making through easy and fast access to relevant databases and indicators and to complement major actors in the diffusion of spatial and spatial analysis tools through a body has as its main mission the integrated monitoring of the active geographic trends at the European continent (Faludi and Waterhout, 2002).

The ESPON DATABASE 2013 project results, taking into account the complexity of geographic objects that require data processing and their inclusion in the database, the ESPON Database 2013 Project is divided into a set of "challenges" that decline according to different issues. Another issue it was to redefine the Functional Urban Areas on the basis of a set of criteria that allow a better trace of the boundaries of these entities (challenge to the working team working within the Free University of Brussels), which makes some scientific approaches encountered in the implementation of the project have a horizontal character that mobilizes common forms of know-how, centered on the issue of local or regional databases. Some data analysis methods, such as the decomposition of information from a hierarchically

superior level (NUTS3) to a lower geographic level (a 1km x 1km grid), allow viewing of spatial information on stairs for which the set of indicators is not available normally. Continuing this approach could provide interested public stakeholders with a number of useful tools for identifying key territorial processes active, independent of administrative-territorial divisions.

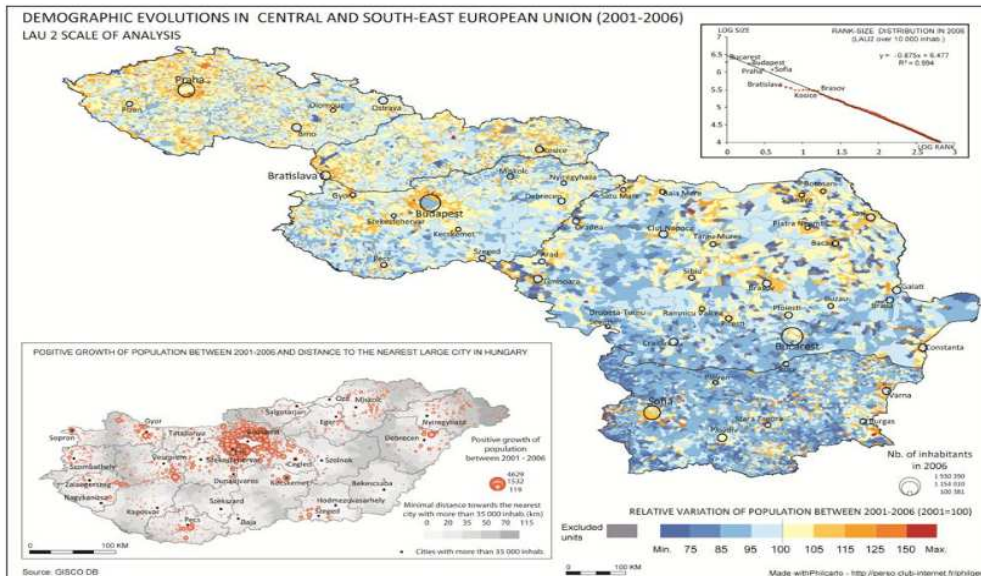


Figure 1: Evolution of the population (2001-2006) in EU Member States in Central and Southeast at LAU 2 level

Source: <http://mdrap.ro>

2.6. Proposals for partnership within the ESPON program

On May 13, 2010, 21 institutions in Romania were registered in the database (increasing from January to 13) - the most potential partners registered in the database against the other participating countries - www.espon.eu - Projects section - Transnational Project Groups http://www.espon.eu/main/Menu_Projects/Menu_ESPONPartnerCafe/index.html

On 24th January 2011, the Regional Development Agency of the Czech Republic was interested in collaborating to formulate project proposals for the following themes under Priority 1 - Applied Research in the Field of Territorial Development, Competitiveness and Territorial Cohesion:

- European Regions: Potential Contribution to the EU 2020 Strategy;
- Territorial Scenarios and Visions for Europe;
- Territorial Governance – Best Practices for New Perspectives.

The Regional Development Agency was established in Ostrava in May 1993 by the regional bodies and the former Ministry of Economy of the Czech Republic as pilot project of the EU Phare program. The Agency played a key role in strategic

planning, and they did prepare all the Moravian-Silesian regional development programs, the Ostrava-Mošnov Airport Development Strategy, the Regional Operational Program for EU Planning for 2007-2013 and they did as well prepare many projects and strategic plans for the municipalities (Bański and Ferenc, 2014).

3. Conclusions

ESPON methodology in the field of spatial analysis and the results of this type of study can be useful for local and regional decision-makers to visualize and interpret risks and trends at specific spatial scales: development regions, counties, metropolitan areas, intra-community development associations, cities, development poles, urbanized axes and areas, etc.

The ESPON 2013 Program contributes to its debates at the European level on: the implementation of the new European Territorial Cohesion objective introduced by the Treaty of Lisbon, the contribution of cohesion policy to the achievement of the Europe 2020 objectives and the future of the post-2013 European Cohesion Policy. The year of 2010 marks the completion of a large number of territorial research projects funded under the ESPON 2013 Program and the launching of new research projects in which the exploitation of research results is one of the challenges of implementing the program and an important objective at both program level as well as at national level.

European territorial cooperation for the period 2014-2020 provides for the strengthening of the effectiveness of the Cohesion Policy by promoting "developmental analyzes and the links between cohesion of territorial cohesion, including territorial aspects of economic and social cohesion, as well as the harmonious development of European territory through studies, collection of data and other measures".

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TRENDS REGARDING RETAIL BUSINESSES. A CONSUMER PERSPECTIVE ON THE COMMERCIAL ACTIVITY IN THE CITY OF RESITA

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Abstract: *Every business has a series of objectives to achieve. Most of the businesses in the field of commerce follow a certain strategy in order to achieve a higher level of turnover or profitability. Over time, the importance of stores in general and supermarkets in particular has increased, with the transition to a consumer society. The consumer behavior thus becomes an important aspect for the way organization generally or the marketing departments develop their strategies. In order to achieve their goals, it is important for companies to be able to attract and maintain a large number of customers. The general trends in this regard, that can be identified worldwide, can be easily observed in the city of Resita also, reason why it can be studied a direct connection between the number of customers and the level of development of the stores. Whether we speak about supermarkets or small, proximity stores, it cannot be denied the fact that the commercial area has gain power and has been extended very much over the years. Still, each of these faced a new threat, namely the expansion of online stores, reason why many of them try to adapt in the digital environment also. Every analysis, however, depends on two perspectives: the consumer perspective and the managerial perspective. The present paper aims to present an overview of the first one, offering the possibility of further development from the managerial point of view. The first part of the paper consists in a theoretical background regarding commercial management, presenting general aspects regarding the consumption phenomenon, while the second part consists in a study carried out on a sample considered representative for the population in the city of Resita, in order to achieve the perspective of customers regarding the development trends of retail businesses in this part of the country.*

Keywords: *commerce; retail; consumer; business; commercial network; turnover.*

JEL Classification: *L81.*

1. Theoretical Background

"The consumption phenomenon has reached important dimensions" (Stefan, Craciun, 2011) nowadays, worldwide. Commercial activity is one that a person faces day by day, interfering with sellers, merchants and a number of other categories of staff. Literature in the field has defined each of these categories over time, while imposing a number of specificities in terms of commercial management.

According to literature, "Originally, the term 'sales management' referred to the direction of sales force personnel (...). Now, the sales management meant

management of all marketing activities, including advertising, sales promotion, marketing research, physical distribution, pricing, and product merchandising” (Kundu).

Thus, there are several aspects that trade enterprises need to focus on, as “the term ‘selling’ encompasses a variety of sales situations and activities” (Jobber et al, 2016) the underlying principles of which are the following:

- Selling involves building a dialogue with the customer
- Sales involve a high level of customer interest
- Selling involves building a climate of mutual trust.
- Selling provides maximum contribution to profit (Khan, 2012).

What is the basis of the sales process is mainly the customer's need, but it is in direct relationship with the trader's needs, and the seller's by default.

The sales force performance level thus becomes directly related to the characteristics, motivation and determination of the sales staff, in order to create a “winning team” (Cates, 2015). Thus, “the sales organization, commonly referred to as the sales force, plays a key role in the growth, development, profitability and impact on customers” (Noonan, 1998).

The most important difference between the sale and the other elements of the marketing activity is personal contact. “Today, a salesforce must have a wide range of skills to compete successfully” (Jobber, Lancaster, 2009). The need to establish personal contact may vary depending on multiple factors such as: the type of buyer, the frequency of buying process, the novelty of the product, etc.

It is important for the management of the enterprise to know the types of staff that form the sales force, their characteristics and their specificity, precisely, in order to adapt the management strategies in general and the personnel strategies in particular to their development needs.

According to Kundu, the elements of sales management are: planning, coordination, controlling and motivating, while “a SWOT analysis is a basic tool for planning that a salesmanager” can utilize in many ways (Schwartz, 2006).

If we analyze the main types of sales, their characteristics could be summarized as follows:

Table 1: Types of sales

Type of sales	Advantages	Disadvantages
1. Sales with the help of conditioned reaction	Fast learning Selective information	The agent's motivation depends on the level of freedom offered to him in the presentation of the goods and the power of initiative and decision making
2. Sales with conscious reaction	Assumes the ability to identify needs Strong Relational Approach	Difficult learning process High costs
3. Development sales	Assumes Customer database expansion	The need of powerful personalities, creativity and communication can create problems

Type of sales	Advantages	Disadvantages
4.Maintenance sales	The staff has a vast experience in customer relationship and a good knowledge of their needs.	Low level of focus on new business relationship development, focusing on the old ones
5.Relational sales	Refers to creating long-term relationships, focusing on sales counselors	The clients come first, not the products sold

The modeling of the economic activity in relation to the market requirements presupposes knowledge of the dimensions and the structure of consumption. The research of these aspects is an important source of information.

The research of the actual consumption refers to its quantitative and structural aspects, with the highlighting of the particularities determined by several factors. Thus, the most common methods used in consumption analysis are:

- 1). Methods using consumption statistics, with the purpose of obtaining information from different reports regarding consumption
- 2) Methods based on information obtained directly from consumers.

2. Developing the commercial sector in Romania

The promotion of the consumer society also meant the development of the commercial sector, so during the last two decades, not few were the commercial networks that have entered on the Romanian market, extending exponentially over the years, by opening numerous subsidiaries in most of the counties and cities of Romania.

Thus, their level of profitability is higher, newspapers or publications in the field showing very high figures in this respect. According to publications such as Wall Street or Profit, the financial results of the trade companies, supermarkets or hypermarkets have been increasing since 2015. According to the data available on the website of the Ministry of Finance, the top 10 modern commercial networks have accumulated over the years 2016 – 2017, cumulative profits of over 350 million euros, in a positive evolution.

We can mention Kaufland, Carrefour, Lidl, Auchan, Metro Cash & Carry, Mega Image, Selgros, Rewe and Cora as the companies that have imposed themselves on the Romanian commerce market, greatly developing the big store sector and facilitating over time the access to various categories of products.

Among the most important features of each of these commercial networks, we identify the following in Table 2. We take as benchmark the year 2016, because for this year there is complete information for each of these companies:

Beyond the traditional trade, however, online commerce has grown enormously, with official data even mentioning Romania's highest growth in Europe, 38% (according to Ecommerce Europe). In 2017, the estimation was 2.5 billion euros, "but in reality the value of online shopping has reached 2.8 billion euros, more than 40% higher than in 2016. Online commerce in Romania has the potential to double the value by 2020, with the condition of investment increases and the support of

authorities to develop digital skills among the population, along with digital infrastructure" (according to Capital.ro).

Table 2: Results of the retails players

	Number of stores	Turnover	Profit	Number of employees
Kaufland	115 hypermarkets	2,13 billion euro	145 mil. euro	14.070
Carrefour	298 stores (32 hypermarkets, 213 supermarkets, 53 proximity stores)	5,6 billion euro	36,4 mil. euro	9.100
Lidl	200 stores	1,24 billion euro	48,3 mil. euro	4200
Auchan	33 hypermarkets	1 billion euro	- 5,3 mil euro	10.000
Metro Cash & Carry		968 mil euro	22,9 mil euro	4100
Mega Image	28 supermarkets 40 proximity stores	961 mil euro	30 mil euro	8600
Profi	Stores in 308 towns	788 mil euro	28,1 mil euro	12.000
Selgros		732 mil euro	25,2 mil euro	

Source: Wall Street.ro, Profit.ro

Augmented sales, on the other hand, involve a combination of reality and digital, with specialists identifying a high potential for development, as technology has become very present in our lives. Although the notion is not yet so popular in our country, augmented reality will grow more and more.

3. Case study. Research regarding the forms of sales preferred by the population of Resita

The purpose of this study is to analyze the sales forms (retail, online and augmented sales) preferred by the population of Resita.

The main objective of the research is to determine the preferred form of sale used by the inhabitants of the city.

The secondary objectives of the research are:

1. identifying the main categories of products purchased by the respondents
2. establishing the main stores requested by the subjects
3. Appraisal regarding the store network in Resita
4. analyzing the satisfaction degree of the subjects regarding the prices from the retail stores
5. identifying the categories of products purchased online
6. Identifying the stores that would use augmented sales.

In the present case, the subjects surveyed represent the population of the municipality, compressed into a representative sample.

The method of sampling used is the quota method, ie a rational choice of individuals, aiming to obtain at the sample level a structure by gender, age groups and

occupations, identical to the structure of the population of the municipality, using the usual data from the general presentation of population of Reșița on 01.01.2019. The period when the study was carried out was 1st - 28 February 2019, and the total number of respondents was 72, thus we can speak about a qualitative type research. The questionnaire was administered personally, the sample established being representative on gender and age, more than the criteria of income or education. Nevertheless, the proximity of a store is likely to influence the buying behavior of a customer.

As a form of research, the used a structured individual survey, that was based on a questionnaire consisting of 13 questions, namely 10 questions of content and 3 questions in order to identify the subjects.

The evolution in time is difficult to carry out, considering the fact that the respondents were selected aleatory.

The results of the qualitative studies depend highly on the level of observation of rules, also on their organization and performance, considering:

- the number of people interviewed;
- the sampling methods used;
- the development of qualitative research;
- the presentation and interpretation of the results.

Qualitative research usually „involves interviewing a limited number of people and seeks to reach deeper information levels related to specific subjects, the data not being statistically representative of the studied population” (Manciu, Demyen, 2018) from all points of view, as mentioned above.

The gender and age structure of the sample was the following:

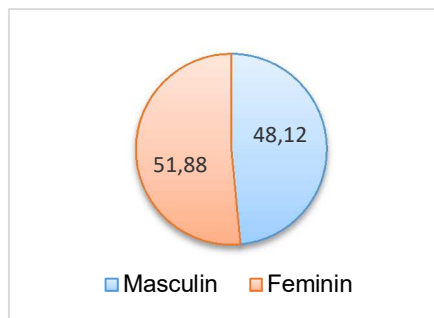


Figure 1: The sample structure by gender

Note: Masculin = Male; Feminin = Female

Source: developed by authors

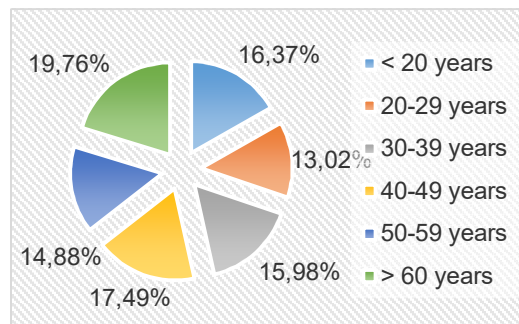


Figure 2: The sample structure by age criteria

Source: developed by authors

4. Conclusions of the study. Limits and future developments

The results of the study revealed the following:

- 40% of respondents have a monthly average income of less than 1400 lei, indicating a poor purchasing power (acquisition) of goods, 45% have an average monthly income between 1400-2300 lei, 15% have higher wages of 2300 lei, which is a small percentage compared to the first two variants.
- Of the people questioned, most declare that main part of the income is used for purchasing food (71%), while a much smaller percentage is allocated to the purchase of hygienic - sanitary products (8%), clothing, household appliances or luxury products (5%).
- If we would make an analysis of the European countries or even worldwide, regarding the way people choose to allocate their income, we see a certain imbalance in Romania, compared to other countries, in the idea that food products dominate in the case of Romanian consumers, especially bread, while the inhabitants of more economically developed countries can afford to buy luxury goods in a larger number.
- The most frequented shops, according to the respondents' answers, are those presented in the following diagram. We can see that Kaufland is the first one, preferred by respondents by 24%, which is demonstrated by the figures presented at the previous point of the paper, referring to the company's financial results.

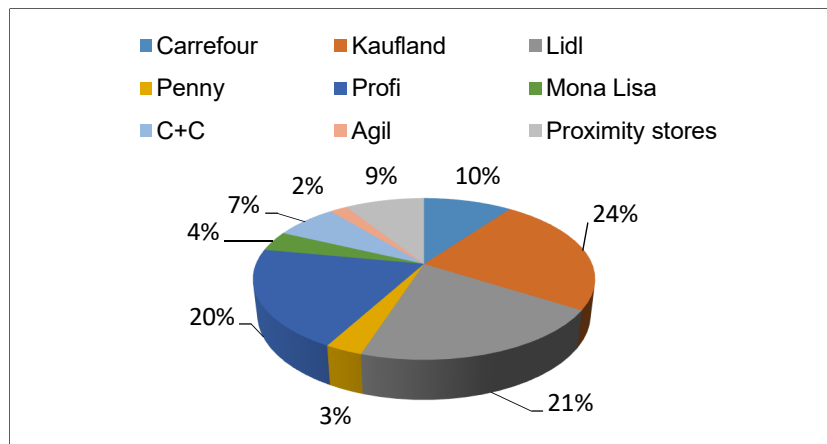


Figure 3: Stores preferred by customers

Source: developed by authors

- The people surveyed prefer the main stores, especially the big commercial chains, to the detriment of the smallest ones such as C + C, Agil or MonaLisa, considering that the big ones are much better supplied and have a much clearer development strategy than the smaller ones.

- Also, in terms of price, most respondents consider that they are accessible - 40% of the respondents, while a smaller number (17%) consider that the pricing policy is convenient.
- More than half of the respondents are satisfied with the products bought from the respective stores as well as with the prices, (57%), while a lower percentage (28%) qualify prices as high or even very high (15%), declaring themselves dissatisfied.
- The online commerce, however, it is becoming more and more popular, acquiring a higher level of confidence in the context of digitization, 68% of respondents claiming to practice this type of commerce, but they are mostly a young population, with greater openness to acquiring new technologies. We cannot exclude the older population, who, though less receptive to computerization, is still interested in progress.
- Classic trade is losing more and more land in front of online or mixed trade.
- In the online environment, the most commonly bought products remain clothing articles, as well as household appliances, which are mentioned by respondents in the proportion of about 35% each. The luxury products are purchased in a much smaller number, being mentioned by only 14% of the respondents, while the hygienic-sanitary products are purchased only in a percentage of 10%, the last one belonging to the category of products food, in contrast to the classic commerce. This latest trend is somehow natural, as food shortages often have short shelf-life and transport costs are not justified if small amounts of food are concerned. According to economic publication (Business Review), „the online shopping has changed consumer behavior, but the influence that online commercials have on buyers is different based on the level of income”.

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THE EFFICIENCY OF CHURCH IMPLICATION IN SOCIAL ECONOMY

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Abstract: *The church is reconsidering its attitude towards economy by even taking entrepreneurial steps to this meaning, predominantly in the field of social economy. For that matter, the Biblical texts not only avoid prohibiting this, but even advise the church to get involved in providing for a better living for believers. The social economy falls into place in Romania as well, as more and more "actors" are interested in this field. The Romanian orthodox church finds itself among these by finding a specific "purpose" within this activity. The present paper performs a cost-benefit analysis of the church implication in the social economy by identifying multiple, mostly non-monetary, benefits for the church and for the society.*

Keywords: *social economy; orthodox church; cost-benefit analysis.*

JEL Classification: *J46; J80.*

1. Introduction. Religion and economy

The complexity of the religious phenomenon makes it difficult to highlight the impact of religion on the economic life given the interactions between its elements and between such and the results of the economic activity.

The issue of the relation between religion and economy has crossed ages of analysis, instigating to debates on church's role and mission in relation to the purposes of organization and development of economic activities. The specialists within this issue (Weber, 1958; McCleary, Barro, 2006; Azzi, Ehrenberg, 1975; Finke, Stark, 1992; Finke, Iannaccone, 1993; Iannaccone, Stark, 1994; Iannaccone, 1991) analyze the relation between the way one religion or another see the relation between the individual activity throughout a lifetime and the possibility of redemption and conclude that the relation between religion and economy is bidirectional: "religion has a two-way interaction with political economy. With religion viewed as a dependent variable, a central question is how economic development and political institutions affect religious participation and beliefs. With religion viewed as an independent variable, a key issue is how religiosity affects individual characteristics, such as work ethic, honesty and thrift, and thereby influences economic performance" (McCleary, Barro, 2006, p.49).

Within the public conscience, the church's role is mostly spiritual, without being related to the economic life. In fact, down the ages, the church has assumed a multitude of roles alongside with the spiritual one: cultural, moral, educational, but also civic, uplifting the people's standard of living. As a matter of fact, ecclesiastic books highlight the latter role as well: "I have come that they may have life, and have it to the full" (John 10:10). Likewise, the parables of the talents or minas reflect the

accountability that the man, the community and the church have regarding the good enrichment of goods, respectively the repay for the good fulfilment of the work of each. In their turn, the Gospels' privileged theme is the compassion towards the ill, the poor, the needy.

According to Genesis, the Christian philosophy on labour is fractured by the human fall into sin. If, before this event, the human was related to divinity within the process of creator of labour, after the human fall into sin, the pattern of the labour has changed and it became a means of obtaining whatever is necessary for living: "By the sweat of your face you shall it bread Till you return to the ground (Genesis 3:19). The approach towards economy and religion is encountered yet in the XVIIIth century with Adam Smith, whom applies the principle "laissez-faire, laissez-passer" to the religious life, supporting the church separation from the state and a free and competition religious market, similar to the economical one. In his turn, theologian John Wesley preached of the human implication in the economic activity by advising: "Gain all you can, Save all you can, Give all you can". However, at the end of his life, he realizes that the religion-economy relation is not unidirectional as, in its turn, economy influences the religious life to the meaning of faith diminution and decrease of religious participation, in parallel to the growth of welfare and economic progress, reason for which he supports the need for use of gains for humanitarian purposes (Bălan, 2010). The bidirectional relation between economy and religion is also analysed by Laurence R. Iannaccone (1998, Introduction to the Economics of Religion), Rachel M. McCleary and Robert J. Barro (2006, Religion and Economy). Ștefănescu and Săveanu, (2013) consider that "Restricting the socio-medical catastrophes (epidemics, hunger), due to the higher living standards and to the development of medicine, but also due to the increasing capacity of preventing and limiting the effects of natural phenomena (earthquakes, droughts, floods), lowers the number of believers and religious practitioners or the frequency of formal religious practice" (p.134). Under these conditions, the church tends to turn more towards the individual behaviour and to the private property and less to the social-economic life. What seems to be a linking element between economy and religion is the morals, preached by religion and partially lost by economy. "The Holy Writ confirms two moral momentum to labour: the man works to feed himself and to not be a burden for the others and works to give to the poor" (Ică Marani, 2002, p. 124)..The interpreters of the Christian doctrine present labour as a "school of social justness" (St. Clement of Alexandria), believing that "laziness, and not labour, should be regarded as dishonesty" (St. John Chrysostom), and "the pious intent must not be a pretext for laziness and forbearance from labour, but more so an incentive to even more labour" (St. Basil the Great) (apud. Ică Marani, 2002, p. 215).

The economic personalism was built on this ground as a synthesis between the economic theory and the catholic theology, the founder of which was Karol Wojtyła, former Pope John Paul the IInd. This theory advocates for the implication of the person in all social life spheres in the view of social self-achievement and social integration of all persons, respectively the internalization of moral values in the economic activity.

When discussing Christianity, there is no unitary vision on the church implication in economy.

By means of Pope Leon the XIIIth, Catholicism formulates in 1891 the social doctrine of the church entitled "Rerum Novarum", by which it supports the catholic church's need to involve in social and economic issues such as: the labour issue (conflicts between labour and capital), the legitimacy of private property, the workers' right to a fair wage and affiliation.

Orthodoxy, impressed by slavophilia, was "doomed to look back, to condemn rationale in the name of affection, law..., in the name of love, capitalism in the name of rural community, ...up-to-datedness in the name of traditionalism (Ică, Marani, 2002, p38). Alongside history, the orthodox church had to adapt to the communist regime, and after 1989, to become up-to-date by adding to the pastoral speech a social-economic dimension as well, yet without such having priority. To this meaning, patriarchist Daniel states that: "Jesus Christ the Redeemer first preached the Gospel to the crowds..., then healed the ill and only in the evening made the miracle of the five loaves and two fish" (apud Ignat, 2013).

The relation between religion and economy approached by both economists and theologians, is seen differently. While Weber (1958) regards the protestant ethics as regenerating the capitalist spirit, Tomes Nigel (1985) claims that "economics is fundamentally atheistic. Religious beliefs, practices, and behaviour play no role in the life of homo economicus". The two opposite stands are counter-balanced by theories that consider that the cohabitation of religion and economy is possible (Dean, Fornaciari, McGee, 2003).

Eisenstadt's thesis(1968) is also interesting to Ștefănescu and Săveanu, "which replaces the causality relation between Protestantism and capitalism with the idea of religions' transforming potential, their capacity to redefine political and social institutions, to reformulate the economic roles or to generate attitudes that are favourable to economic growth" (Ștefănescu și Săveanu, 2013, pp. 138-139).

Another research within the Romanian area prioritizes religions depending on the encouragement and facilitation of the economic performance as follows: Judaism, Protestantism (Calvinism, Lutheranism), Catholicism, Orthodoxy, Islamism (Sunnis, Shi'a), Confucianism and Buddhism (Fudulu, 2010).

By understanding its mission, the church gets involved nowadays in social economy activities that enable it to support the employment of disadvantaged people and implicitly the increase of their standard of living. The church's choice towards social economy activities is in consensus with its ideology, according to which God orders to those who work to take care of the ones whom, due to certain reasons, cannot make a living, such as the disabled, the ill, the refugees, the orphans and the widowers, and to share the fruits of their work with them, and according to which the society watches over the equitable distribution of labour results (Ică, Marani, 2002, p. 215). Thus, unlike the liberal economy, which is mostly competitive, yet being of the type "bellum omnia contra omnes" (Th. Hobbes), social economy's highlights are on cooperation, aid, which are moral Christian values as well.

2. Cost-benefit analysis of church implication in social economy. Case study for a mediation social enterprise on the labour market for disadvantaged people with entrepreneurship provided by the church

During a period characterized by an extreme lack of manpower, the identification of new manpower sources proves to be extremely beneficial. Among these sources of human resources, we can mention vulnerable groups (disabled persons, gypsies, alcoholics, former convicts, retired persons), the ones that usually are marginalized, without qualifications or experience on the labour market, but that, under the support that consists of gaining a qualification and mediation on the labour market, can represent a significant manpower source, at least for certain fields of activity.

A church implication in the management of this situation within an organization that would offer mediation services on the labour market for persons belonging to vulnerable groups may prove itself extremely beneficial, much more as religion contributes to the development of certain personal features that are desirable from an economical point of view: honesty, diligence, tolerance, fairness, etc. (Barro, McCleary, 2003).

By such an action, on one side, persons belonging to vulnerable groups are trained for labour, and, on the other side, the manpower is provided by a series of activities without warping the church's mission as long as a number of persons would be drawn out from poverty by gaining a safe and stable wage income.

Religions' economic theory tends to adopt and apply, within the religion study, models of analysis that are specific to economy: the model of rational choice, the theory of public choice, the theory of games and, not least, the cost-benefit analysis (the latter mostly to assess the non-economic costs and benefits of certain activities). For the purpose of estimating the opportunity of an activity, of a policy or of a project, the cost-benefit analysis method may successfully be used, as it consists of referencing potential gains to the costs assumed by the activity.

The application methodology of this method implies, for each identified alternative, the quantification of costs and benefits, their comparison, the assessment of risks and the decision-making regarding the implementation of an alternative. If, in the case of economic costs/ benefits, there is the possibility to highlight them in terms of value, in the case of non-economic costs/ benefits, they cannot be quantified so easily.

As of church's implication in social economy, we can also discuss the economic and non-economic costs/ benefits.

Usually, social enterprises are microenterprises (from 0 to 9 employees and at least one of indicators "net annual turnover", respectively "total assets", is lower than the EUR 2 mil threshold, equivalent in RON) or, sometimes, small enterprises (between 10 and 49 employees and at least one of indicators "net annual turnover", respectively "total assets", frame into the EUR 10 mil threshold equivalent in RON). (Law no. 346/2004).

If we consider the case of a mediation services enterprise on the labour market for disadvantaged people (disabled persons, alcoholics, former prisoners, retired persons), this implies:

- incorporation expenditure (Articles of incorporation, name reservation, social capital, public notary fee for signature specimen) of approximately RON 1500;
- expenditure for the procurement of an office, be it by lease, purchase, construction (with the possibility to denominate offices for social enterprises by the public authorities) of approximately RON 12.000/ year (monthly rent of RON 1000);
- expenditure for equipment (furniture, 2 computers, 2 printers, labour market mediation software, 1 vehicle), of approximately RON 23.000 (depreciable in 10 years, annual depreciation value of RON 2.300);
- expenditure for utilities (water, power, heat, internet, telephone), approximately RON 6000/ year;
- wage expenditure (1 manager, 2 social assistants, 2 psychologists, at least two of them with motor impairment, respectively 40%¹), approximately RON 240.000/ year;
- advertising expenditure, approximately RON 2400.

To such the non-economic costs are added, respectively the community's perception on church's deviation from its role of granting religious services, advertising injury of the church involved in non-spiritual activities and even the loss of certain parishioners whom are less receptive to the church's innovating efforts.

As of income, such mainly results from:

- provided services (approximately 25% of the annual wage of the recruited person), an average of RON 3900 per person (RON 1300 net monthly wage * 12 months * 25%) if 5 persons are recruited in a month, the income for the 60 persons recruited on an annual basis will be of RON 234.000
- subsidies for employing disabled persons (RON 2250/ month/ person), RON 54.000 (only for the first year).
- facilities provided by the social economy law: gratuitousness for the issuing of the social mark and the registration with the social enterprise directory, free counselling upon the incorporation and/ or development of business, granting of areas and/ or fields within the public field, support for the promotion of executed and/ or supplied products, provided services or executed works within the community, as well as for the identification of certain outlets of such, other facilities and tax exempts granted by the local public administration authorities (Social economy law, 2015). These facilities may decrease the costs by approximately 10%, respectively by RON 26.420, yet without having the certainty of achievement of such facilities (reason for which I will not give them a numeric value).

The non-economic benefits are added as well, respectively the decrease of poverty within parishioners, church appreciation in terms of the new assumed activities, gaining certain parishioners, moral value added to the economic activity, as well as providing the market with deficit goods (in this case, manpower).

¹Acc. to the social economy law, at least 30% of the employees must belong to vulnerable groups

COSTS

Economic costs:

- C1 Expenditure for the incorporation of the social enterprise RON 1.500 (only for the first year)
 - C2 Expenditure for the procurement of spaces (lease) RON 12.000
 - C3 Expenditure for equipment RON 2.300
 - C4 Expenditure for manpower RON 240.000/ year
 - C5 Utilities RON 6000/ year
 - C6 Marketing RON 2400/ year
- Total: $\sum (C1; C2; C3; C4; C5; C6) = \text{RON } 264.200$

Non-economic (social) costs

- CS1 Church's deviation from its role of granting religious services
- CS2 Advertising injury of the church involved in non-spiritual activities
- CS3 Loss of certain parishioners

BENEFITS

Economic benefits

- B1 Income from provided services RON 234.000
 - B2 Subsidies for the employment of disabled persons RON 54.000 (only for the first year)
 - B3 Decrease of pressure on the social services system
- Total: $\sum (B1; B2; B3) = \text{RON } 288.000$

Non-economic (social) benefits

- BS1 Decrease of poverty within parishioners
- BS2 Church appreciation in terms of the new assumed activities
- BS3 Gaining certain parishioners
- BS4 Moral value added to the economic activity
- BS5 Providing the market with deficit goods
- BS6 Satisfaction of provided work for persons within vulnerable groups
- BS7 Increase of occupational degree

It can be noticed that the income slightly exceeds the expenditure; the differences could be greater if the facilities provided by the Social economy law are to be used. On the other side, there already exists the possibility to use a professional management that frames into the percentage of employees whom are outside vulnerable groups and whom may provide for a sustainable and profitable growth of social economy enterprises and whom may be capable to handle the market competition. Given that the vulnerable persons represent a significant source of manpower, it may be estimated that the activity of this organization may grow by offering, on one hand, new job positions, but, on the other hand, by intermediating job finding for vulnerable persons and implicitly the increase of the standard of living and the decrease of the feeling of uselessness among such.

On the other hand, the non-economic benefits are multitudinous and more valuable I would say. The enrichment of the economic activity with moral values, the replacement of the feeling of uselessness with the satisfaction of work for vulnerable

persons, the improvement of church image upon the involvement in economic activities that contribute to the growth of the parishioners' standard of living, the assumption of certain social beneficial activities by the contribution to the decrease of pressure on social services systems, the increase of occupational degree and market provision with deficit goods are equally desirable aspects for any economy. I have analysed the case of an enterprise providing labour market mediation services for vulnerable persons considering that it is a type of activity that is seldom met in the economic area, but that is extremely beneficial for potential beneficiaries, as well as for employers, especially within a period characterized by the lack of manpower in most of the fields.

3. Conclusions

The church reconsiders its attitude towards economy, and the social economy fully serves the humanitarian purposes and objectives of the church. Church's implication in economy brings advantages to both sides, both to the church and to the economic life, but mostly to the vulnerable persons whom, being framed into labour by the support of the church, may exploit their potential and provide for a better life by own means.

The church entrepreneurship may bring innovative ideas to the social economy space, given that the priest deeply knows the needs and possibilities, the existing opportunities within a parish. Moreover, the priest benefits from the power of his words during the religious service to empower the Christians to a successful enterprise.

The cost-benefit analysis reflects the fact that the activity of a social economy enterprise may be efficient and profitable if it is organized based on solid economic principles, if it identifies outlets for the provided goods and services and if it produces quality goods and services that are comparable to the ones produced within the liberal economy - in other words - if it provides for competitiveness.

I consider that the analysis on the company that provides mediation services on the labour market is a starting point to a long line of suggestions of social economy enterprises that the church could successfully undertake, thus contributing to the increase of the occupational degree and decrease of poverty within vulnerable persons and to the creation of an increasingly better image within the community.

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SUSTAINABILITY REPORTING PROCESS: BENEFITS, LIMITS AND ACHIEVEMENTS

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Abstract: It's universally accepted that the private sector is playing a great role in the modern society, contributing to the economic development of the community it serves. More than that, *companies have a strong influence on the life of their consumers, their suppliers, their employees and on the communities in which they operate. Business organizations have a powerful impact on society's well-being through the working conditions they are offering, training provided to employees, health coverage, payroll and taxes paid to local authorities, quality of the products and services provided to the population, environmental impact of their activity and so on. In brief, apart from the economic outcome and the spill over effect of their activity, they also have an environmental and social footprint. Nowadays, many companies are aiming to achieve economic performances while placing greater emphasis on social and environmental objectives, turning into sustainable companies. The first steps have been made by the biggest corporations in the world who started to report on their performance in terms of sustainability, mainly due to the pressure exerted by the society, by the governments, by the investors and NGOs. They are focusing on sustainability as a mean of creating value for shareholders and managing the interests of other stakeholders, including employees, suppliers, governments, creditors and societies at large. Their purpose evolved and it's not just ensuring long term profitability and competitive advantage but also to contribute to the well-being of the society, the planet, and its inhabitants. The active engagement of corporations is essential if the world wants to achieve changes that are required in order to align the planet on the path of sustainability. But how can we know if it's true and how can their performance be measured and evaluated? In this paper we aim to emphasize the role of measuring sustainable performances of the company and mandatory reporting and audit. Our purpose is to identify the global reporting trends for sustainability performance for the largest companies in the world and also to identify the limits of current reporting process. Another objective is to determine the Romanians reporting rate according to GRI Standards compared to other countries from the south-east Europe.*

Keywords: *sustainability; reporting; performance; GRI; corporations.*

JEL Classification: *Q01, M14, G30.*

1. Introduction

Applying the concept of sustainable development (SD) to the private sector, the collocation corporate sustainability (CS) emerges. According to Figge et al. (in

Morioka, et.al., 2018), in order to enable CS, SD principles must be incorporated into the business. In this way, environmental and social objectives will stem from the business strategy itself.

Integrating sustainability into the business is nowadays a necessity. Why? Hussain, Rigoni, & Orij (in Molla, Ibrahim & Ishak, 2019) considers sustainability to be a pressing issue for the companies all over the world in order to gain a competitive advantage in a resource constrained environment. More than that, the increasing rate of population, urbanization and industrialization have severe implications regarding the economic, social, and environmental conditions of different developing countries. In order to respond to these challenges, companies need to adopt sustainability practices in their businesses (San, 2016).

Investments in socio-environmental initiatives are now seen also as an opportunity for innovation and for increasing competitiveness (Morioka, et.al. 2018). Furthermore, Margolis & Walsh (in (Molla, Ibrahim & Ishak, 2019) asses that companies are achieving also other benefits from integrating sustainability in the business. These benefits include: enhanced risk management, new customers, access to capital, enhanced productivity and brand value, cost optimization and good reputation. As a company, having a good performance in terms of sustainability has an important role in reducing corporate scandals.

Appart from these opportunities, companies have to take full responsibility for their actions (Morioka, et.al., 2018). Some investors and shareholders, clients, the mass-media, local communities, employees, environmentalists or NGOs consider that companies should be more responsible to all of their stakeholders in addition to just earning profits (Searcy, 2012, Bădulescu, Bungău & Bădulescu 2015).

As a result, corporate sustainability matter has now become an important concern for companies than it was ever before, a fact reflected also in Global Risks Report 2016 of the World Economic Forum (Molla, Ibrahim & Ishak, 2019).

Moving forward, authors (Cooper & Edgett, Ehrenfeld in Morioka, et.al. 2018) argue that firms can only manage what they can measure. In this approach, we consider that all the business organizations that claim to be sustainable (but not only them) should use a system capable of measuring sustainability performance and report their results year after year, as they do with their financial ones. But this is not a new idea. Actually, nowadays, stakeholders are increasingly demanding for more transparency and more disclosures not just on economic performance but also on the company's environmental and social practices (Waddock, 2003). Since the financial crisis, corporate reporting is subject to the close scrutiny of regulators, policy makers, and other reports' users. Investors are asking for more accurate and reliable financial and nonfinancial information on different KPIs such as corporate governance, business models that create sustainable performance, risk assessment and other issues of strategic and significant importance to the stakeholders. In brief, investor confidence and public trust in corporate reporting are the factors that determine the perceived usefulness of corporate reports (Brockett & Rezaee 2012). This has been the main driver for developing corporate sustainability reporting tools (SRTs), which can be find in the literature as: corporate social responsibility (CSR) reporting, triple bottom line (TBL) reporting, sustainable development (SD) reporting,

non-financial reporting or environmental, social and governance (ESG) reporting (Siew, 2015,). Thus, as business sustainability matters gain more attention and more companies in the world issue these types of reports, Brockett & Rezaee (2012) argue that the various types of sustainability and CSR reports should converge under one globally accepted and practiced caption, preferably “sustainability reporting.” They also state that this type of reporting serves two purposes: internal purposes (used for managing and reporting on the level of sustainability performance, benchmarking and evaluation) and external reporting (is used for decision-making purposes by all stakeholders and also to ensure compliance with all the applicable standards, laws, rules and regulations).

Several organizations, international standard-setters and regulators have suggested ways for improving the quality, reliability, usefulness, transparency and comprehensiveness of corporate reporting. According to Brockett & Rezaee (2012, p.18), “reporting business sustainability has gained significant attention and acceptance throughout the world in recent years due to support and promotion from GRI, the Prince of Wales’s Accounting for Sustainability Project, the International Integrated Reporting Committee, and the IFAC, among other organizations”. Nowadays, GRI sustainability reporting guideline is the most widely *and internationally* accepted, recognized and extensively used guiding principle for measuring and reporting the sustainability practices by the companies and researchers (Molla, Ibrahim & Ishak, 2019).

The GRI (2011) defines sustainability reporting as “the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development.” The emerging issues in sustainability reporting, according to GRI, are the three I’s: integration, implementation and integrity’ (Brockett & Rezaee, 2012, p.17).

2. The relevance of disclosing nonfinancial information

2.1 A short history of corporate sustainability reporting

The beginning of sustainability reporting can be traced back to the 1960s and 1970s in Europe and slightly later in the US when the organizations started to recognize their role in the society beyond profit maximization. The sustainability movement and reporting in the United States dates back to the first Earth Day held on April 22, 1970 (Brockett & Rezaee, 2012). After that, the movement gained momentum with a United Nations report issued in 1987, known as the Brundtland Report which promoted sustainability as a form of balancing economic, social and environmental matters and provided the most common definition for SD (Bâc, 2013). Also, the acceptance of corporate social responsibilities in countries like France and the Netherlands encouraged the introduction of environmental reports in other countries such as Germany, Austria and Switzerland during the 1970s. The country that adopted for the first time a mandatory sustainability reporting law was Finland, in 1997 (for state owned corporations) (Ioannou & Serafeim, 2017). Other countries adopting similar laws are China, Denmark, France, Germany, Greece, Indonesia, Australia, Austria, Canada, Italy, Malaysia, Netherlands, Norway, Portugal, Sweden,

and the UK. During the 1990s, reporting financial and nonfinancial KPIs gained some acceptance through the introduction of values reporting, with a primary focus on social, environmental, and animal protection issues (Deloitte in Brockett & Rezaee, 2012). In 1999, the United Nations Environment Programme (UNEP) joined with Ceres as a partner in the GRI project with the purpose of developing a sustainability information disclosure framework. The first version of GRI Guidelines was published in 2000 aiming to offer support for companies in creating sustainability reports that integrate social, environmental and economic impacts of business (Brockett & Rezaee, 2012).

In 2010, the Securities and Exchange Commission (SEC) issued a report named "Commission Guidance Regarding Disclosure Related to Climate Change," which required public companies to disclose the risks (material, financial and reputational) associated with global climate change. During the same year, the International Integrated Reporting Committee (IIRC) was formed with the primary goal of creating a globally accepted framework in order to standardize reporting on sustainability performance. The International Organization for Standardization (ISO) developed at the end of 2010 "ISO 26000" guidelines for social responsibility reporting which are focused primarily on the value and relevance of public reporting on social responsibility performance to internal and external users.

In 2011, the Singapore Stock Exchange (SGX) launched a "Sustainability Reporting Guidance" framework and required its listed companies conduct business in a sustainable manner and also to disclose accountability for their operations (Green Consult, 2012). Also, in order to measure companies' performance in sustainability, a lot of stock exchanges created sustainability indices. The pioneer was the New York Stock Exchange, which created the Dow Jones Sustainability Index (DJSI) in 1999. Following the same trend, the London Stock Exchange created the FTSE4Good (Financial Times Stock Exchange) in 2001, and the BSE Values from Johannesburg JSE (2003) followed by BM & FBOVESPA (2005) which became the third and fourth largest stock exchange in the world that implemented a Corporate Sustainability Index. Currently, 18 stock exchanges use global sustainability indices (Albuquerque da Silva et al., 2019).

2.2 Why to report? The necessity and the benefits of CS reporting

Why would companies disclose nonfinancial information related to their business activity to stakeholders? One reason relates to the realization that nonfinancial performance measures often present a leading indication for predicting and improving future financial results. For example, large companies (e.g, DuPont, Mobil, Allstate, Gap, Inc., British Petroleum-Amoco) recognize the potential comparative advantages that can be generated by publicly disclosing goals related to both nonfinancial and financial performance and then reporting on the achievement or the progress made over time. Another significant reason is showing external stakeholders the extent to which their enterprise risk management processes are effective (Ballou&Heitger, 2005).

Brockett & Rezaee (2012) presented three important ways that sustainability development and reporting may affect long-term economic performance and

shareholder value. First, by adopting sustainable practices, management can be prepared for inevitable regulations or laws. Second, “sustainability initiatives are generally viewed positively by investors and other stakeholders as the evidence of management commitment to long-term sustainable economic performance, social responsibility, and customer satisfaction create an edge over competitors.” When two firms report the same profitability, investors typically invest in the one that is more environmentally and socially responsible. Finally, employees, suppliers, customers and other stakeholders are generally inspired by environmentally friendly, socially responsible and ethically driven companies. They realize that management concentration on sustainability performance is incorporated into earnings management activities that will likely create short-term gains and generate sustainable value over time (Brocket & Rezaee, 2012, p. 87).

From another perspective, Zenya & Nystad (2018) state that companies opt for a sustainable business strategy due to intrinsic and extrinsic reasons. On one hand, the intrinsic incentive is that sustainability is good for business because it leads to increased turnover through product innovation, higher stock prices and reduced costs through energy saving. On the other hand, the extrinsic reasons are related to the positive impact they can have on the world—e.g. some firms have taken measures to reduce their waste to minimise their ecological footprint and not harm the environment and others have created jobs in conflict areas.

Although regulations and best practices regarding business sustainability vary significantly worldwide, one global trend is emerging: investors’ need for more transparent and reliable sustainability information. Sustainability reports can provide investors and the capital markets with relevant information regarding performance. An integrated reporting of indicators, material flows and integrated accounts is necessary to provide persuasive information to investors and stakeholders in order for them to make sound investment decisions (Shields & Šolar, 2007). “The most persuasive information is reliable, useful, transparent, timely, and relevant to all five dimensions of performance” (Brocket & Rezaee, 2012). Along with the need to address stakeholder requirements which is a reason widely recognized in previous researches, Searcy (2012) considers that additional corporate motivations could include: improved reputation, cost savings, improved employee motivation and retention, enhanced competitiveness, and reduced risk, among others. However, many authors have moved from a focus on whether or not corporations should engage in sustainability to how it can be done in practice (Searcy, 2012).

2.3 The limits and critics of current reporting

Although reporting on sustainability aspects is essential, there are authors that do not agree with the current status of reporting, framework, methods or applicability. For example, Siew (2015) concludes that much of corporate sustainability reporting can be viewed as a way of hiding actual practices. According to Milne and Patten (in Siew, 2015), the proclaimed sustainability practices of some corporations merely act as ‘façade to cover the “back stage” activities from a concerned society. They consider that the ESG assessments based on such reporting is failing to truly distinguish the leaders from the laggards.

Siew (2015) concluded based on his research that numerous studies (reporting (Poelloe, 2010; Derwall et al., 2004; Gompers et al., 2003; Opler and Sokobin, 1995; Orlitzky et al., 2003; Bauer et al., 2006; Hamilton et al., 1993; Angel and Rivoli, 1997) examining the link between environmental, social and corporate governance (ESG) practices as reported and corporate financial performance have yielded mixed conclusions, probably due to the inadequacy of the current framework.

Another limit of sustainability reporting was identified by Ballou & Heiger (2005) who argue that despite the fact that these reports potentially are a very effective tool, the concern is that there are no generally accepted standards for how these reports should be prepared (although GRI standards are a possibility) and, thus, a lack of auditing associated with many of the reports issued. As a result, there aren't many barriers to companies that wish to misrepresent the information within the reports.

Going forward, Isaksson & Steimle (2008) on their study on the cement industry, lead to the conclusion that the GRI guidelines are not sufficient to make sustainability reporting relevant and clear. They consider that the guidelines are not sufficient for assuring that a report answers the questions of how sustainable a company is and how quickly it is approaching sustainability. Within the GRI guidelines the needs of the customers are not considered sufficiently. This points at an important area where business excellence ideas can support sustainability reporting. They proposed, for instance, to overcome this gap by including the concept of cost of poor quality into sustainability reporting guidelines.

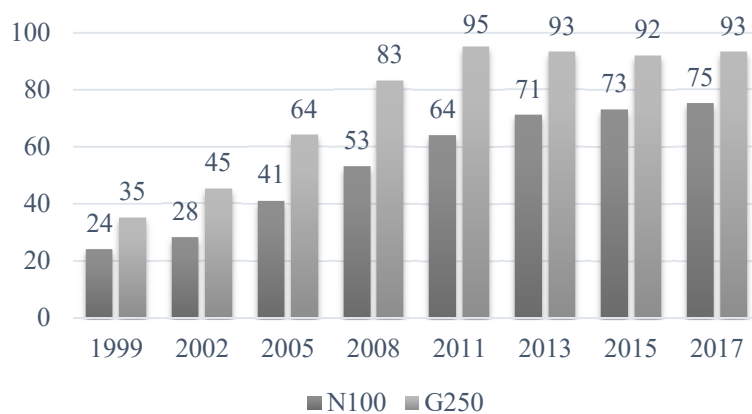
Another critic addressed to the current sustainability reporting process is that is not mandatory everywhere, by law and not under a global standard and unanimously accepted framework. According to Corporate Knights report (2016) mandatory and prescriptive sustainability disclosure requirements work and countries that have them lead and those that don't, lag. The argument is based on their experience measuring the state of sustainability disclosure, starting with 2011; at that time the conventional wisdom was that the best way forward was to issue principles-based guidance; however, 5 years later they found evidence and concluded that the "report what you feel you like" approach in the absence of minimum mandatory standards is not a recipe for useful reporting. "With the exception of Switzerland (which is affected by its European context), all of the top 10 exchanges are domiciled in countries with mandatory sustainability disclosure requirements, and the converse holds for the bottom 10 exchanges (with the exception of the Shenzhen Stock Exchange, likely due to enforcement issues)". In view of the fact that most highly ranked stock exchanges have at least one mandatory, prescriptive and broad policy instrument designed to regulate sustainability disclosure, their recommendation is that policy-makers should consider adopting such policies or convert existing voluntary policies into mandatory ones that provide specific and itemized disclosure requirements (Corporate Knights).

Ioannou & Serafeim (2017) are however, more sceptical and stated in their working paper that it is not clear how such mandatory disclosures might affect companies. On the one hand, increased transparency, to the extent that it is achieved through mandatory reporting laws and regulations, could discipline companies and motivate them to do better regarding socio-environmental dimensions of performance. On

the other hand, it could also generate negative externalities as companies with superior sustainability disclosure will have to exert greater efforts and possibly incur higher costs to distinguish themselves from the rest of the companies in the period following the regulation. In other words, mandatory reporting could result in a „costly pooling rather than a separating equilibrium with respect to the value of sustainability disclosures, and can thus eventually destroy shareholder value” (Ioannou & Serafeim, 2017, p.2).

3. An overview of the progress made on corporate sustainability reporting

In order to measure the progress made on corporate sustainability reporting, we analyzed a report from the Governance and Accountability Institute and also audit reports from KPMG from recent years. We gathered the data and summarized the evolution regarding the number of companies reporting over the last years. The companies analyzed were from 3 different groups: G250 (top 250 companies by revenue in Global Fortune 500), N100 (top 100 companies from a selection of 45 countries) and S&P 500 (the companies included in the S&P index, usually large public US companies). In 2000 only 44 organizations followed the GRI guidelines to report some information regarding sustainability, whereas in 2010, their number grew to 1,973 (Brocket & Rezaee, 2012). As of November 2019, there are 33.844 GRI reports available from 14.252 organizations from all over the world (<https://database.globalreporting.org/>). We also used GRI database to identify the progress made on the reporting process using these standards.



N100: top 100 companies from the 45 countries analysed (a total of 4500 companies)
G250: top 250 companies by revenue listed in Global Fortune 500

Figure 1. Sustainability Performance Reporting among companies between 1999 and 2017 (%)

Source: adapted by the authors based on the data available in KPMG International (2015&2017)

More and more companies are reporting on sustainability and the numbers of those using the GRI Standards continues also to grow. According to KPMG (2017), 93% of the world's largest 250 corporations report on their sustainability performance and most of them (74%) use the Global Reporting Initiative guidelines. Based on their research done on G250 (top 250 companies by revenue in Global Fortune 500) and N100 (top 100 companies from a selection of 45 countries), there is an increasing tendency for sustainability reporting for both groups (Figure 1).

In a different research, the G&A Institute reveals that 85% of S&P 500 Index Companies published sustainability reports in 2017 and the percentage of those who are reporting is higher and higher each year (Figure 2) (G&A, 2018, <https://www.ga-institute.com/press-releases/article/flash-report-85-of-sp-500-indexR-companies-publish-sustainability-reports-in-2017.html?type=123>).

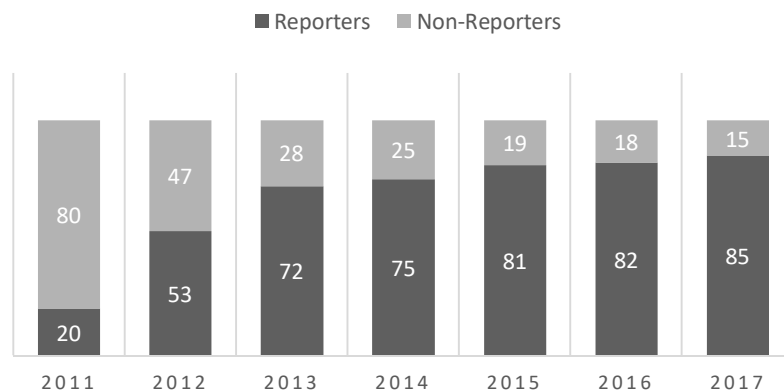


Figure 2. The Evolution of Sustainability Reporting for S&P 500 Companies (%)
Source: Governance and Accountability Institute, Inc. (2018) available at <https://www.ga-institute.com/press-releases/article/flash-report-85-of-sp-500-indexR-companies-publish-sustainability-reports-in-2017.html>

In the following table (Table 1) we made a comparison between 6 south-eastern European countries, part of EU, in term of economic development, business demography and C.S reporting activity. For economic prosperity, we used the GDP/capita indicator (EUR) for 2018 (the most recent data available) while for researching business demography we establish to reveal the results of 3 indicators: number of companies with more than 250 employees, the average of persons employed (only those with more than 250 employees were taken into consideration) and their turnover (million euros). In terms of timeframe, in the table are reflected the results for 2017 as there is no available data for 2018 yet. Moving forward to sustainability reporting statistics, we used the GRI database to find out the numbers of large and multinational companies reporting and the total number of reports published by November 2019; we also calculated the reporting rate for each country based on the numbers of reporters and the number of total companies (for GRI

reporters we searched for large and multinational companies and for total large companies, we selected the range >250 employees).

Table 1. A comparison between south-eastern European countries

Country	GDP/cap 2018 (EUR)	No of companies >250 employees	Persons employed/ company	Turnover (mil EUR)	No of sustaina bility reports	Reporters	
						no	%
Bulgaria	7,980	675	750	40.600	28	12	2
Croatia	12,560	416	761	32.969	110	23	6
Romania	10,420	1663	848	123.805	94	33	2
Slovenia	22,080	233	740	33.067	74	16	7
Slovakia	16,470	581	776	84.240	73	11	2
Hungary	13,690	935	904	127.743	294	74	8

Source: created by authors based on the data available at <http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do> and at <https://database.globalreporting.org/search/>

What we want to emphasize is that although Romania has the biggest number of large companies from the region and ranks second as the number of persons employed by these companies, it has the lowest reporting rate (as well as Bulgaria) with only 2% of companies disclosing sustainability practices based on GRI guidelines. For 2019, only 4 companies published their report and only 3 were according to GRI-Standards while the other one was a non-GRI report. Romanian law regarding sustainability reporting has changed in 2018 (O.M.F.P. Nr. 3.456/2018, Art. 7, 8) and according to the new regulations, all entities that exceed the criteria of having an average number of 500 employees, must include in the administrators report a non-financial statement containing information on at least the environmental, social and personnel aspects, human rights, corruption and bribery aspects. However, the law is vague and does not mention a standard procedure on how to report these aspects, how will be they audited and does not enforce companies to apply to GRI standards or another framework that would allow comparisons or progress measurements.

4. Conclusions

Our present research emphasizes the progress made on sustainability reporting, a process that we consider essential for the current business environment which requires more transparency and reliability for all the stakeholders involved. In order to align the planet on the sustainability path, companies and especially big corporations are considered to be an essential stakeholder whose actions have a big impact on the environment, on the economic development and on the well-being of the community. Reporting on the sustainability performances is one step forward as in this way, the sustainable development practices are accessible, available, can be widely spread and the probably the most important aspect is that performance can be measured so that actions and decisions for continuous improvement can be

taken. Despite the fact that there are unanimously accepted standards for reporting, only a small percentage of the companies actually use them and not in all the countries reporting is mandatory by law. Our research is limited and is mostly quantitative as we only researched and measured numbers of reports, reporters from different groups but we didn't analyse qualitative aspects such as the content and requirements of the standards, the quality of the reports submitted by companies, indicators used for measurement and so on. Further researched could take into consideration these aspects of reporting and create for example, benchmarking between companies from the same industry in terms of sustainability.

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A COURNOT-BERTRAND MODEL USING VARIOUS PRODUCTS

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Abstract: *Imperfect competition represent a known issue on modern economic analysis. Monopoly case classical induce a worse solution for consumer side but in the oligopoly competition scenario it will be possible to obtain a solution close to perfect competition situation. In this case, two of the most well-known game theory models in imperfect competition are Cournot model, respectively Bertrand model. First one offers an output equilibrium solution, while the second one, advocating for price competition, highlights an equilibrium solution in terms of price. Alongside these two models, in the last period, we can also note an increasing interest for the Cournot-Bertrand mixed scenario. All these three behavioral types can be identified in the real market. This paper aims to analyze a duopoly market, with linear demand and cost functions, as well as product differentiation characteristics, where a Cournot behavior is adopted by one firm and a Bertrand behavior by the other one. Both firms manage to survive on the market and a stable equilibrium will be manifested if there is sufficient product differentiation. In a very low product differentiation / very high product homogeneity scenario instead, the adjustment process proves to be a divergent one, undermining the equilibrium stability. In a homogenous products context, the Cournot-type firm will produce the perfectly competitive output level and the Bertrand-type competitor will leave the market. The selling price will match the marginal cost and duopoly profit will be null. Even with just one firm on the market, the basic threat of a Bertrand – type potential competitor, warrants a very prudential behavior while also further ensuring the perfect competitive outcome level. The paper is looking to also analyse in detail the existence of Nash equilibrium point, its local stability and uniqueness, as well as the product differentiation impact on this equilibrium and players surviving potential on the market. The final part of the paper contains a simulated study case for price, quantity and profit evolution for various values of model parameters.*

Keywords: *Cournot-Bertrand model; product differentiation; oligopoly theory.*

JEL Classification: *C72; D01; D43; L13.*

1. Introduction

The starting point of oligopoly theory is the Cournot classic model (1838), who derived the Nash equilibrium in a static duopoly game with firms producing perfectly homogeneous goods, choosing simultaneously the output level, in market's demand and price full awareness scenario. At an equilibrium scenario, the price level becomes lower than the monopoly case, but higher than marginal cost. Bertrand (1883) analyzed the same game as his predecessor, choosing the price strategy

instead of output one. He has discovered another Nash equilibrium, price matching the marginal cost and the firms profit being zero. These basic models highlights the idea that the choosing of price or output as strategic variable, in an oligopoly with strategic interaction, has a huge impact on the Nash equilibrium

In the last decades, an increasing interest on the static Cournot-Bertrand model has been manifested. As per its name, the model consider one firm competing in output (Cournot type) and another one, competing in price terms (Bertrand type). Singh and Vives (1984) proved under certain conditions of demand and cost, if two firms can choose to compete in output or price the dominant strategy for both is to compete in output rather than price (Cournot case), in substitute products scenario. Lately, Häckner (2000), Zanchettin (2006), Arya et al. (2008), and Tremblay et al. (2009) explain how exeactly technological and institutional conditions as well as demand assymetries can modify firm profits, optimality being reflected in Bertrand or Cournot-Bertrand model.

Considerind the wide range of theoretical possibilities, Kreps and Scheinkman (1983) assert that firms decision to compete in output or price terms is lastly an empirical question. In the real world, all three behavior's type (Cournot, Bertrand, and Cournot-Bertrand) could be found. Hotels set prices, while flower producers set quantities. In the Japanese electronic industry, Sanyo set prices whilst Panasonic set quantities (Sato, 1996). From this point, any future research on the Cournot-Bertrand model will be warranted and could also improve actual understanding of oligopoly markets.

Tremblay and Tremblay (2011) investigate the Cournot-Bertrand model, some interesting ideas emerging from their research: in homogeneous products case, Cournot-type firm produces the perfect competitive level of market output, whilst Bertrand-type firm leaves the market. The mere threat of a Bertrand-type potential competitor, ensures the perfectly competitive outcome, demonstrating the dramatic effect this one can have on the market power.

The next paragraphs will cover the impact of product differentiation degree on a Cournot-Bertrand static equilibrium model, highlighting certain interesting aspects such as stability, market surviving potential and also product differentiation influence on Nash equilibrium theory. The principles of the related mathematic model are also analised.

2.The Model

The used scenario presents two producers, i and j , competing on the same market, establishing simultaneously their own action paths. First one decides to adopt a Cournot behaviour, competing in quantity terms, whilst the second adopt a Bertrand behaviour, competing in terms of price. The common aim is to maximize their own satisfaction / profit, whilst fully aware of market conditions.

The products may differ by few features and producers can have a high appetite for variety, as per Beath and Katsoulacos (1991). For example, we can mention the real scenario of consumer dilemma, where ask to choose to spend his money in a fast – food or in a coffee shop. Those one may differ in geographic location, quality of

services, atmosphere and despite the fact that consumers will always prefer a certain type of service over the other one, he decide to try both services in a certain time period.

We consider the substitutes products scenario, where above mentioned kind of differentiation can be translated into a linear demand system, as per Dixit (1979), Singh & Vives (1984), Beath & Katsoulacos (1991), Imperato et al (2004), Tremblay (2011) have already mentioned.

The inverse demand functions are:

$$\begin{aligned} p_1 &= a - q_1 - dq_2 \\ p_2 &= a - q_2 - dq_1 \rightarrow q_2 = a - p_2 - d * q_1 \end{aligned}$$

where $a > 0$ and $d \in [0, 1]$. If $d=1$, homogeneous products case can be identified whilst each one acts as monopolists when $d=0$. More precisely, d is an index, whose value is inversely proportional with differentiation degree (differentiation diminishes at d value increases). It also reflects the nature of the products, positive values being specific for substitute products, negatives values for complements scenario, whilst zero values highlights independent products. Demand function decreases in each product's price, but increases/decreases in competitor's price, in substitute/complement products scenario.

In current model, the demand system in strategic variables, q_1 and p_2 is:

$$\begin{cases} p_1 = a - ad + (1 - d^2)q_1 + dp_2 \\ q_2 = a - p_2 - dq_1 \end{cases} \quad (\text{see Apendix A})$$

Cost of production is considered to be linear and identical for both firms c , also matching marginal cost. Thus, the profit function for firm i is:

$$\pi_i = (p_i - c)q_i, (\forall) i = \overline{1, 2}, c \in (0; a)$$

Marginal profit expressions represent the starting point in the best-reply functions determination

$$r_1 : p_2 = \frac{c+ad-a}{d} + \frac{2(1-d^2)q_1}{d} \quad r_2 : p_2 = \frac{a+c}{2} - \frac{dq_1}{2}$$

and further to Nash equilibrium values revealing :

$$\begin{aligned} p_1^* &= \frac{a(2 - d - 2d^2 + d^3) + c(2 + d - d^2 - d^3)}{4 - 3d^2} & p_2^* \\ &= \frac{a(2 - d - d^2) + c(2 + d - 2d^2)}{4 - 3d^2} \end{aligned}$$

$$q_1^* = \frac{(a-c)(2-d)}{4-3d^2} = \frac{(a-c)(2-d-d^2)}{4-3d^2} \qquad q_2^*$$

$$\pi_1^* = \frac{(a-c)^2(2-d)^2(1-d^2)}{(4-3d^2)^2} = \frac{(a-c)^2(2-d-d^2)^2}{(4-3d^2)^2} \qquad \pi_2^*$$

We further use Dixit's necessary and sufficient stability condition (1986), in order to test the Nash equilibrium stability: $|\pi_{ii}| > |\pi_{ij}|$, where $\pi_{ii} = \frac{\partial^2 \pi_i}{\partial p_i^2}$ iar $\pi_{ij} = \frac{\partial^2 \pi_i}{\partial p_i \partial p_j}$, $i, j = \overline{1,2}$

$$\begin{cases} \frac{\partial^2 \pi_1}{\partial q_1^2} > \frac{\partial^2 \pi_1}{\partial q_1 \partial p_2} \\ \frac{\partial^2 \pi_2}{\partial p_2^2} > \frac{\partial^2 \pi_2}{\partial p_2 \partial q_1} \end{cases} \implies \begin{cases} |-2(1-d^2)| > |d| \rightarrow 2(1-d^2) > d \rightarrow 2d^2 + d - 2 < 0 \\ |-2| > |-d| \end{cases} \implies$$

$$\left\{ \begin{array}{l} \Delta = 17 \rightarrow d_{1,2} = \frac{-1 \pm \sqrt{17}}{4} \text{ so inecuation solution is } d_{1,2} \in \left(\frac{-1 - \sqrt{17}}{4}; \frac{-1 + \sqrt{17}}{4} \right) \xrightarrow{d \in (0;1)} d \in \left[0; \frac{\sqrt{17}-1}{4} \right) \\ d < 2 \xrightarrow{d \in [0;1]} (A) \end{array} \right.$$

Conclusion: equilibrium is stable $(\forall) d \in \left[0; \frac{\sqrt{17}-1}{4} \right) \left(\frac{\sqrt{17}-1}{4} \approx 0,78 \right)$. More specific, in a differentiated products scenario, the degree of differentiation must be high enough to assure the equilibrium stability (situation reflected by Figure 1, highlited at intersection area of the two isoprofit curves), otherwise we are moving in an instability area, where the adjustment process does not converge to the equilibrium point (see Figure 2).

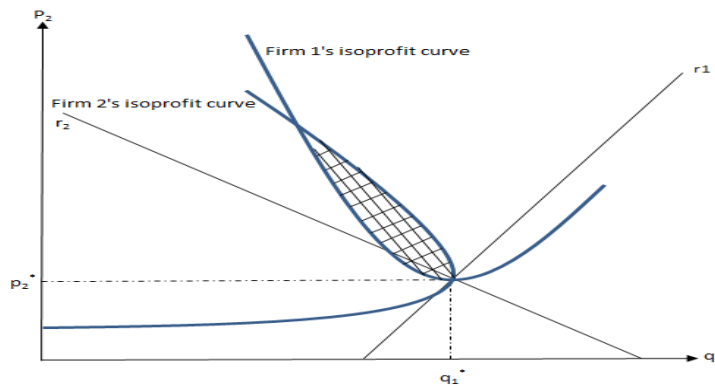


Figure 1: Isoprofit and best – reply functions in the Cournot – Bertrand dupoly
Source: own processing

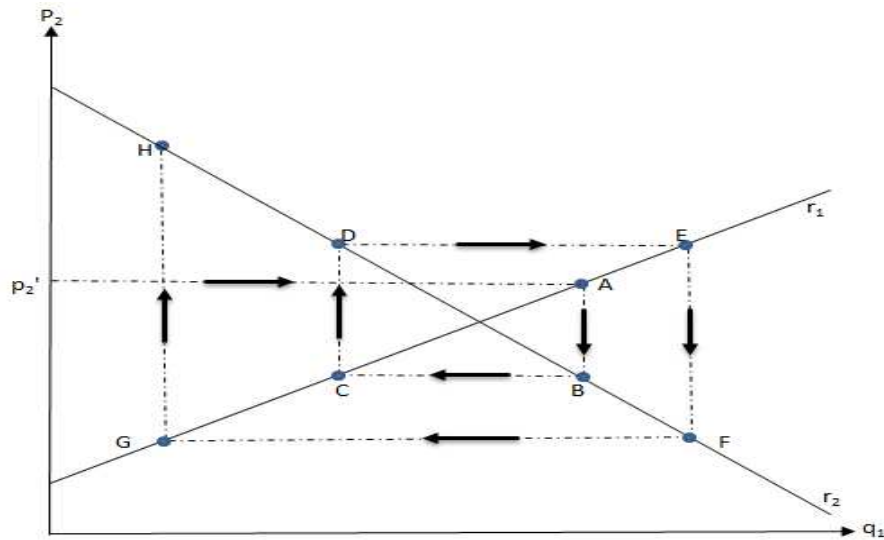


Figure 2: Best – reply functions and equilibrium’s instability in the Cournot – Bertrand model

Source: own processing

In Figure 2, if we start our analyze at a point such as p_2' , his competitor's best reply is to produce at the output level that corresponds to point A. In response to firm 1's producing decision, firm 2 sets price at level B. First player's reaction will be to produce the output reflected in point C, the second will react again via D level price and so on. According to the graphic, can be easily observed that the trend „push” each player's response further away from the best-reply function' intersection point; the equilibrium becomes unstable because the adjustment process prove to be a divergent one (i.e., it moves from A to B, to C, to D, etc.).

We will further analyze the perfectly substitutes products case ($d=1$). Whereas $p_1^* = c, p_2^* = c$, the selling price will be identical for both products, also matching marginal cost. We obtain $q_1^* = a - c, q_2^* = 0$, so firm 1 produces the perfectly competitive level of output, whilst firm 2 leaves the market (produces zero output). However, we can highlight that the perfectly competitive market output level is identical in Cournot-Bertrand and Bertrand models ($q^* = a - c$). Thus, the profit becomes $\pi_1^* = 0, \pi_2^* = 0$, so notwithstanding the output produced by both players, they win nothing in current scenario.

Nash equilibrium can be mathematically expressed by player i scenario of profit maximization, regardless player j behavior, as per below below:

$$\begin{cases} \pi^i(q_i^*, p_j^*) \geq \pi^i(q_i, p_j^*) (\forall) i, j = \overline{1,2} \\ \pi^j(q_i^*, p_j^*) \geq \pi^j(q_i^*, p_j) (\forall) i, j = \overline{1,2} \end{cases}$$

Proposition: $p_1^* = p_2^* = c$ and $q_1^* = a - c, q_2^* = 0$ defines the only Nash equilibrium.

Proof: we consider the general demand system $p_1 = p_1(q_1, p_2), q_2 = q_2(q_1, p_2)$. Demand functions are differentiable, each having negative slopes ($\frac{\Delta p_1}{\Delta q_1} < 0, \frac{\Delta p_2}{\Delta q_2} < 0$), substitutes products scenario being considered ($\frac{\Delta p_1}{\Delta p_2} > 0, \frac{\Delta q_2}{\Delta q_1} < 0$). If $Q_{pc} =$ perfectly competitive output level, we further analyze the following possible situations:

- $q_1 > Q_{pc}$. Considering the negatively sloped demand function, current output level leads to negative profits for first player ($p(q_1 > Q_{pc}) < c$). A better alternative would be leaving the market and earn zero profit.
- $q_1 < Q_{pc}$. Zero output level produced by second player, also negative slope demand function leads to $p(q_1 < Q_{pc}) > c$. This time, second player best response, would be $p_2 = p(q_1 < Q_{pc}) - \varepsilon > c (\varepsilon > 0)$, actual scenario offering the possibility of earning positive profit ($q_2 > 0$) for both firms. On the other side, $p_2 > c$ offer firm's 1 the chance of increasing its production and win extra profit, by supplying the entire demand at p_2 . No residual demand will remain for firm 2, a strong enough incentive to further decrease its price; raising q_1 and lowering p_2 actions will continue until $q_1 = Q_{pc}$ and $p_2 = c$;
- $p_2 < c$. Firm 2 earns negative profit, then will decide to leave the market and obtain zero profit;
- $p_2 > c$. As we have mentioned previously, firm 1's best reply to $p_2 > c$ is to produce all market's requested output at p_2 , such that $q_1 < Q_{pc}$. In return, will become profitable for firm 2 to decrease price level. The process of output increasing and price reducing will continue until $q_1 = Q_{pc}$ and $p_2 = c$.
- $q_1 = Q_{pc}$ and $p_2 = c$. Was already demonstrated that first firm cannot increase its profit in $q_1 \neq Q_{pc}$ case, and neither second one, if $p_2 \neq c$. Any action path players would choose, would lead to not a higher profit level than the one expected from its current strategy, therefore they are not stimulated to modify the quantity/price triggering the unique Nash equilibrium point.

All previous analysis are meant to highlight the dramatic effect that a potential competitor can induce in a market. The mere threat of a price competitor offering a homogeneous product, ensures that a monopolist will adopt a perfectly competitive firm's behavior. Briefly, the potential competitor fully annihilate market power. We further analyze, via graphical representation, the price/quantity/profit sensitivity to the changes in the product differentiation levels (d parameter values) in a Nash equilibrium scenario. Starting from Appendix B tabled values and also customizing parameters a and c (a=90 EUR, c=50 EUR) we gradually increase product homogeneity degree by ratio of 0.05 (from independent products case (d = 0) to homogeneous products scenario (d = 1))

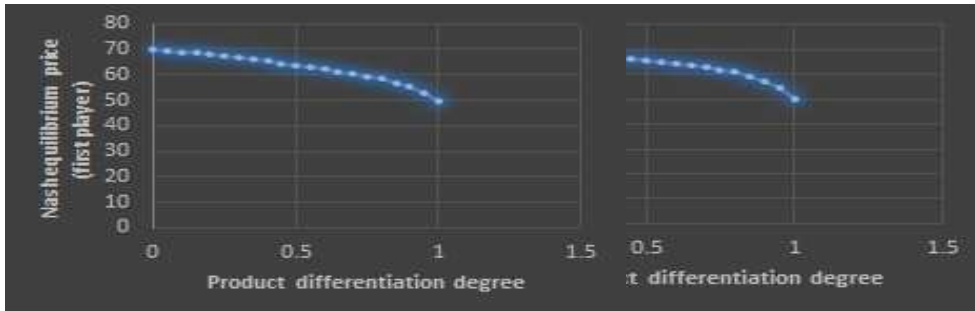


Figure 3: Nash equilibrium price evolution (player i)
price evolution (player j)
Source: own processing

Figure 4: Nash equilibrium price evolution (player j)
price evolution (player i)
Source: own processing

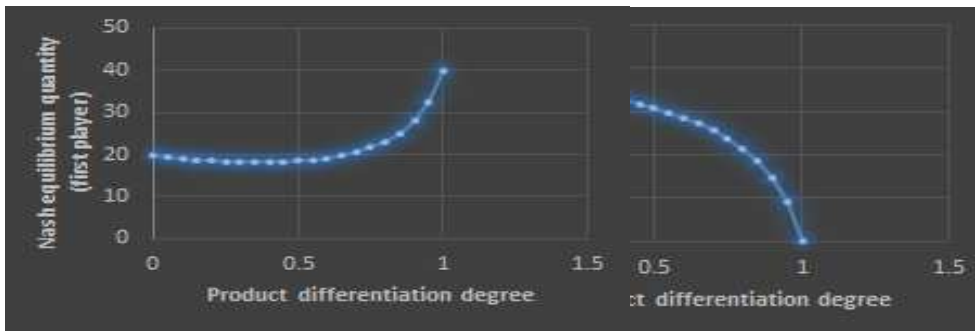


Figure 5: Nash equilibrium quantity evolution (player i)
quantity evolution (player j)
Source: own processing

Figure 6: Nash equilibrium quantity evolution (player j)
quantity evolution (player i)
Source: own processing

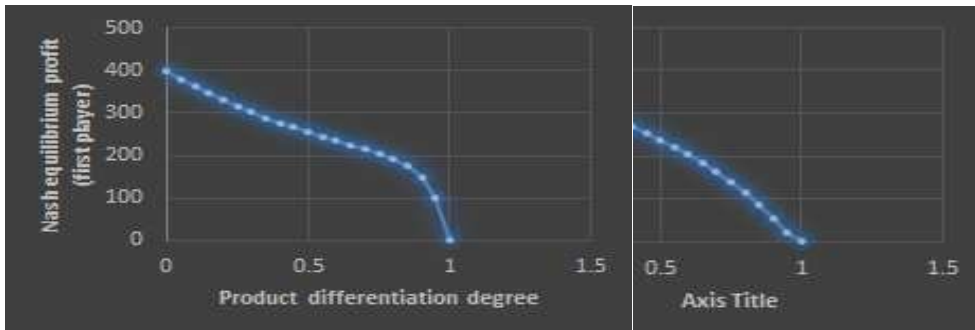


Figure 7: Nash equilibrium profit evolution (player i)
profit evolution (player j)
Source: own processing

Figure 8: Nash equilibrium profit evolution (player j)
profit evolution (player i)
Source: own processing

3. Conclusions

In independent products scenario ($d = 0$), a and c coefficients are identical, following different trendlines as the level of products differentiation decreases, although their sum remains unitary, as $\frac{2-d-2d^2+d^3}{4-3d^2} + \frac{2+d-d^2-d^3}{4-3d^2} = \frac{2-d-d^2}{4-3d^2} + \frac{2+d-2d^2}{4-3d^2} = 1$. As $a > c$, we assist at the gradual price decrease, from a and c average value of 70 EUR, down to marginal cost level of 50 EUR;

As for the quantities triggering the equilibrium scenario, different behaviours can be observed in $(0;1)$ interval. First player level of output will decrease slowly from its 20 EUR initial value (tangible in independent good case), down to 18,16 EUR, as long as the product differentiation degree is not higher than $\frac{6-2\sqrt{6}}{3} \approx 0,37$; once d value passes through $\left[\frac{6-2\sqrt{6}}{3}; 1\right]$ area, the trend will become ascending, triggering the perfectly competitive 40 EUR output level in the absence of product differentiation. The explanation is mathematical as well (Appendix C), highlighting the fact that for $q^{*'} = -\frac{(a-c)(3d^2-12d+4)}{(4-3d^2)^2}$ the unique critical point (minimum point as well) being previously mentioned. Second player will gradually decrease the output level down to zero value, once the product homogeneity level starts to increase, the downward trend maintaining in all $[0;1]$ area.

Profits for equilibrium scenario follow a downward trend each, from $0.25(a-c)^2$ down to zero value in homogeneous products case. One more time, math principles offer the key of this behaviour's understanding, as $\pi_1^{*'} = \frac{-2(a-c)^2(2-d)(4-3d^2)(6d^3-5d^2-4d+4)}{(4-3d^2)^2}$, $\pi_2^{*'} = \frac{-2(a-c)^2(d+2)(1-d)(4-3d^2)(3d^2-4d+4)}{(4-3d^2)^2}$, strictly negative expression reflecting decreasing functions (Appendix D). Furthermore the graphical analysis highlights the decreasing trend of profits, from 400 EUR down to the breakeven point (zero profit).

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Appendix A

$$\begin{aligned}
 p_1 &= a - q_1 - dq_2 \\
 a - q_1 - ad + dp_2 + d^2q_1 \\
 p_2 &= a - q_2 - dq_1 \rightarrow q_2 = a - p_2 - dq_1 \\
 p_1 &= a - ad + dp_2 - (1 - d^2)q_1
 \end{aligned}
 \quad \left| \quad \rightarrow \quad p_1 = a - q_1 - d(a - p_2 - dq_1) =$$

$$\pi_1 = (p_1 - c)q_1 = [a - ad + dp_2 - (1 - d^2)q_1 - c]q_1 = aq_1 - adq_1 - q_1^2 + d^2q_1^2 + dp_2q_1 - cq_1 = q_1^2(d^2 - 1) + q_1(a - ad + dp_2 - c)$$

$$\pi_2 = (p_2 - c)q_2 = ap_2 - p_2^2 - dp_2q_1 - ac + cp_2 + cdq_1 = -p_2^2 + p_2(a - dq_1 + c) - ac + cdq_1$$

$$\begin{cases} \frac{\partial \pi_1}{\partial q_1} = 2q_1(d^2 - 1) + a - ad + dp_2 - c = 0 \\ \frac{\partial \pi_2}{\partial p_2} = -2p_2 + a - dq_1 + c = 0 \end{cases} \rightarrow \begin{cases} p_2 = \frac{c+ad-a}{d} + \frac{2(1-d^2)q_1}{d} \\ p_2 = \frac{a+c}{2} - \frac{dq_1}{2} \end{cases}$$

By substitution:

$$\frac{c + ad - a}{d} + \frac{2(1 - d^2)q_1}{d} = \frac{a + c}{2} - \frac{dq_1}{2} \rightarrow 2c + 2ad - sa + 4(1 - d^2)q_1 = ad + cd - d^2q_1$$

$$(4 - 3d^2)q_1 = -ad + cd = 2a - 2c \rightarrow q_1^* = \frac{-d(a - c) + 2(a - c)}{4 - 3d^2} = \frac{(a - c)(2 - d)}{4 - 3d^2}$$

$$p_2 = \frac{a+c}{2} - \frac{d(a-c)(2-d)}{2(4-3d^2)} = \frac{4a-3ad^2+4c-3cd^2-2a+ad^2+2cd-cd^2}{2(4-3d^2)} = \frac{2(2a+2c-ad^2-2cd^2-ad+cd)}{2(4-3d^2)} \rightarrow p_2^* = \frac{a(2-d-d^2)+c(2+d-2d^2)}{4-3d^2}$$

$$\begin{aligned}
 q_2 &= a - p_2^* - dq_1^* \\
 &= \frac{a(4 - 3d^2) - a(2 - d - d^2) - c(2 + d - 2d^2) - d(2a - ad - 2c + cd)}{4 - 3d^2}
 \end{aligned}$$

$$(4 - 3d^2)q_2 = 4a - 3ad^2 - 2a + ad + ad^2 - 2c - cd + 2cd^2 - 2ad + ad^2 + 2cd - cd^2$$

$$(4 - 3d^2) q_2 = 2a - 2c - ad^2 + cd^2 - ad + cd = 2(a - c) - d(a - c) - d(a - c)$$

$$q_2^* = \frac{(a - c)(2 - d - d^2)}{4 - 3d^2}$$

$$\begin{aligned} p_1 &= a - ad - q_1^*(1 - d^2) + dp_2^* \\ &= a - ad - \frac{(a - c)(2 - d)}{4 - 3d^2} (1 - d^2) \\ &\quad + d \frac{a(2 - d - d^2) + c(2 + d - 2d^2)}{4 - 3d^2} \end{aligned}$$

$$\begin{aligned} (4 - 3d^2) p_1 &= 4a - 3ad^2 - 4ad + 3ad^3 - 2a + ad + 2c - cd + 2ad^2 - ad^3 - 2cd^2 \\ &\quad + cd^3 + 2ad - ad^2 - ad^3 + 2cd + cd^2 - 2cd^3 \\ &= 2a + 2c - 2ad^2 - ad + ad^3 + cd - cd^2 - cd^3 \end{aligned}$$

$$(4 - 3d^2) p_1 = a(2 - d - 2d^2 + d^3) + c(2 + d - d^2 - d^3)$$

$$p_1^* = \frac{a(2 - d - 2d^2 + d^3) + c(2 + d - d^2 - d^3)}{4 - 3d^2}$$

$$\pi_1 = (p_1^* - c)q_1^* = \frac{a(2 - d - 2d^2 + d^3) + c(2 + d - d^2 - d^3)}{4 - 3d^2} \frac{(a - c)(2 - d)}{4 - 3d^2}$$

$$\pi_1 = \frac{(a - c)^2 (d^3 - 2d^2 - d + 2)(2 - d)}{(4 - 3d^2)^2} = \frac{(a - c)^2 [d^2(d - 2) - (d - 2)](2 - d)}{(4 - 3d^2)^2}$$

$$\pi_1^* = \frac{(a - c)^2 (2 - d)^2 (1 - d^2)}{(4 - 3d^2)^2}$$

$$\pi_2 = (p_2^* - c)q_2^* = \frac{a(2 - d - d^2) + c(d^2 + d - 2)}{4 - 3d^2} \frac{(a - c)(2 - d - d^2)}{4 - 3d^2}$$

$$\pi_2 = \frac{(a - c)^2 (-d^2 - d + 2)(2 - d - d^2)}{(4 - 3d^2)^2}$$

$$\pi_2^* = \frac{(a - c)^2 (2 - d - d^2)^2}{(4 - 3d^2)^2}$$

If $d=0$ then $p_1^* = p_2^* = \frac{a+c}{2}$, $q_1^* = q_2^* = \frac{a-c}{2}$ and $\pi_1^* = \pi_2^* = \frac{(a-c)^2}{4}$

If $d=1$ then $p_1^* = p_2^* = c$, $q_1^* = a - c$, $q_2^* = 0$ and $\pi_1^* = \pi_2^* = 0$.

Appendix B

Table 1: Simulation of price, quantity and profit evolution

d	p_1	p_2
0	$0.5*a+0.5*c$	$0.5*a+0.5*c$
0.05	$0.487195*a+0.512805c$	$0.48779*a+0.51221c$
0.1	$0.473804*a+0.526196*c$	$0.476071*a+0.523929*c$
0.15	$0.459854*a+0.540146*c$	$0.464717*a+0.535283*c$
0.2	$0.445361*a+0.554639*c$	$0.453608*a+0.546392*c$
0.25	$0.430328*a+0.569672*c$	$0.442623*a+0.557377*c$
0.3	$0.414745*a+0.585255*c$	$0.431635*a+0.568365*c$
0.35	$0.398589*a+0.601411*c$	$0.420509*a+0.579491*c$
0.4	$0.381818*a+0.618182*c$	$0.409091*a+0.590909*c$
0.45	$0.36437*a+0.63563*c$	$0.3972*a+0.6028*c$
0.5	$0.346154*a+0.653846*c$	$0.384615*a+0.615385*c$
0.55	$0.327041*a+0.672959*c$	$0.371059*a+0.628941*c$
0.6	$0.306849*a+0.693151*c$	$0.356164*a+0.643836*c$
0.65	$0.285316*a+0.714684*c$	$0.339433*a+0.660567*c$
0.7	$0.262055*a+0.737945*c$	$0.320158*a+0.679842*c$
0.75	$0.236486*a+0.763514*c$	$0.297297*a+0.702703*c$
0.8	$0.207692*a+0.792308*c$	$0.269231*a+0.730769*c$
0.85	$0.174147*a+0.825853*c$	$0.233288*a+0.766712*c$
0.9	$0.133121*a+0.866879*c$	$0.184713*a+0.815287*c$
0.95	$0.079207*a+0.920793*c$	$0.11412*a+0.88588*c$
1	c	c

d	q_1	q_2	π_1	π_2
0	$0.5*(a-c)$	$0.5*(a-c)$	$0.25*(a-c)^2$	$0.25*(a-c)^2$
0.05	$0.488416*(a-c)$	$0.48779*(a-c)$	$0.237954*(a-c)^2$	$0.237939*(a-c)^2$
0.1	$0.478589*(a-c)$	$0.476071*(a-c)$	$0.226757*(a-c)^2$	$0.226643*(a-c)^2$
0.15	$0.470439*(a-c)$	$0.464717*(a-c)$	$0.216333*(a-c)^2$	$0.215962*(a-c)^2$
0.2	$0.463918*(a-c)$	$0.453608*(a-c)$	$0.206611*(a-c)^2$	$0.20576*(a-c)^2$
0.25	$0.459016*(a-c)$	$0.442623*(a-c)$	$0.197528*(a-c)^2$	$0.195915*(a-c)^2$
0.3	$0.455764*(a-c)$	$0.431635*(a-c)$	$0.189026*(a-c)^2$	$0.186309*(a-c)^2$
0.35	$0.454233*(a-c)$	$0.420509*(a-c)$	$0.181052*(a-c)^2$	$0.176828*(a-c)^2$
0.4	$0.454545*(a-c)$	$0.409091*(a-c)$	$0.173554*(a-c)^2$	$0.167355*(a-c)^2$
0.45	$0.45689*(a-c)$	$0.3972*(a-c)$	$0.166477*(a-c)^2$	$0.157768*(a-c)^2$
0.5	$0.461538*(a-c)$	$0.384615*(a-c)$	$0.159763*(a-c)^2$	$0.147929*(a-c)^2$
0.55	$0.468876*(a-c)$	$0.371059*(a-c)$	$0.153342*(a-c)^2$	$0.137685*(a-c)^2$
0.6	$0.479452*(a-c)$	$0.356164*(a-c)$	$0.14712*(a-c)^2$	$0.126853*(a-c)^2$
0.65	$0.494053*(a-c)$	$0.339433*(a-c)$	$0.140961*(a-c)^2$	$0.115215*(a-c)^2$
0.7	$0.513834*(a-c)$	$0.320158*(a-c)$	$0.134653*(a-c)^2$	$0.102501*(a-c)^2$
0.75	$0.540541*(a-c)$	$0.297297*(a-c)$	$0.127831*(a-c)^2$	$0.088386*(a-c)^2$
0.8	$0.576923*(a-c)$	$0.269231*(a-c)$	$0.119822*(a-c)^2$	$0.072485*(a-c)^2$
0.85	$0.627558*(a-c)$	$0.233288*(a-c)$	$0.109288*(a-c)^2$	$0.054435*(a-c)^2$
0.9	$0.700637*(a-c)$	$0.184713*(a-c)$	$0.09327*(a-c)^2$	$0.034119*(a-c)^2$
0.95	$0.812379*(a-c)$	$0.11412*(a-c)$	$0.064346*(a-c)^2$	$0.013023*(a-c)^2$
1	a-c	0	0	0

Source: own processing

Appendix C

$$q_1^* = \frac{(a-c)(2-d)}{4-3d^2} \rightarrow q_1^{*'} = \frac{\Delta q_1^*}{\Delta d} = (a-c) \frac{-(4-3d^2) - (2-d)(-6d)}{(4-3d^2)^2}$$

$$= (a-c) \frac{-4+3d^2+12d-6d^2}{(4-3d^2)^2} = -\frac{(a-c)(3d^2-12d+4)}{(4-3d^2)^2}$$

Equation $3d^2 - 12d + 4 = 0$ has $\Delta = 96 \rightarrow d_{1,2} = \frac{6 \pm 2\sqrt{6}}{3}$ then

$$\xrightarrow{d \in (0;1)} \begin{cases} 3d^2 - 12d + 4 > 0 (\forall) d \in [0; \frac{6-2\sqrt{6}}{3}) \\ 3d^2 - 12d + 4 \leq 0 (\forall) d \in [\frac{6-2\sqrt{6}}{3}; 1] \end{cases} \rightarrow \begin{cases} q_1^{*'} < 0 (\forall) d \in [0; \frac{6-2\sqrt{6}}{3}) \\ q_1^{*'} \geq 0 (\forall) d \in [\frac{6-2\sqrt{6}}{3}; 1] \end{cases} \rightarrow$$

$$\begin{cases} q_1^* \downarrow (\forall) d \in [0; \frac{6-2\sqrt{6}}{3}) \\ q_1^* \uparrow (\forall) d \in [\frac{6-2\sqrt{6}}{3}; 1] \end{cases}$$

$$q_2^* = \frac{(a-c)(2-d-d^2)}{4-3d^2} \rightarrow q_2^{*'} = \frac{\Delta q_2^*}{\Delta d}$$

$$= (a-c) \frac{-(1-2d)(4-3d^2) - (2-d-d^2)(-6d)}{(4-3d^2)^2}$$

$$= (a-c) \frac{-4+3d^2-8d+6d^3+12d-6d^2-6d^3}{(4-3d^2)^2}$$

$$= -\frac{(a-c)(3d^2-4d+4)}{(4-3d^2)^2}$$

Equation $3d^2 - 4d + 4 = 0$ has $\Delta < 0 \rightarrow 3d^2 - 4d + 4 > 0 (\forall) d \in [0; 1]$ then $q_2^{*'} < 0 (\forall) d \in [0; 1] \rightarrow q_2^* \downarrow (\forall) d \in [0; 1]$.

Appendix D

$$\begin{aligned}
 \pi_1^* &= \frac{(a-c)^2(2-d)^2(1-d^2)}{(4-3d^2)^2} \rightarrow \pi_1^{*'} = \frac{\Delta\pi_1^*}{\Delta d} \\
 &= (a-c)^2 \frac{[-2(2-d)(1-d^2) + (2-d)^2(-2d)](4-3d^2)^2 - 2(2-d)^2(1-d^2)(4-3d^2)(-6d)}{(4-3d^2)^2} \\
 &= (a-c)^2 \frac{-2(2-d)[(1-d^2) + 2d - d^2](4-3d^2)^2 - 2(2-d)^2(1-d^2)(4-3d^2)(-6d)}{(4-3d^2)^2} \\
 &= (a-c)^2 \frac{-2(2-d)(4-3d^2)[(1+2d-2d^2)(4-3d^2) + (2-d)(1-d^2)(-6d)]}{(4-3d^2)^2} \\
 &= (a-c)^2 \frac{-2(2-d)(4-3d^2)(4+8d-8d^2-3d^2-6d^3+6d^4-12d+12d^3+6d^2-6d^4)}{(4-3d^2)^2} \\
 &= (a-c)^2 \frac{-2(2-d)(4-3d^2)(6d^3-5d^2-4d+4)}{(4-3d^2)^2}
 \end{aligned}$$

If we derivate term $6d^3 - 5d^2 - 4d + 4$, we obtain $18d^2 - 10d - 4 \rightarrow \Delta = 388 \rightarrow$

$$\begin{aligned}
 d_{1,2} &= \frac{5 \pm \sqrt{97}}{18} \\
 \xrightarrow{d \in (0;1)} & \begin{cases} 18d^2 - 10d - 4 < 0 \ (\forall) \ d \in [0; \frac{5 + \sqrt{97}}{18}) \\ 18d^2 - 10d - 4 \geq 0 \ (\forall) \ d \in [\frac{5 + \sqrt{97}}{18}; 1] \end{cases} \\
 & \rightarrow \begin{cases} 6d^3 - 5d^2 - 4d + 4 \downarrow 0 \ (\forall) \ d \in [0; \frac{5 + \sqrt{97}}{18}) \\ 6d^3 - 5d^2 - 4d + 4 \uparrow 0 \ (\forall) \ d \in [\frac{5 + \sqrt{97}}{18}; 1] \end{cases}
 \end{aligned}$$

If we note $f(d) = 6d^3 - 5d^2 - 4d + 4$, we have $f(0) > 0$, $f(\frac{5+\sqrt{97}}{18}) > 0$, $f(1) > 0$, meaning that $6d^3 - 5d^2 - 4d + 4 > 0 \ (\forall) \ d \in [0; 1] \rightarrow \pi_1^{*'} < 0 \ (\forall) \ d \in [0; 1] \rightarrow \pi_1^* \downarrow \ (\forall) \ d \in [0; 1]$

$$\begin{aligned}\pi_2^* &= \frac{(a-c)^2(2-d-d^2)^2}{(4-3d^2)^2} \rightarrow \pi_2^{*'} = \frac{\Delta\pi_2^*}{\Delta d} \\ &= (a-c)^2 \frac{2(2-d-d^2)(-1-2d)(4-3d^2)^2 - 2(2-d-d^2)^2(4-3d^2)(-6d)}{(4-3d^2)^2} \\ &= (a-c)^2 \frac{2(2-d-d^2)(4-3d^2)(-4+3d^2-8d+6d^3+12d-6d^2-6d^3)}{(4-3d^2)^2} \\ &= -(a-c)^2 \frac{2(d+2)(1-d)(4-3d^2)(3d^2-4d+4)}{(4-3d^2)^2}\end{aligned}$$

Equation $3d^2 - 4d + 4 = 0$ has $\Delta < 0 \rightarrow 3d^2 - 4d + 4 > 0 (\forall) d \in [0; 1]$ then $\pi_2^{*'} < 0 (\forall) d \in [0; 1] \rightarrow \pi_2^* \downarrow (\forall) d \in [0; 1]$.

MIGRATION OF LABOR FORCE IN BIHOR COUNTY

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Abstract: *Migration is a global reality that influences multidimensionally the countries, assuming important implications at demographic, economic, social level. Migration is often carried out from countries with significant increases in demographics to those areas that have declined demographics. This population movement has advantages and disadvantages for both countries of origin and destination countries. The multiple faces of this phenomenon have been extensively studied over time at the international level. Although in the past the migration trend was to leave Europe for other areas, such as America and Russia. Nowadays, the number of immigrants arriving in Europe is overwhelming. They are looking for opportunities for career, study and access to health systems that conform to a superior level of economic development. Most people think they will get rid of poverty. The purpose of this article is to illustrate the evolution of labor force migration at the level of Bihor County, both at international and internal level. The international migration at this county level was made in a majority proportion after the fall of the communist regime. The reasons for which most people decided to leave the county and, implicitly, Romania are diverse, but especially the desire to have a better life, characterized by freedom of expression and various benefits. Domestic migration was predominantly made to rural areas. Agriculture being one of the main sectors that sustained subsistence. The wage earning is higher in this sector, a favorable and encouraging aspect for those who have decided to migrate to different areas. County authorities, such as the County Agency for Employment, have encouraged labor mobility to reduce unemployment by awarding various bonuses consisting of money for those who have taken jobs further away from their home town or residence.*

Keywords: *migration; migrants; labor.*

JEL Classification: *F22; F24; Q14.*

1. Migration-conceptual delimitation

Cambridge Business English Dictionary defines migration as "the process of a person or people traveling to a new place or country, usually in order to find work and live there temporarily or permanently" (<https://dictionary.cambridge.org/dictionary/english/migration>). All the definitions attributed to migration converge towards the idea of changing home or residence for an indefinite or limited time.

"The UN Migration Agency (IOM) defines a migrant as any person who moves or has moved across an international border or within a state away from his or her

habitual place of residence, whether movement is voluntary or involuntary, what are the causes of the movement, or what the length of stay is " (United Nations). Considering the area in which the migration takes place, it can be internal, within the same state and international, when the movement of individuals is carried out from one country to another. Migration can also be voluntary when people choose to go for the opportunities offered by the state in which they will settle and force, when governments expel people in the event of military conflicts, in the event of disturbances in the political area and transport forced of the slaves or those who were in detention. The great migration across the Atlantic made from Europe to the American continent is considered to be the largest migration throughout history. It began in 1840 with massive movements from Ireland and Germany. It is estimated that about 37 million people arrived in the United States between 1820-1980. Other massive migrations took place from the European side to Asian Russia during the period 1801-1914, cumulating about 7.5 million people. Also, between the 16th and 19th centuries, the largest migration of slaves occurred through the Europeans who sent about 20 million African slaves to America. Most migrations were associated with famine, violence, property destruction, and increased mortality. During the Second World War, the most expulsive expulsion imposed by Nazi Germany, which deported nearly 10 million people, was recorded. (Encyclopaedia Britannica, 2016) The total population of global migrants was 258 million in 2017, accounting for 3.4% of the world's total earth population, and managed to send remittances worth 466 billion dollars to home countries, which in a large proportion falls within the low or middle income countries. 48.8% of all migrants were female and 14% were children. Comparing these data with those for the year 2000, when 173 million migrants registered, there is a galloping increase of the migration phenomenon (UN DESA, 2018).

2. Advantages and disadvantages of migration

The world economy implies the existence of producers and consumers among whom the same categories of products are traded, with the indication that they are in distinct areas of the world (Florea, 2006). Hence the need to get in the proximity to carry out such transactions, migration is a way to make different exchanges feasible. Ștefănescu FI. (2010) argues that migration is influenced by several factors such as:

- differences in the economic development process of different regions of the world;
- the surplus of labor force in the less developed areas and the need for labor force in economically developed areas;
- to emphasize the role of interdependencies between states that involve the intensification of various exchanges
- changes to the social and political environment at the international level;
- various psychosocial factors such as: the curiosity to discover new cultures and lifestyles, the need for professional achievement, the reunification of families etc.

Migration implies a number of advantages and disadvantages for both the country of origin and the destination country.

For the country of origin we can list the following advantages:

- less pressure on social assistance funds;
- decreases the unemployment rate,
- the remittances sent by those abroad have contributed to the economy of the country they left;

The disadvantages for the country of origin may be as follows:

- leaving specialists for education to whom important funds have been allocated;
- migration of young people, who are the main engine within an economic system;
- decrease in birth rate;
- the impossibility of recovering money invested in the education and training of migrants;
- poor workforce;

For destination countries we can list the following benefits:

- specialists already trained in other countries are enrolled in their territory;
- increases competition on the labor market as salary costs decrease;
- receive young labor force, ready to cope with technological and informational progress;

Disadvantages for destination countries can be:

- the native population feels a severe pressure, perhaps even a threat due to the employment of foreign labor;
- divergences and tensions caused by cultural differences;

3. Migration movement in Bihor County

As stated in the Local Action Plan for Education (PLAI) drafted by the Bihor County School Inspectorate (2018) for the period 2016-2020, a maximum number of 1789 emigrants was recorded in 1991. We consider that this high value of the emigrants registered in Bihor County was caused by the fall of the communist regime in Romania in 1989. A period characterized by important changes at the level of political ideology, restriction of the freedom of expression of personal opinion, certain restrictions on food. Analyzing the data provided by the National Institute of Statistics (2014), during the period 1989-2012, we can see a decrease in the stable population of Romania with over 3.1 million inhabitants. Migration being the main factor that caused the negative growth of the resident stable population to 77%.

Table 1: Situation of population emigration in Bihor County, 1975-2017

Years	Number of emigrants
1975	379
1991	1789
2001	317
2007	714
2009	219

Years	Number of emigrants
2012	423
2013	477
2015	316
2016	918
2017	1127

Source: Bihor County School Inspectorate (2018)

Figure 1 shows that the number of emigrants in Bihor County has been on an upward trend since 2015, reaching 1127 emigrants in 2017. (Bihor County School Inspectorate , 2018). We believe that this accelerated increase in the number of emigrants is caused by multiple factors such as: the minimum wage in the economy considerably lower than in other EU countries, the possibility of having access to a quality medical system, the opportunity to study in abroad through various educational programs.

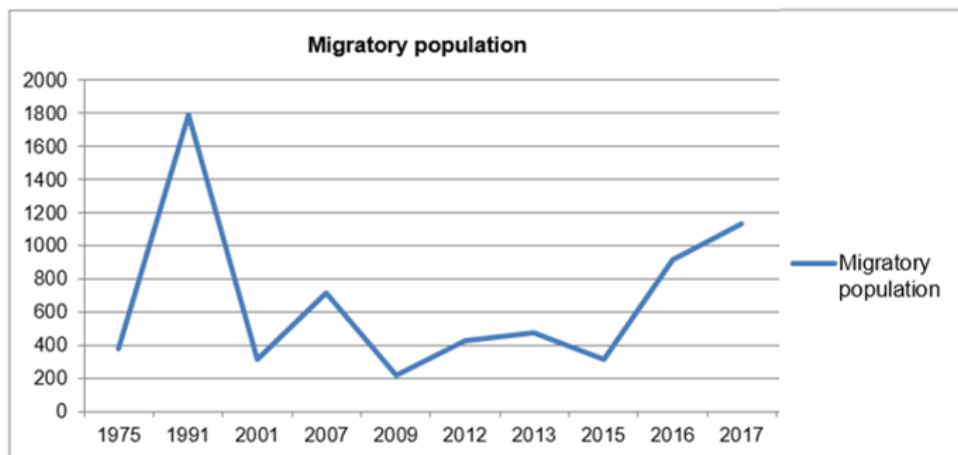


Figure 1: Migratory Population in Bihor County, 1975-2017

Source: Bihor County School Inspectorate (2018)

Between March and June 2018 we conducted a cross-sectional study on the unemployment structure in Bihor County during 2006-2016. We conducted the research at the Bihor County Agency for Employment. The County Agency for Employment (AJOFM) Bihor has its headquarters in Oradea, on Transilvaniei Street, no. 2, under the subordination: Local Agency Oradea, Alesd Work Point, Beiuș Work Point, Marghita Work Point, Point working Salonta. From the data provided by the County Agency for Employment, it appears that in 2017, 609 people were looking for a job in European Union countries, addressing to the agency, by various means, directly, e-mail or by phone. The most sought after destinations for finding a job were: Germany, Great Britain and Denmark. The people in question are graduates of secondary, vocational, high school schools. By focusing especially on jobs in

agriculture, construction, hotel industry etc. While post-graduate and university graduates registered a lower share.

As can be seen in Table 2, the statistics provided by the National Institute of Statistics show that from 2012 to 2015, the number of immigrants from Bihor who have changed their habitual residence follows a downward trend. In 2012, 4796 immigrants from Bihor County changed their habitual residence, unlike in 2015, when there were 3805 immigrants in the same situation. However, there is a gap of 137 migrants between 2015 and 2016, who have changed their habitual residence compared 2015. The number of male who migrated internationally by changing their habitual residence registered in Bihor County was higher than the number of immigrant women throughout the analyzed period.

Table 2: Immigrant flows internationally by gender with change of regular residence in Bihor County

Years	Total	Masculin	Feminin
2012	4796	2676	2120
2013	4403	2414	1989
2014	3898	2017	1881
2015	3805	2098	1707
2016	3939	2261	1678

Source: National Institute of Statistics (2016,2018)

Analyzing the international flows, by gender, with the change of domicile in Bihor county, I noticed that the number of immigrants who changed their domicile has been increasing since 2010, when 130 people were in this situation, among them which 75 men and 55 women. The rising trend has been maintained until 2012. In 2013 there is a relatively strong decrease of the immigrants who have changed their domicile in the county of Bihor, 123 of whom 57 men and 66 women. Starting in 2015, their number is again increased to 132, reaching the value of 152 immigrants who have changed their domicile in Bihor county registered in 2016. The number of immigrant men was higher than the number of immigrant females who had decided to change their domicile was higher during the analyzed period, except for the years 2013 and 2014. National Institute of Statistics (2016,2018).

Table 3: Internal migration caused by home change, by area

Bihor County	Arrive			Leave			The balance of internal migration		
	Years	Total	In urban areas	In rural areas	Total	In urban areas	In rural areas	Total	In urban areas
2007	10472	4113	6359	9545	4635	4910	927	-522	1449
2008	10348	3973	6375	9756	5002	4754	592	-1029	1621
2009	8174	3256	4918	7697	3708	3989	477	-452	929
2010	12071	4658	7413	11260	5646	5614	811	-988	1799
2011	8273	3142	5131	7879	3880	3999	394	-738	1132
2012	9766	3503	6263	9273	4640	4633	493	-1137	1630
2013	8545	3406	5139	8068	3864	4204	477	-458	935

Bihor County	Arrive			Leave			The balance of internal migration		
	Years	Total	In urban areas	In rural areas	Total	In urban areas	In rural areas	Total	In urban areas
2014	9366	3669	5697	8797	4322	4475	569	-653	1222
2015	9285	3613	5672	9070	4344	4726	215	-731	946
2016	10088	3803	6285	9690	4714	4976	398	-911	1309
2017	9823	3800	6023	9247	4495	4752	576	-695	1271

Source: Bihor County Department of Statistics (2010)

By performing a comparative analysis of the data outlined in Table 3, we note that at Bihor County the number of those who arrived in rural areas was higher than those arriving in the urban environment throughout the analyzed period. In 2010 there were 12071 persons arriving in this county, of which 4658 in urban and 7413 in rural areas (Bihor County Department of Statistics , 2018).

We believe that the overwhelming proportion of those who decide to move to the rural areas of Bihor County is due to the increase in labor productivity in the agriculture sector. The volume of turnover in agriculture registered an upward slope of approximately 78% during the period 2008-2012. "The gross average earnings in January 2018 was 3358 lei/person per total, and by activities:

- agriculture, forestry, fish farming - 3479 lei
- industry and construction -3193 lei
- services – 3505 lei

Net average earning in January 2018 was of 2009 lei/person per total, and by activities:

- agriculture, forestry, fish farming - 2067 lei
- industry and construction -1923 lei
- services - 2087 lei" (Bihor County School Inspectorate , 2018, p. 35)

Following the statistics provided by Bihor County Department of Statistics, we can see that there have been years like 2008, 2010 and 2012 when the number of those who left Bihor County in the urban area was slightly increased compared to the number of those who decided to move home or reside in rural areas. This may be due to increased opportunities to find a job in the urban environment due to the strong growth of industry in the major cities of the country. However, in recent years, the trend is to move to rural areas, where they have the opportunity to fit more easily into the agriculture, forestry or fish farming sectors, in order to obtain more consistent incomes.

In 2017, the County Agency for Employment applied measures to stimulate labor mobility by awarding a non-taxable employment bonus to registered unemployed who have taken up employment more than 15 km away from their domicile or residence who had before. While people who have taken up a job more than 50km away from their home or residence and have settled in the locality where they obtained their job, installation premium, non-taxable. This aid is intended to stimulate the workforce in order to improve mobility, to ensure payment of initial expenses at the new location where they have established their domicile or residence. Those

persons who have acquired a job more than 50 km from their place of residence or residence, while changing their domicile or residence which they have been granted a non-taxable relocation premium of the unemployment insurance budget equal to 75% of the total cost of living in the new location established as home or residence, but not more than 900 lei (County Agency for Employment, Bihor)

4. In conclusion

Since ancient times, migration has taken place in its various forms, with advantages and disadvantage for both countries of origin and destination countries. That is why different categories of specialists investigate the changes that migration generates at a socio-economic, demographic level.

International migration in Bihor County has been overwhelmingly since the fall of the communist regime. The desire to have a better life was the main impetus for leaving the country after that long period characterized by restrictions, censorship, precarious medical systems and so on. Internal migration in the same county was made predominantly to rural areas. The arrived people sought jobs in the agriculture, forestry and fish farming sectors, which expanded at a high rate, providing them with a higher salary gain than in other sectors, and those who went to other counties have oscillated between urban and rural areas. This phenomenon of internal migration, characterized by a good labor force movement, has been encouraged through various programs implemented by the County Labor Office, Bihor, through the various incentives offered to persons willing to change their domicile or residence for a place new work.

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THE ECONOMIC EFFICIENCY FOR A SUPER-INTENSIVE IRRIGATED BLUEBERRY CULTURE

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Abstract: *Fruit growing is one of the main horticultural branches and deals with the research, study and knowledge of the organic and ecological peculiarities of the fruit species, aiming to establish appropriate technological measures in order to obtain high, constant and high quality crops. Fruit tree culture is important from the economical and social point of view. The tree culture is the main source of the existence, significant part of the population of the country is working directly in the plantations of trees, in the fruit-processing industry, in the fruit trade, in the transport enterprises and in the machinery industries, insecticides, packs, etc. Fruit plantations represent an investment with long lifetime exploitation, so mistakes in setting up are not acceptable, as they are practicable and are spread over the entire exploitation period. In Romania, horticulture continues to hold a particularly important status, although it goes through one deep process of property restructuring and exploitation system. The performance of the horticultural sector has been low. Lack of competitiveness is reflected by low productivity, low economic growth and a balance deficit agro-food trade, given that agriculture and horticulture are failing to keep the step with the increasing demand for food, driven by rapid general economic growth, and unable to cope with foreign competition, especially in the European Union. This paper is intended to be a technical (theoretical and practical) basis on establishment and maintenance of the species studied (blueberry), including economic efficiency as well as special references to the studies carried in Bihor County, both results and concrete references on how to set up and maintain plantations, under the climatic conditions in Bihor County area, as well as calculation the economic efficiency of these in the following years until harvest. It can be a starting point for preparing young people to better understand the principles of super-intensive culture systems and their economic significance and efficiency.*

Keywords: *harvest; economic efficiency; fruit productivity; super-intensive culture system; horticulture.*

JEL Classification: Q19.

1. Introduction

From a geomorphologic point of view, the studies were carried out in the part of the Northern group of the Western Carpathians. The research area belongs to the Bihor Mountains group, more precisely the Crișul Negru Depression. The dominant reliefs

in the area are piedmont hills. The studied area is in the climatic formula after Koppen C.f.b.x. - moderate continental temperate climate with warm summers and relatively mild winters, with precipitations spread throughout the year.

From the vegetation point of view, the studied perimeter falls within the area of quercinee and deciduous forests. The forests in the area are made up of the following species: *Quercus robur*, *Fagus silvatica*, *Carpenus betulus*, *Fraxinus excelsior*, *Acer campestre*, etc. Natural grass vegetation is represented by *Cynodon dactylon*, *Lotus corniculatus*, *Trifolium sp.*, etc. The natural vegetation of the crop (weeds) is represented by *Setaria glauca*, *Setaria viridis*, *Agropyron repens*, *Amaranthus retroflexus*. Under conditions of relief, climate, vegetation, the soil type encountered in the studied territory is *districambosol*.

1.1. Land organization and arrangement

The land organization and arrangement is aimed at ensuring the conditions of mechanization (Venig A., 2006), fast transportation and the possibility of applying a high and simple technological level, mainly: land partitioning, establishing the network of roads and return areas. (Santerre A., 2018) The area actually planted is 10,000 square meters. There are used 3 blueberry varieties. The planting distances are 1m on the row and 2,5m between the rows. The plantation was set up in 2012 and is super-intensive.

1.2. Assortment and need for planting material

Blueberry is a bushy species with a strong dynamics in recent years (Charles B., 2014), growing more and more in many countries, due to the high demand on the market that is growing in Europe. Blueberry is well suited both in plains, but especially in hill and mountain areas, being a rustic species resistant to strong winter frosts and foliar diseases with fewer pathogens than other more sensitive species. (Botez et al, 1984).

In a correct crop technology and optimal soil conditions, blueberry plantation can produce over 7-8 tons of fruit per hectare, the price of capitalization being very good. (Braniste, 2009).

For the research, it was used Bluecrop variety, with a medium growth rate, green leaves that change to red on red stems in the fall provide ornamental appeal through the winter. (Reich L., 2009). Most importantly, the firm, medium-sized light blue fruit is known for its excellent flavor, and berries are resistant to cracking. (Chira L., 2003). This type prefers organically rich soil, with constant moisture and good drainage (Gough E.R., 1991). Known for its disease resistance, Bluecrop is drought tolerant when mature. This variety is known for having shallow roots. (Gosch T., 2014)

2. Material and method

The used material is one hectare Bluecrop blueberry variety, in a super-intensive system (4000 bushes/ hectare), with support system, anti-hail net, drip irrigation system. The used method is the economic calculation over the financial result, obtained from this plantation.

The costs from the first two years are shown in the following tables. In the third year of culture, there are registered the first incomes.

Based on the technological culture sheet, in every year are registered the following direct costs: workmanship, machinery, materials, transport.

Table 1. Entire direct expenses, establishment and maintenance in the 1st year

Specification	Cap.I Workmanship	Cap.II Machinery	Cap.III Materials	Cap.IV Transport	Entire direct expenses
For one hectare	11245,0 Ron	2256,0 Ron	47234,2 Ron	456,33 Ron	61191,53 Ron

Source: obtained from own calculations

Table 2. Entire direct expenses, establishment and maintenance in the 2nd year

Specification	Cap.I Workmanship	Cap.II Machinery	Cap.III Materials	Cap.IV Transport	Entire direct expenses
For one hectare	4753.0 Ron	360.0 Ron	2817.6 Ron	16.3 Ron	7946.9 Ron

Source: obtained from own calculations

Table 3. Entire direct expenses, maintenance in the 3rd year and exploitation

Specification	Cap.I Workmanship	Cap.II Machinery	Cap.III Materials	Cap.IV Transport	Entire direct expenses
For one hectare	44376 Ron	360.0 Ron	2576.0 Ron	200.1 Ron	47512.1 Ron

Source: obtained from own calculations

From the obtained results, from establishing the plantation until the first harvest, there can be made the following economic analysis:

Df= 27 years

De= 25 years

It (Entire investment) = 69138,43 Ron

Setting up expenses= 61191,53 Ron

- Handmade works= 11245,0 Ron
- Mechanical works= 2256,0 Ron
- Materials = 47234,2 Ron
- Transport= 456,33 Ron

Maintenance costs= 7946,9 Ron

- Handmade works= 4753,0 Ron
- Mechanical works= 360,0 Ron
- Materials = 2817,6 Ron
- Transport = 16,3 Ron

Ca (annual amortization rate)= 2765,5 Ron/ year

Ce (annual operating costs)= 47512,1 Ron

- Handmade works= 44376,0 Ron
- Mechanical works = 360,0 Ron

- Materials= 2576,0 Ron
 - Transport = 200,1 Ron
- Cd(annual direct costs)= 50277,6 Ron/ year
Ci (annual indirect costs)= Cd x 6%= 3016,6 Ron/ year
Ct (Annual entire costs) = 53294,2 Ron/ year
P (Production) = 7000 kg/ ha
Cp (Cost of production) = 7,6 Ron/kg
Pv(Selling price) = 10 Ron/kg
V (Value of annual production) = 70000 Ron/ year
Pab (Gross annual profit)= 16705,8 Ron/ year
I (Tax) = 2672,9 Ron
Pn (Net annual profit) = 14032,9 Ron/ year
R (Annual profit rate)= 26,3 %
T (Term of investment recovery) = 5 years
Pt (Entire operating profit)= 350822,5 Ron
Rec (Economic return on investment)= 500%.

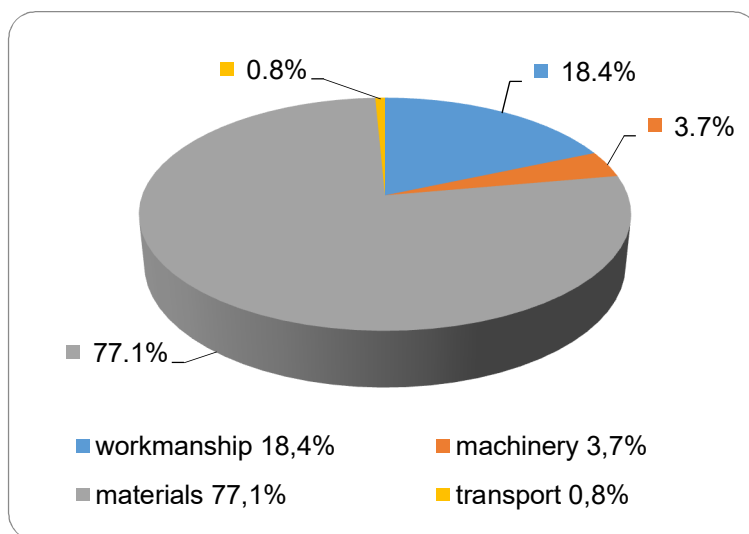


Figure 1: Chart of entire direct expenses, establishment and maintenance in the 1st year

Source: obtained from own calculations

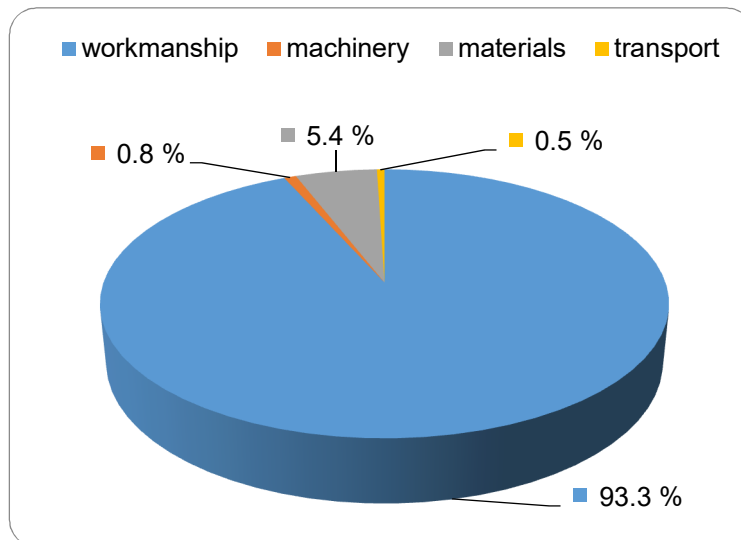


Figure 2: Chart of entire direct expenses, maintenance in the 3rd year and exploitation

Source: obtained from own calculations

3. Results and discussion

Analyzing the obtained results, the total investment value is 69138,43 Ron. The annual operating expenses are 47512,1 Ron, the annual entire costs are 53294,2 Ron.

At a production of 7000 kg/ ha, sold at a price of 10 Ron/kg, it is obtained a value of annual production of 70000 Ron/ year.

The financial results of this culture for one year is 16705,8 Ron (gross profit/ year). Related to the obtained net annual profit and the entire operating profit, it is obtained and economic return on investment of 500%.

5. In conclusion

The value of the entire investment from establishing until the first harvest of a blueberry plantation can be recovered in five years of harvest.

The highest costs with the materials are registered in the first year, at the establishing, due to the materials value (bushes price).

The highest costs with workmanship for harvesting are registered in the 3rd year from planting, when the harvest takes place.

Direct costs could be lower when there is registered a large amount of precipitation and irrigation is no more used.

The return on investment is 500%, that means culture is profitable, brings high income in short time.

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SECTION: *FINANCE, BANKING, ACCOUNTING AND AUDIT*

SERVICE QUALITY AND CUSTOMER SATISFATCTION IN CEC BANK

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Abstract: *Adopting the concept of marketing, as a basis for all the strategic and tactical decisions that are adopted in the management process and in the existence of the banking institution, would involve taking into account four elements: 1). Satisfaction of customer wishes. This is a vital aspect of the marketing concept without which the bank's financial objectives could not be met. 2). Return. Customer satisfaction cannot be achieved at any cost, and there must be a balance between customer satisfaction and earnings gains. 3). Employee involvement. All employees need to understand the importance of marketing and work in the spirit of the marketing concept. This can be done by meeting the needs of employees, and they need to become aware of the importance of cost control and maximization of revenue. 4). Social responsibility. The bank must be aware and sensitive to the community and the environment in which it operates. The banking institution has an extremely important role in society and, consequently, must have a responsible behaviour.*

Keywords: *Performance; satisfaction; quality; SERVQUAL; GAP.*

JEL Classification: *G21; M31.*

1. Introduction

The Bank has a flexible organizational and functional structure that allows it to be continually adapted to the ongoing financial needs of customers. It successfully meets the client's financial needs, namely:

- identifies new customer needs;
- remodeling products / services;
- creates new products / services;
- launches on the market the products and services required.

The importance of banking marketing activity lies precisely in the relationships that banks establish with their clients and their loyalty.

2. The importance of marketing for banking services

In order to establish and develop long-term marketing relationships with consumers, financial institutions develop services and delivery arrangements in such a way as to provide efficient and affordable services to consumers, while maintaining quality standards.

Marketing is important in ensuring the growth, development, dissemination, diversification or even survival of banking products and services and, implicitly,

banks and service providers. This process involves combining the efforts of marketing specialists, human resources, and organization management. The need to establish such relationships is due to the wishes of consumers, staff and the social and economic environment in a continuous change. Consumers, natural or legal, are in constant search for products and services, as good as possible with financial institutions, and at the same time of the best possible service quality. Companies realize that investing in long-term marketing relationships with customers is not an expense, but a long-term profit.

3. The analysis of satisfaction on banking services offered by CEC BANK

The SERVQUAL method was developed by Parasuraman, Zeithaml and Barry in 1994-1995 based on the GAPS model of service quality.

SERVQUAL is a tool used to measure service quality, used to diagnose weaknesses and strengths for companies operating in the service industry. This tool is based on five dimensions of service quality: tangibility, trust, solicitude, safety and empathy. As a result of the experiments carried out, the three specialists concluded that the quality of a service influences many determinants.

In the original version, the authors identified 10 dimensions of service quality subsequently grouped on the basis of results from other experiments in five categories:

- Tangible elements (tangibles)
- Reliability
- Responsiveness
- Assurance
- Empathy (empathy)

For each dimension, the SERVQUAL authors have asked questions for the client by specifying his expectations from the requested service and the perceptions he has as a result of obtaining the service. In total, SERVQUAL comprises 22 questions that are tailored to the nature of the service being evaluated. Depending on the type of service evaluated and the experience of evaluators in the field covered by the service, the weights may have different values.

The SERVQUAL model was the first method developed and applied to the quality assessment services and has been the subject of a very large number of experiments reported in specialized publications.

It should be emphasized that all other methods have been developed starting from the conceptual SERVQUAL architecture.

Analyzing the average score of 5.8055 and expectations of 5.18 it can be seen that all five indicators obtained a score between 5.46 and 6.18 at perceptions and 4.82 and 5.90 to expectations, from which it can be deduced that the company has a higher level of quality of its services, as perceived by the executives questioned before and after they became customers of the CEC Bank.

It can be deduced that the company corresponds to the perceptions of its customers.

Table 1. Average score for SERVQUAL Dimensions

Tangibles			0,4
1. The bank owns modern design equipment	6,12	5,56	0,56
2. The bank is arranged in a welcoming way	6,00	5,68	0,32
3. Employees of the bank have a neat look	6,18	5,90	0,28
4. Promotional materials associated with the bank are attractive	5,46	5,02	0,44
Reliability			0,612
5. When the bank promises to do something in a certain time, it will do to solve it.	5,62	5,06	0,56
6. If a client has a problem, the bank has a sincere concern	5,86	4,94	0,92
7. The bank performs the requested service promptly	5,46	5,14	0,32
8. The bank provides the service at the promised time	5,74	5,04	0,7
9. The Bank works with maximum accuracy	5,6	5,04	0,56
Responsivness			0,705
10. Employees of the bank accurately inform customers of when the services will be performed.	5,96	4,94	1,02
11. Bank employees offer prompt customer service.	5,78	5,16	0,62
12. Employees of the bank are always willing to help customers.	6,14	5,56	0,58
13. Employees of the bank are never too busy to respond to customer requests.	5,88	5,28	0,6
Assurance			0,68
14. The behavior of bank employees inspires confidence in customers	5,76	5,30	0,46
15. Bank customers will feel secure in transactions	5,68	4,96	0,72
16. Employees of the bank are courteous to customers in any situation	5,88	5,44	0,44
17. Employees of the bank have the necessary knowledge to answer customer questions	5,92	4,82	1,1
Empathy			0,712
18. The Bank has the ability to offer individual customer support.	5,78	4,98	0,8
19. The Bank has a convenient program for all categories of clients.	5,94	5,14	0,8
20. The Bank through its employees gives special attention to each client.	5,58	5,04	0,54
21. The customer's interests are at the heart of the bank's attention.	5,76	5,00	0,76
22. Employees of the bank understand the specific needs of their clients.	5,62	4,96	0,66

Source: Processed by authors

By analysing the column of perceptions, the highest score was obtained in the well-groomed view of the employees, namely 1. The bank's employees have a neat look (6,18), followed by 12. Bank employees are always willing to help customers (6.14) within their receptivity, 1. The bank owns modern design equipment (6.12) within the same indicator. At the end of the list we find the lowest 3 points, namely 9. The Bank

works with the highest accuracy (5.6), also in the context of confidence, the Bank performs the requested service (5.46), within the trust, also within the trust, and 22. Employees of the bank understand the specific needs of their clients (5.2 - Empathy). As an average of perceptions on the indicators, the highest value is found on the visual image and the receptivity - 5.94, while the lowest average is found in the confidence - 5.65.

By studying the expectation column, the highest value is found in the visual image, namely 3. Bank employees have a neat look (5.90) followed by 1. The bank owns modern design equipment (5.56), also in the visual image frame, and 2. The bank is arranged in a welcoming way (5.62) within the visual image. The smallest values of the perceptions scores are found in 17. The bank's employees have the necessary knowledge to answer the questions of the clients (4.82), within the security, followed by 10. The bank's employees precisely inform the clients about the moment when the services offered will be performed (4.94 - responsiveness) and 6. If a client has a problem, the bank shows a sincere concern to resolve it (trust) with the same score of 4.94. As the average of CEC Bank's clients' expectations, the highest value is within the safety - 5.54, and the lowest in the empathy - 5.024.

GAP analysis succeeds in highlighting different aspects of society's services, a positive GAP is a favorable aspect of the analyzed society, as it can be inferred that there are more perceptions regarding the services offered by society than what is wait for it. Examining the data obtained from the applied questionnaires, it can be noticed that CECs are also presenting positive GAPs within: most of the values obtained have positive values, favorable for the firm, good sign for the firm

As an average of GAPs, it is noticed that the lowest value is found on the visual image indicator with a value of 0.4, followed by the rest of the indicators, which show positive and growing values.

As a result of the analysis of the sample, it is noticed that the main dimension is the security offered by the customer bank in 60%, followed by 24% confidence, the receptivity and empathy and the visual impression representing only a total of 16% of the total number of people questioned.

Table 2. The importance given to each dimension

Features	Percentage
1. Tangibles	12%
2. Reliability	44%
3. Responsiveness	16%
4. Assurance	20%
5. Empathy	8%

Source: Processed by authors

We can notice that the tangibles of the bank has a particular importance as a result of weighting GAPs, as it depends very much on the aspect of each employee and the environment in which the client meets the staff of the bank.

4. Conclusion

Most of the respondents are between the ages of 18 and 25, accounting for 34% of the sample, most of whom work in the private sector and have monthly incomes between 800-1800 lei.

Most people 50% are advised with the family before calling the bank, and only 18% resort to the advice of a specialist, 2% are searching for the market.

CEC Bank is considered by its clients as a bank that understands the needs of the clients, but the highest score is found on the modern design of the bank and the promotional materials.

After analysing the questionnaires, we can deduce that the most used bank products are individual accounts, student, salary or pensions with 52%, followed by credit cards, with a percentage of 30%.

CEC Bank has problems regarding customer confidence, namely that the bank would perform the requested service promptly, even if there is not a significant difference between the expectations and perceptions of the clients, but the bank should take steps to strengthen the trust of the clients.

Security in the bank's transactions is an efficient one, and it is obvious that here too improvements could be made through better data protection for its customers.

If we take into account the environments on each dimension, it is still noticed that empathy is the strength of the bank.

At the same time, the questioned clients voiced their dissatisfaction with the Bank's work program.

The analysis of the GAP can highlight a multitude of aspects of the services offered by CEC Bank. A negative GAP highlights the unfavorable aspects of the bank's services and alerts the company. A positive GAP is a favorable aspect for the bank.

Thus, as a result of the analysis of the questionnaires, all the GAPs of the bank are positive, which is a favorable aspect for the bank. However, a higher GAP value shows the size that best suits and even exceeds customer expectations, namely empathy first, followed by receptivity. The smallest GAP is found in the visual image. We propose to the bank to take action with regard to GAPs, by improving and improving employees, and if necessary to hire new people so that they can accurately inform customers about when the service offered by the bank, to provide the services immediately and to pay more attention to each client.

CEC Bank should focus on promoting in rural areas, as this could increase the bank's level both in lending and in the provision of deposits. Also, a very effective promotion is the one from the online environment, as many of the respondents are studying the market themselves before reaching the bank, which is why it should put more emphasis on this segment of customers and develop online marketing policy.

Another recommendation for the bank would be the extension of the work program, even if all these would generate costs for the bank.

The study can be improved because it was done on a rather limited sample (390 respondents), a limited period of time, a lack of comparison with the results that could have been obtained for other banks, which could actually it surprises in a much wider way the level of the quality of the services offered on the banking market.

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AN INNOVATIVE PERSPECTIVE ON FINANCIAL DECISION-MAKING

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Abstract: *This paper presents a multidisciplinary research that brings together areas such as finance, behavioral economics, fractal theory and management. Each of them presents a specific methodology for quantifying and measuring the analyzed phenomena. The present paper uses the multidisciplinary approach to the results of applying specific methods in areas such as psychology or exact sciences in the field of managerial finance, areas that apparently have nothing to do with each other. The results obtained from this approach highlight new knowledge, approached from a different perspective. The development of managerial finance science, a field of high interest at the moment at the level of companies, is at the heart of its financial decision-making. The paper analyzes the financing decision of enterprises both from the perspective of listed companies on the capital market as well as of the non-listed companies, and the scientific relevance of this research lies in the various conceptual clarifications presented. The degree of novelty brought by this research is supported by the innovative approach of the financing decision by addressing some elements of fractal theory, behavioral finance and managerial finances. At the same time, the paper highlights the theoretical and practical aspects of innovations in financial decision making. The impact of research results lies in the ability of the models approached to be used by any manager of a company in taking a financing decision in the context of efficient and innovative quantification of risks and performance. The risk associated with a particular form of financing is analyzed and quantified according to the specificity of the selected form of financing. This paper analyzes the defining characteristics of the risks associated with the financing decision taken by the managers of projects inside companies, taking into account the objective characteristics but also the subjective ones. This paper analyzes the innovative elements brought by the modern theories like behavioral finance, game theory, mechanism design-theory, managerial finance and others that have an impact on the financial decision process both at the enterprise level and from the perspective of the decision-making subject.*

Keywords: *behavioral finance; expected value; fractals; project financing; decision model.*

JEL Classification: *G41; G32.*

1. Introduction

Financial science has undergone structural change along its crystallization process. In the classical vision economy was "driven" by an abstract force, the "invisible hand" as Adam Smith stated in his *Wealth of Nations* (1776) which was intended to "distribute limited resources to unlimited needs." Evolution of scientific research has

highlighted the fact that economy can become a battlefield in which various players share their resources. This latter view of the economy offers a much more realistic and humane picture in contrast to the traditional one. Today the economy is viewed both at macro and micro levels up to the individual one that of the economic agent whose role as "player" is defined by the effects of its decisions on the other "players". Current state of knowledge in the field of financial decision-making should begin on the origins, where the classical finances are characterized by the premises of strict rationality in the decision-making process. Over time, emergence of modern finances has been closely linked to the shift in research focus on factors such as human perception and personal expectations of the individual involved in financial decision. These elements, once taken into account, reveal the unpredictable nature of human nature and therefore of the effects resulting from the financial decisions taken by the individuals.

Modern finances analyze and define concepts such as uncertainty, coming from this subjective nature, in economic transactions and the associated risk. Subjective elements in defining risk come from the human perception of decision maker. The expected value, that is the one estimated by the subject prior to any financial decision and the market value of any financial decision taken is almost the same according to classical financial theory and this financial equilibrium situation describes the characteristics of the efficient financial market. Identifying the difference in the economic market between the market price and the "expected" value is the subject of modern finance research.

Why is this difference between the market price and the intrinsic value of a financial asset? Trying to find the right answer, this paper analyzes numerous theories and studies in order to find a suitable model in this regard. In order to accomplish this goal, this paper presents how the subjects of financial decisions integrate risk in achieving the "expected" return as high as possible. Utility is another concept used in economics to characterize human decision making. This is a trigger for the financial decision. The notion of "expected utility" thus captures the subjective factor of the financial decision. The existence of value differences between the various decision alternatives is in fact the "stimulus" triggering the decision-making mechanism at the level of the economic agent. That alternative that gives the decision maker the "expected marginal utility" is preferred by "homo oeconomicus." The fundamental hypothesis of classical finance is that of "homo oeconomicus", characterized by rational behavior, oriented to maximizing its usefulness. People make decisions depending on the context and on the basis of marginal values perceived by the subject by comparison (Tversky A. & Kahneman D., 1974). Differences in value perceived at the psychological level cause people to act. Value is not mobilizing unless it produces satisfaction for the subject (McFadden, 2000). These premises described above characterize the notion of economic value or profitability as it is used in economic theory.

Modern financial theories like portfolio theory developed by Markowitz (1952) are built on models for estimating the cost of capital (Sharpe 1964, Jensen & Meckling, 1976; Fama & French, 1993; Estrada 2000), agency theory, mechanism design theory, prospects theory or game theory bring into question factors that affect human decision-making. This paper analyzes the innovative elements brought into question

by the modern theories which have an impact on the financial decision process both at the level of an enterprise and from the perspective of the decision-making subject.

2. Research methodology

This paper's research objectives refer to identification of those characteristics which are specific to decisional mechanism by analyzing the subjective factors, human factors of the subject involved in a profitable and risk - bearing activity, as well as of the objective ones. This research relevance lies in analyzing the relevant factors to the financial decision making mechanism in projects managed by enterprises bearing risk and uncertainty. Individual's decisions shape and structure current economy. It is impossible to separate the notion of "decision" from "economy" from the objective of understanding risk phenomenon accompanying decisions taken at both individual and project or organizational level. In another sense, investors or decision - makers in the economy are primarily humans and risks that are related to financial decisions are due to their unpredictable nature and will be analyzed during this work.

Research methodology used is direct observation and critical thinking and reasoning made to reveal similar or different aspects of the studied notions, as well as describing dominant characteristics with an impact on the research topic addressed. Economic analysis can be split into positive and normative analysis, depending on the purpose and method used. The first type of analysis refers to studying economic phenomena to discover the functioning of mechanisms and processes, to describe phenomena and to reveal new meanings. The second form of analysis relates to the use of the first method to substantiate the results or conclusions of value judgment on certain directions to be followed. The research method used refers to the use of positive analysis to understand and explain economic phenomena by presenting possible alternatives and assessing the advantages and costs involved in various alternatives implied by financial decision-making.

3. The issue of optimal allocation of resources in financial theory

3.1. In search of an epistemological reference model used in research

The attempt to find the perfect model that can accurately predict "who, what, and how" is an attempt that failed, at its beginnings. The studies made so far on the subject showed that models will predict the future in a more "predictable" way than the analyzed phenomena does in reality. Until now, no expert has been able to predict exactly what will happen in the medium and long term. In the short term, however, it is viable to use economic models to make predictions. Why? The aim of this paper is to reveal the optimal model that is able to take into account the degree of uncertainty specific to the real world and thus contribute to the clarification of the analyzed aspects, offering alternative solutions to the studied issues.

Financial theory is in a constant search for models from which society can benefit for a better life adapted to the new environmental challenges. Methods and technologies are sought to enhance the quality standards of human life both in urban and rural areas. The classical theory of economy uses notions such as the market with perfect

competition as a theoretical model, as well as the particular case of imperfect competition through monopoly or oligopoly (Romer, 1996). The market, in the classical view, appears at a macroeconomic level as being made up of similar economic actors, without taking into account their individual characteristics. The microeconomic approach views the individual behavior of an economic actor on the market in terms of transactions with other economic actors, but without taking into account their individual characteristics or mandate or representation relations between them (Samuels et al., 2003).

Analysis of the balance between supply and demand was the primary focus of economic research over the centuries. It starts with the analysis of the market equilibrium mechanism through price which is still the subject of the macroeconomic analysis and goes beyond the analysis of the agents' behavior allocation on limited resources to the level of the individual as a functional morphological unit of demand and supply. Economic research focuses on the analysis of human behavior and, in particular, how people make decisions in response to environmental stimuli. We recall in this sense the pioneering efforts of Herbert Simon (1978) in analyzing the decisional behavior of individuals at the level of an economic organization. Hayek (1945) is one of the first scientists to demonstrate the primary role of information in the decision-making process to optimally allocate public financial resources to private enterprises. It was therefore justified to develop a new model for resource allocation in an economy where price mechanism is not an effective allocation tool just by the means of using information taken from the actors of the market but who are willing to make it public with the right incentives. An alternative to the "invisible hand" of the classical economic model developed by Adam Smith (Smith, 1776) was needed. The classical model described the market with perfect competition as being characterized by a large number of participants from both the demand and supply side, presenting homogeneous characteristics so that the price of equilibrium was given by "meeting" between supply and demand on the market, without any intervention from outside. But since then, over more than 300 years, the structure of markets has changed dramatically so the mathematical model developed by Hurwicz - Maskin - Myerson (2007) provided a better model to describe the mechanism for allocating resources, describing in a more realistic manner the current markets allocation mechanism.

What is financial decision-making and how it works is one of the questions that arise in the mind of any researcher in this field. Finance as a science is in a constant state of redefining its models and methods to help deciphering mysteries hanging over this area. Each science has its specificity, all have evolved over time and each one enriched its area of knowledge by working with other sciences. All have borrowed methods and techniques from each other in order to gain a deeper understanding of the phenomena that take place in the world around us. So new independent sciences appeared by merging one to another and an important number of "border" sciences have been born such as behavioral finance, game-theory, econophysics or others.

Another milestone for economic and financial theory were the 1800s, when researchers and scientists have turned their attention to issues regarding the study of national income produced by a country's economy developing models of

macroeconomic analysis like the price of supply-demand balance on the perfectly competitive and free market. The variables analyzed were quantifiable and related to linear functions that measured market demand and supply at economic aggregate level (Greene, 2003). The equilibrium price was created on the free market and was the one at which the supply of goods and services between supply and demand was made without the need for economic arbitrage measures (Dixit, 1990).

This is also the prospect of Adam Smith's classical theory. The balancing mechanism on this market was "naturally" realized by the "invisible hand". The problem that researchers were looking for a solution was referring to efficient allocation of natural resources that are limited. At that stage, however, the issue of arbitrage of resources between the market players was not discussed in the sense of their reallocation between them. The free and competitive market, which is the classical model of allocation resources through the "invisible hand" is a mechanism that efficiently allocates resources under perfect competition conditions and this affirmation applies to privately owned assets (Varian, 1992). But in the case of the public, the model of resource allocation described by the free market does not work. This justifies State's intervention to allocate resources to the free market for the purpose of regulating and delivering public goods. At the same time, the state acts on the market as a true economic actor, providing increased access to finance for private businesses, taking direct action by providing subsidies or money loans. The State also supports enterprises by financing investment or public utility services offered to private actors. The term public goods shall be used as a concept referring to public goods and services. To this end, the state intervenes in the free market by allocating a share of the public financial resources at its disposal to private enterprises to provide them with access to the necessary funding sources. At present, the state plays an important role in ensuring access to finance for private enterprises through the use of various flexible public - private financial tools. This form of access to public - private funding can only be materialized through the realization of projects in partnership between the state and enterprises, which share both human, material and financial resources.

The country's macroeconomic policies, starting from the crisis of the 1930s to the 1970s, were influenced by Keynes's ideas and addressed demand fluctuations, in the sense of stimulating it in times of recession by "printing and injecting" money into the economy translating into market demand and stimulate production in this way (Elvin, 2004). The rationale was well received by the governments of the states that have begun to practice large-scale excessive budget deficits from that date. Analysts were interested in measuring aggregate phenomena in the economy by the year 1970. With the work of Robert Lucas, scientist's interests turned at the microeconomic level. His ideas attracted the attention of scientists towards the fact that implementation of public policies translate into a number of decisions taken by people. Thus, the importance of decision-making at the enterprise level and the solution brought by project management for the achievement of organizational objectives appeared. The pioneering work of Robert Lucas the 1970s meant the introduction of micro-economic elements in the macroeconomic models and the unexpected influence people can have on macroeconomic variables. All in all,

economy and society is composed of individuals whose decisions influence the course of economic aggregates.

3.2. Behavioral elements in the modern financial decision-making model

"Homo oeconomicus" definition lies in its involvement in transactions having a purpose in mind and bearing at its disposal of a number of "tools" for achieving it. He is "limited" by "inputs" or by his resources and he is oriented towards "outcomes" to reach the proposed goal. In this sense, any human activity can be defined as a process- input and output - and a series of coordinated unique processes to a particular purpose results in a project. Economy as a whole is the sum of the results of all individual projects so that economy appears as a portfolio of projects.

Current context in which organizations operate involves a large number of forces, each of which has its own specific interest. We refer here to the forces of the external environment, such as the market, customers, suppliers, investors, business partners and also to the internal environment of the company's management and employees. All these stakeholders want to get some value for the resources invested within the organization. But this value has a different content for each of them and takes the form of divergent interests. Depending on how the organization will be able to coordinate all these divergent forces in order to achieve its purpose depends on its success in the market thus gaining a comparative advantage over competitors. This comparative advantage actually translates into that added value for all stakeholders in the organization. The way managers strive to find the most appropriate solutions to the ever-diversified requirements of customers, suppliers or investors that will decide its survival on the market.

The question that both managers and financial science have tried to answer is "How do we add value?" Scientific research and also managers in the business tried to find answers to this question by turning their attention to the study of economic reality in order to exploit domestic resources for the benefit of the organization in order to create added value for those who bear an interest in that organization.

According to microeconomic theory, the balance in a market with imperfect competition and in which information is distributed asymmetrically among the participants is achieved by the "chance" encounter between demand and supply on the market. But the "invisible hand" or the "incidental" equilibrium effect on the market is not an efficient mechanism in allocating limited market resources so that to minimizing losses, nor maximizing earnings due to the reality of markets characterized by the presence of asymmetric information distributed among the participants and by imperfect competition.

The economy as a whole is a sum of individuals interacting bearing different interests. This interaction is an exchange of a material or immaterial nature. The exchange between individuals is generated by the purposes or interests of the people, who thus enter into relationships with each other. Transactions between people in the economy are financially supported. This creates an intrinsic link between the notions of project financing and the objectives followed. The project determines how divergent forces between individuals are convergent directed, in that they share a common and unanimously accepted goal. Even though the directions in which the forces are directed are found in different planes and angles, their result

will come in one single point. Enterprises create both the environment and the factor for change and progress of the human being. The "internal kitchen" of each organization creates prerequisites for innovation but also the ways in which they come in to influence in an increasingly deeper manner the lives of individuals.

Organization is an environment for the transmission of information in order to guide the work of people to achieve the goals for which it exists and has been created. At the same time, the organization is also a means by which managers carry out their goals, whether private or public. Private-public differentiation departs from the characteristics of the interests or mobiles that stand behind these goals. They can belong to a single person or group acting in their own name, and then the organizations are privately owned. Among the theorists of this vision of organizations, viewed as economic entities oriented towards the achievement of goals, one can mention the contribution of Friedrich von Hayek (1974). His ideas were continued by Professors Leonid Hurwicz, Eric Maskin and Roger Myerson (2007) who built a model entitled mechanism design theory and it is a decision model. The theory that lies behind the model refers to the fact that it was necessary to develop a mechanism that would support organizational decision-making in order to optimally allocate the value added expected by the participants. Professor Maskin explains that the essence of the developed mechanism starts from the goals and interests of the participants who interact and has discovered the "revealing principle" that describes all the possible solutions that represent the balance of repetitive games, coordinated by an external mediator. Professor Myerson explains why resource allocation is no longer a current theory, and taking Hayek's theory (1945) and developing it has shown how individual ownership of private information can create hidden motivations for participants or agents to send false messages to partners to manipulate the results of the transactions between them. Thus, their mechanism integrates the notions of moral hazard and adverse selection (Myerson, 2007). Bringing together elements from game theory they have built a decisional model describing the mechanism of optimal allocation of the surplus value resulting from the transactions between them. The mechanism is built on a non-cooperative gaming system where participants have incomplete information about each other and the equilibrium is repetitively achieved. The model is currently widely used in auctioning, political choices, or paying taxes or duties in public and private organizations. The mechanism of this model refers to the realization of the best possible variant, from the one existing at the moment of taking a collective decision, which implies the simultaneous satisfaction of a large number of individual needs. The model uses mathematical elements and game theory to match the resources with the recipients they will be assigned, whether public or private. The goal is to minimize "loss of value" and to help maximize the partners involved in a transaction on a market where private information is heterogeneous and asymmetric distributed between participants.

3.3. Economy and enterprise seen as a portfolio of projects

The external environment plays a fundamental role in the dynamics of the organization, influencing its shape and nature. How does this explain? First in that all input - sites used by organizations come from the environment (raw materials,

energy, labor, equipment, etc.), then output - the organization appears on a given market that is also a part of the environment. Also, many aspects of the process of transformation of inputs into outputs are constrained or regulated to environmental factors (legal or administrative regulations).

A project implemented by an enterprise that pursues its goals in this way plays the role of agent through the project manager. The agent theory tells us that there is a series of temporal conflicts between the agent and the owner of the enterprise on behalf of which the action takes place between the short-term goals of people due to their human and long-term nature of the organization they belong to (Kahneman & Tversky, 1974).

Herbert Simon, Nobel Laureate for Economics in 1978, said that the organization was not an "individual entity," but a sum of divergent "forces" deriving from the different interests of the groups within it. Finding the "middle line" between the multitudes of objectives does not have a single "optimal" path of realization, but diversity (H. Simon, 1978). Daniel Kahneman reflects on the differences in time perspective of the managers, at the organizational level, between long-term and short-term objectives. Managers make decisions on behalf of the company they run (Kahneman, 2009). Robert Aumann discovered that at the individual decision-making level there is a disconnection between the clear and logical rules they establish before acting on and the irrational state of mind they find themselves when acting (Aumann, 2004).

At the same time, the goal pursued by an organization that can be defined as the goal of an individual or a group of individuals. It can be seen the interconnection of concepts such as individual, goal and project. The organization of human activity generally has a complex structure, that resembles the "Sierpinski triangle" a geometric figure present in fractal theory. This is a geometric shape that has a fractal structure, because the closer you look at it, you notice the identical "copies" of all that are actually its components, only their size is the only difference. The closer you look at the fractal figure, you can see in the composition of the object an infinity of copies identical to the whole in terms of structure but different in size. Similarly structured looks and the enterprise from the point of view of the organization of human activity aimed at achieving a goal. The company consists of projects that match the objectives of human activity, as well as individuals interconnected to each other through - a network of projects. Economy and the financial market is a network of structured projects for a specific purpose. One can thus talk about a country's economy as a complex project. Its subcomponents are the projects of the administrative - territorial units subdivided into the projects of the various organizations that make up the local community. Continuing with this reasoning, each individual's projects are reached. All projects that make up the economy are interconnected and look like a network of fractal nature. The fractal structure of the economy finds various applications, ranging from the social sphere, to the public finance system, to the private financial system.

4. Conclusions

Why are the subjects and the enterprise at the heart of this paper? The answer is simple: individuals are the ones who decide at organizational level and thereby they assume financial risks that impact their decisions. Financing decision on allocating resources on enterprise level depends on factors such as risk and return of a financial decision outcome. The incidence of risk associated with the financing of project management inside companies is an innovative approach to measuring risk as it analyzes the impact factors on the decision-making subject both globally, at macroeconomic and microeconomic level and at enterprise or project level to the decision-making subject. Current research also provides a theoretical contribution to knowledge and understanding of the financing mechanism of projects managed by enterprises revealing modern financing decision models that built on classical financing sources to more complex ones from the capital market.

The financing of a private enterprise, irrespective of the number of its owners or shareholders or its turnover, is analyzed as an integrated concept in the financial market. The concept of financial market, in the present study, refers to all the sources of funding that are currently available to organizations. Market sources of funding in the current context are either private, governmental, public or both. This integrated approach is necessary because money flows are moving in and from public to private and vice versa. The overall outlook on the entire financial market can provide a better understanding of the phenomenon of money multiplier in the economy and also on the financial mechanism needed to secure the money resources necessary to achieve the organizational objectives using the different forms of financing existing on the market. All these phenomena are conditioned by the evolution of the political and legal environment, all of them being approached in a complex integrated structure of projects, objectives and resources needed. Studying the mechanism of financing an enterprise's objectives through projects is the motivation of the present paper and involves reflections on the different patterns of resource allocation in the economy during the stages of economic theory, from classical to modern.

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THE EFFECTIVENESS OF THE SYSTEM OF QUALITY CONTROL IN ACCOUNTING PRACTICES

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Abstract: *Any accounting firm need to develop a system of quality control (SQC), which have the purpose to offer a reasonable assurance, that the accountants or the auditors, and their personnel, respect the professional standards and any legal or regulatory requirements, and the reports issued are appropriate, with the circumstances. The quality control system contains polices and their implementation is achieved through a system of procedures. A company can have a system of quality control, but only as a form, and as result, it is very important for everyone to be able to assess, how effective such a system works. An effective quality control means more than compliance with rules and provisions, and this is the reason why, for an accounting firm, it is very important, not just to have the system, but, also, to have some methods to evaluate how effective this system is. A lot of benefits can result from a robust SQC, regarding competitiveness on the market and the financial performance, and through monitoring controls, an accounting firm apply tests to ensure that controls are designed and works properly. The paper has the purpose to identify whether the accounting practices, small and medium, know how to evaluate the effectiveness of quality control system, and in connection with is, whether they have enough information to develop a set of indicators, which could measure the effectiveness of the firm's SQC The research is based on descriptive statistics applied on the results of a survey addressed to small and medium practices in accounting and auditing. The results can make their contribution to disseminating how to design the system of indicators used to evaluate the effectiveness of the quality control system. The findings of the paper are not very optimistic, but if, at least it draws attention to the importance of building a set of indicators to measure the effectiveness of the quality control system, the objective has been achieved.*

Keywords: *Quality Control; policies; procedures; effectiveness; indicators; SQC.*

JEL Classification: *M41; M42.*

1. Introduction

With the purpose to ensure that the professional accountants delivery high-quality services and meet the public interest, by regulation, accountancy profession organizations and their members must play an important role in the assessment of the quality control system (SQC) developed, also at the firms' level, and at any engagement performed.

All the professionals that are working in firms or as sole practitioners, and performs a wide range of professional services, in accounting and auditing practices, are required to develop and maintain a system of quality control (SQC). The International

Federation of Accountants, IFAC, achieves its objective to serve the public interest, and issues standards as guidance to establish the responsibilities of a firm to develop a system of quality controls and the responsibilities of a professional body to evaluate its application.

The most important guidance for an accounting or auditing firm, in establishing and maintaining a system of quality control (SQC), with the objective 'to provide it with reasonable assurance that a) the firm and its personnel comply with professional standards and applicable legal and regulatory requirements; and b) reports issued by the firm or engagement partners are appropriate in the circumstances' (IAASB, 2015), is given by ISQC 1 'Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements'. For the audits of financial statements, the provisions of the ISQC 1 should consider, the additional ISA 220 'Quality Control for an Audit of Financial Statements'.

The IFAC's member bodies of professional accountants, in each member's country, also, apply a complementary guidance through IPPS (International Professional Practice Statement) no. 1 'Assuring the Quality of Professional Services'. The purpose of this document is to assure an external review of the quality control's policies and procedures, through a quality assurance review programs, which evaluate whether the firm of practicing accountants comply with their SQC or not, or the system needs some improvements.

Also, the IFAC Board have issued the Statements of Membership Obligations (SMOs) and SMO 1 'Quality Assurance', that 'requires member bodies to establish and publish quality control standards and guidance requiring firms to implement a system of quality control in accordance with ISQC1' (IFAC, 2004).

As result of these provisions, accountants and auditors must have developed a SQC, policies and procedures at the firm and the engagement level, and the professional and statutory bodies, worldwide, perform periodic independent inspections of the accounting and auditing firms' systems of quality control.

The paper has the objective to establish whether the accounting and auditing practices are preoccupied to measure the effectiveness of the SQCs. The paper provides relevant provisions and literature in order to identify the regulation applied for a set of indicators with the purpose to measure the effectiveness of the SQCs. The hypothesis of the study is: *The professional accountants and auditors, in small and medium practices, have enough information for developing a set of indicators which evaluates the effectiveness of the firm's SQC?*

With the purpose to answer at this question the paper presents the data which are used, the descriptive statistics and the research design. Also, the study presents the results and the conclusion based on them that are reached.

2. Literature review

2.1. The System of Quality Control and the Public Interest

There have been a variety of other research projects and global initiatives on the topic of audit quality, and as result there has not been an universal agreement on a definition of audit quality, or the audit quality framework, or the most relevant indicators of audit quality and how and to whom they should be communicated.

The level of audit quality is linked to quality level of the information contained in financial statements, the reason for this is that the financial statement that have been audited by high quality auditors rarely contained substantial misstatements, which is reflected in minimization agency costs between shareholders and management. Thus, according to the literature, audit quality positively affects the quality of accounting information. (Soliman, 2014)

The accountancy profession and regulatory community act in a public/private arrangement of shared regulation that bears joint accountability for the actions of the profession, as well as their impact on society as a whole. (IFAC Policy Position Paper 5, 2012)

Accountants and auditors are responsible and have the aim to ensure the quality of their works. As result, all the professionals that are working in firms or as sole practitioners, and performs a wide range of professional services, in accounting and auditing practices, are required to develop and maintain a system of quality control (SQC). Policies and procedures, regarding the quality control of the professional accountancy services, are developed at the engagement level, at the level of the firm and at the national level, through the professional bodies.

An accountancy firm's system of quality control is intended to address certain key elements, such as: leadership responsibilities for quality within the firm, ethical requirements (independence, integrity, objectivity), client relationships, human resources/personnel management (which includes sufficiency of resources, technical knowledge and experience), engagement performance, communication and reporting, and monitoring.

Based on that key elements, a set of potential Audit Quality Indicators (AQIs) could provide additional perspective on the firm's system of quality control, and could be useful for understanding the matters that may contribute to the performance of a quality audit. A set of AQIs could help the firm's ability to support and perform quality audits, could help a better understanding the firm's policies, procedures, and processes related to its system of quality control, and could provide information about the engagement team's performance.

2.2. Quality Control according the Standard Setters

The Public Company Accounting Oversight Board's (PCAOB) and the International Auditing and Assurance Standards Board (IAASB) have developed two projects, analyzed further below, which have the purpose to identify characteristics and indicators of the audit quality, setting off by the two different perspectives and that responding to the issues arising in the previous main studies.

The Public Company Accounting Oversight Board (2013) released its Audit Quality Indicators Project in which they propose a set of qualitative/quantitative indicators discussed with the board's advisory groups, firms, other regulators, audit committees and academics in order to identify a good audit quality framework.

In the paper could be identifies the following indicators used to evaluate the quality of audit service:

- Operational inputs - indicators regarding the people that work in audit firm: ratio of partners to staff, partner and staff utilization percentages / workloads, chargeable hours per professional, percentage of work

outsourced to service center, industry expertise and proficiency, training hours per audit professional, and so on.

- Process - the firm leadership communications on audit quality and investors' interests: metrics related to independence, testing, and compliance; number and nature of internal quality review findings; compensation trends of prematurely rotated partners; leverage ratio of audit staff to partners, credentials of new hires and recruiting - academic achievement; best companies to work for rankings; compensation levels.
- Results - frequency and market impact of financial statement restatements for errors: number of material weaknesses cited in conjunction with material errors, number of audit reports lacking a going concern opinion which had a subsequent bankruptcy; number and nature of PCAOB inspection findings, and so on.

The Center for Audit Quality (CAQ), affiliated with the American Institute of Certified Public Accountants (AICPA) has closely followed the Public Company Accounting Oversight Board's (PCAOB) Audit Quality Indicators (AQI) initiative and developed a set of potential AQIs that could provide benefits relative to the oversight of the audit quality, CAQ (2014) - CAQ Approach to Audit Quality Indicators.

Similarly, the International Auditing and Assurance Standards Board (2014) released "Framework for Audit Quality: Key Elements that Create an Environment for Audit Quality", which describes the different elements that create the environment for audit quality at the engagement, firm, and national levels, as well as relevant interactions and contextual factors:

- Inputs – the audit firm's culture (values, ethics and attitudes), the time, knowledge and skill brought to the audit and the effectiveness of the audit's processes and quality control procedures
 - Engagement Level (for example the engagement team is independent, the engagement team exhibits professional competence and due care, the engagement team exhibits professional skepticism, partners and staff have the necessary competences, partners and staff understand the entity's business., partners and staff make reasonable judgments)
 - Firms level (Governance arrangements are in place that establish the appropriate "tone at the top", and which aim to safeguard the firm's independence, Necessary personal characteristics are promoted through appraisal and reward systems supporting audit quality Engagement teams are properly structured, Partners and more senior staff provide less experienced staff with timely appraisals and appropriate coaching or "on-the-job" training.)
 - National level (Regulators, national standards setters and professional accountancy organizations are active in ensuring that the ethics principles are understood and the requirements are consistently applied. Robust arrangements exist for licensing audit firms/individual auditors, Education requirements are clearly defined and training is adequately resourced and effective)

- Outputs – recognizing that some stakeholders (such as regulators) have the ability to influence outputs while for others (such as investors) outputs (in the form of the auditor's report) are relatively standardized. For these factors the IAASB distinguish:
 - Engagement Level (From the Auditor: Auditor's Reports to Users of Audited Financial Statements, Auditor's Reports to Those Charged with Governance Auditor's Reports to Management, Auditor's Reports to Financial and Prudential Regulators; From the Entity: The Audited Financial Statements, Reports from Those Charged with Governance, including Audit Committees).
 - Firm and national level
 - ✓ From the Audit Firm: Transparency Reports, Annual and Other Reports;
 - ✓ From Audit Regulators: Providing an Aggregate View on the Results of Audit Firm Inspections
- Interactions – the nature and quality of the various interactions between involved stakeholders e.g. auditors, management, those charged with governance and regulators during the audit process
- Context – the legislative and regulatory environment within which the audit operates. The impact of the financial reporting framework and corporate governance on financial reporting quality also give context to the audit.

However, the IAASB's framework does not present a definition of audit quality or or not provide AQIs.

3. Research Questions and Survey Design

Based on the indicators included in the papers presented above, that are relevant for evaluating the effectiveness of the system of the quality control developed in the accountancy firms, the research question of the study was: *The Romanian professional accountants and auditors, in small and medium practices, have information for developing a set of indicators which evaluates the effectiveness of the firm's SQC?*

With the purpose to test this hypothesis, the empirical data are collected based on a survey sent to the most important social media groups, where are registered more than 10.000 members, most of them certified as accountants or auditors, members of CECCAR or CAFR.

The survey instrument was prepared and send using www.docs.google.com and the responses was received in the same way. The professional accountants were asked to offer information regarding the quality control policies and procedures, the existence and the appliance of the SQC at the firm level, and also, to identify whether there exists information for the SQC assessment and could be developed indicators about the quality of the engagement.

The design of the questionnaire uses the multiple response for closed ended questions and the participants need to express the agreement ratings on a 5-point Likert scale ranging from 1 (strongly disagree/never), 2 (disagree/rarely), 3

(undecided/every once in a while), 4 (agree/sometimes), 5 (strongly agree/almost always).

The questionnaire consisted of 10 questions formulated in the Romania language to minimize misinterpretations from the respondents and to increase the reliability of the empirical study. In order to design the questionnaire, as well as increase reliability and ensure that the questions included in the questionnaire were in conformity with the study's purpose of investigation, the authors have led first a pilot test. The pilot test was completed by certified accountants and auditors during the professional courses conducted by the professional bodies. To test the questionnaire in practice, the questionnaire also was administered to different professionals, accountants and auditors, via electronic mails.

Based on the CAQ proposal for a set of AQIs, the questions were formulated in order to cover qualitative and quantitative information about the key elements of the SQC developed by the firm:

I. Firm Leadership and Tone at the Top - how the firm's tone at the top influences and reinforces audit quality at the engagement level.

Q1: The firm's Tone at the Top influences and reinforces audit quality at the engagement level.

II. Engagement Team Knowledge, Experience, and Workload – intend to determine that, collectively, the engagement team has the appropriate experience and competencies, and that specialists are engaged, as needed.

A. Knowledge and Experience of Key Engagement Team Members

Q2: The engagement team's members have the appropriate experience and competencies?

Q3: Are engaged specialist whether in the engagement there is needed?

Q4: Are measured, for all key members of the engagement team, the years of experience (on the engagement, in industry, in firm, in profession)?

B. Audit Firm Training Requirements

Q5: The firm considers the relevant training requirements for the key engagement team members?

Q6: For the highly specialized industry the firm has an approach regarding to determine the special knowledge ant to obtain them by industry training courses or external industry professional conferences?

C. Allocation of Resources

Q7: The human resources are allocated by engagements based on the specialization and the prior experience?

D. Key Engagement Team Members' Workloads

Q8: The engagement team have appropriate time to perform any kind of work, and also, there is time enough for review and supervise the activity?

III. Monitoring

A. Internal Quality Review Findings

Q9: There are internal inspection for reviewing the control quality system, and as result of the findings are procedures modified?

B. Accountancy Organization Inspection Findings

Q10: The firm was the subject of the professional body inspection, and for the identified deficiencies were undertaken plans of remediation, including changes in the firm's system of quality control?

4. Results

The survey was administrated to a wide variety of accountants and auditors who works in small and medium practices. A total of 105 responses were obtained. The demographic profile is as follows: 56 percent of the sample are men, 63 percent were having bachelor degree education, 27 percent were having master degree education and 15 percent having a PhD, 67 percent have professional certification as chartered accountant, 25 percent have certification in auditing and 13 percent have certification as tax consultant.

Table 1 shows descriptive statistics of the responses, which describes professional accountants and auditor's perceptions regarding the variables used in the analyses. The results interpretation it is about the values of the mean, standard deviation, median and mode.

Table 1. Descriptive statistics—professional accountants and auditors' perceptions (N = 105)

Descriptive statistics	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Mean	4,12381	2,67619	2,190476	1,6	1,485714	2,857143	2,180952	3,571429	1,704762	3,847619
Standard Error	0,109691	0,093267	0,088842	0,062897	0,082447	0,087107	0,09832	0,110657	0,082235	0,108925
Median	4	3	2	2	1	3	2	4	2	4
Mode	5	3	2	2	1	3	2	4	1	4
Standard Deviation	1,123997	0,955704	0,91036	0,644503	0,844829	0,892582	1,007481	1,133893	0,842658	1,116149
Sample Variance	1,26337	0,91337	0,828755	0,415385	0,713736	0,796703	1,015018	1,285714	0,710073	1,245788
Kurtosis	1,831019	-0,31938	1,025139	7,203738	5,840166	-0,07386	0,363368	-0,2003	3,117409	0,318577
Skewness	-1,53242	0,222804	0,779821	1,704732	2,288943	0,70045	0,834623	-0,6644	1,492554	-1,00384
Range	4	4	4	4	4	4	4	4	4	4
Minimum	1	1	1	1	1	1	1	1	1	1
Maximum	5	5	5	5	5	5	5	5	5	5
Sum	433	281	230	168	156	300	229	375	179	404
Count	105	105	105	105	105	105	105	105	105	105

Source: For the statistical analysis of the collected data was used Microsoft Excel - Analysis Data package

In this study, we received 105 individual responses, and the mean's values for each of the question is presented in the Figure 1.

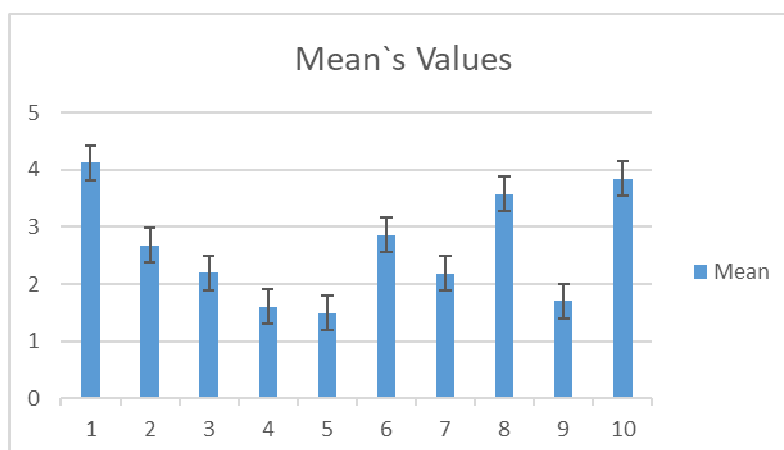


Figure 1. Mean's values for professional accountants responses

Source: For the statistical analysis of the collected data was used Microsoft Excel - Analysis Data package

Table 2. Indicators used to evaluate professional accountants and auditors' perceptions (N = 105)

No. Q	Spec	Z	%	CV	Top Box	Top 2Box	Agree	Net Top B
Q1	4	0,110151	54,4%	27%	46,7%	81,9%	81,9%	40,0%
Q2	4	-1,38517	8,3%	36%	2,9%	19,0%	19,0%	-6,7%
Q3	4	-1,9877	2,3%	41,6%	2,9%	5,7%	5,7%	-19,0%
Q4	4	-3,7238	0,0%	40,3%	1,0%	1,9%	1,9%	-43,8%
Q5	4	-2,97609	0,1%	56,9%	1,9%	4,8%	4,8%	-63,8%
Q6	4	-1,28039	10,0%	31,2%	5,7%	21,0%	21,0%	4,8%
Q7	4	-1,80554	3,5%	46,2%	2,9%	11,4%	11,4%	-22,9%
Q8	4	-0,37796	35,3%	31,7%	21,0%	60,0%	60,0%	14,3%
Q9	4	-2,72381	0,3%	49,4%	1,9%	2,9%	2,9%	-45,7%
Q10	4	-0,13652	44,6%	29,0%	30,5%	74,3%	74,3%	25,7%

Source: For the statistical analysis of the collected data was used Microsoft Excel - Analysis Data package

To find more meaning of the responses to the closed ended rating scale data and to make it more interpretable, after the descriptive statistics, and the calculation of the mean and the standard deviation, another 5 indicators could be calculated:

1. The percent of the agrees (the percent of respondents who choose 4 or 5);
2. Top Box (the percent of respondents who choose 5) and Top 2Box scoring (equal with the percent of the agrees);
3. Net Top Box (from number of respondents who choose 5 subtract number of respondents who choose 1);
4. Z-Score to Percentile Rank - converts the raw score into a normal score: $Z = (\text{Mean} - \text{Spec.}) / \text{Standard Deviation}$;

5. Coefficient of Variation (standard deviation is divided by the mean, higher values indicate higher variability, which indicates inconsistent attitudes).

The responses are interpreted through the agreement ratings, based on the 5-point Likert scale ranging (where 5 – almost always; 4 – sometimes; 3 - every once in a while; 2 – rarely and 1 – never), as follows:

R1: The firm`s Tone at the Top influences and reinforces audit quality at the engagement level **sometimes/almost always**.

R2: The engagement team`s members have the appropriate experience and competencies **every once in a while**.

R3: When in the engagement there are needed specialists, they are **rarely** engaged.

R4: The years of experience (on the engagement, in industry, in firm, in profession) are **rarely** measured for all key members of the engagement team.

R5: The firm **never** considers the relevant training requirements for the key engagement team members.

R6: For the highly specialized industry the firm has **rarely** an approach regarding to determine the special knowledge ant to obtain them by industry training courses or external industry professional conferences.

R7: The human resources are **rarely** allocated by engagements based on the specialization and the prior experience.

R8: The engagement team **sometimes** have appropriate time to perform any kind of work, and also, sometimes there is time enough for review and supervise the activity.

R9: There are **rarely or never** internal inspection for reviewing the control quality system, and as result of the findings are procedures modified.

R10: The firm was **sometimes** the subject of the professional body inspection, and for the identified deficiencies were undertaken plans of remediation, including changes in the firm`s system of quality control.

5. In conclusion

The aim of this paper was to identify whether the professional accountants and auditors, who works in small and medium practices, are looking to get the information that can build a set of indicators, relevant for evaluating the effectiveness of the system of the quality control, developed in the accountancy firms.

The empirical analysis indicates that Romanian accountants and auditors, who works or as sole practitioners, or in small and medium firms, are not yet prepared to develop such a system of indicators for the SQC`s assessment, because all the necessary information are or rarely or even never obtained, and just too few of them, are sometimes issued.

Throughout this paper we have shown that just the existence of a SQC, it is not enough to prove its efficiency.

The practical implications of this study aware the accountants and auditors to become more preoccupied by the SQC`s effectiveness assessment, to have in intention to develop a set of indicators with this purpose.

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ANALYSIS OF MAJOR CAPITAL STRUCTURE INDEXES OF ORGANIZATIONS DEALING WITH SPORTS ACTIVITIES AND THEIR RELATION WITH THE NOTES TO THE FINANCIAL STATEMENT

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Abstract: GDP-measurable impact of the sports sector shows a growing tendency. It is one of the most defining elements of global economy, as it is constantly opening up new markets, with profit-oriented companies appearing, where the objective is to achieve profit and wealth. Therefore, it was considered important to examine the financial situation of various sports companies based on their annual statements. The purpose of the financial statement is to provide various market participants with information about the business situation of a company in order to support their decision-making process. In order to make informed decisions, it is essential to process and analyse the financial data disclosed in the statements. The analysis provides the management with essential information on the operation of the system and ensures its awareness. The aim of present study is to show the characteristics of profit-oriented organizations located and based in Hungary in the years 2014-2017, which have TEÁOR (Hungarian version of NACE) 931 'sports activities' as their primary business activity. The financial situation is presented through the analysis of the liabilities side of the balance sheet. The survey involves mapping the relationship of the indexes with the notes to the financial statement, namely their conformity with the mandatory content stipulated by the Accounting Act.

Keywords: sports sector; analysis of the financial situation; capital structure indexes; notes to the financial statement.

JEL Classification: Z23.

1. Literature review

Sport is of increasing importance in the life of modern societies of our time. It involves more and more people (either passively or actively) into the world of sport; the performance of the sport-based economic sector is constantly expanding and its role is becoming increasingly positive in various social areas (Laczkó, 2015). The economic importance of sports is no longer questioned by anyone. Sports economics is considered a relatively young field of science both within the scope of sports science and economic sciences (Kendelényi-Gulyás, 2017).

Average annual growth rate of the global sports market between 2009 and 2013 was 7%, which means that the growth rate of the sector exceeds GDP growth rate in a significant proportion of national economies, especially in large markets such as the United States, Brazil, United Kingdom and France (Bácsné et al., 2018). Long-term prospects of the sector are also encouraging. Household expenditures of sports tools, clothing, equipment, and health and fitness reach \$700 billion annually, which is 1% of global GDP (Collignon, 2014). In their study, which examined the economic situation of enterprises dealing with sports activities between 2014 and 2016, Bácsné et al. (2018) found that the results of the three-year study clearly show that the sector experiences constant development, its contribution to the added value is increasing both in terms of amount and proportion. Traditional levels of economic analysis can also be found in the field of sports economics research. Macroeconomic research primarily measures the economic importance of sports, its contribution to national economy income, employment, and consumer spending. Analysis of the economic effects of various international sporting events (Olympic Games, UEFA European Championship, FIFA World Cup) also appear within this area. Microeconomic research focuses on the issues of the operation of sports services and providers, the characteristics of supply and demand and the functioning of sports organizations. A mesoeconomic level exists between the above two levels, which deals with the specificities of sports such as the economics of leagues and the specialties of the player market (András, 2015). Present study belongs to microeconomic research.

2. Material and method of the study

Currently, in April 2019, there are 2980 companies in Hungary, which are engaged in sports activities. The survey database includes companies that are based in Hungary, identified their primary business activity as 'sports activities' (TEÁOR 931), and have 4 closed business years. In the scope of the study, the financial statements of 1747 companies were analysed (57.62%). These are the companies that prepared financial statements for the period of 2014-2017 and that are not under bankruptcy proceedings or being liquidated or terminated. The data was provided by the OPTEN database.

For the analysis, Microsoft Excel spreadsheet software, and data management and calculation options of the R statistical system were applied (Everitt – Hothorn, 2010; Huzsvai, 2013). The R statistical system was utilized through Excel, by means of RExcel (Heiberger – Neuwirth, 2009).

3. Analysis of the companies by quartiles. Analysis of the main capital structure indexes of companies by means of the quartile classification based on net sales revenues

The data used as the basis of the examination (1747 companies) were ranked by their net sales revenues of the 2014 financial year in an ascending order and were divided into four equal parts for the quartile-based analysis. Data were examined by

means of descriptive statistical characteristics (mean, extent of deviation, relative standard deviation, skewness and kurtosis)

From among capital structure indexes, four main indexes were highlighted, by means of which the distribution of the capital of sports-related enterprises classified by their origin is presented among the main groups. The analysis of the financial situation in present study is carried out using vertical indexes. Financial situation of companies was analysed through the equity ratio, ratio of provisions, ratio of liabilities and ratio of deferrals for the examined periods (2014, 2015, 2016, 2017). The indexes examine the ratio of each main group of the balance sheet to total liabilities.

Table 1 shows the mean index values referring to the equity ratio of the total population and the 4 quartiles which are classified by net sales revenues; it also includes relative standard deviation, skewness and kurtosis for each analysed year. In general, it can be stated about organizations performing sports activities that their equity ratio shows unfavourable values. Mean values are characterised by negative values for the total population and all quartiles except for the 4th quartile. This means that these businesses are less profitable; in many cases, their shareholders' equity is negative. In the case of the 4th quartile (companies with the highest sales revenues), positive shareholders' equity values were recorded in 2014 and 2015 by examining the mean value. In 2016 and 2017 negative equity ratio was found in this group as well.

Table 1: Main statistical properties of the equity ratios of the quartile classification carried out based on net revenue (%)

Group	Statistical index	2014	2015	2016	2017
Total population	Mean	-1964.97%	-46.68%	-2273.70%	-893.44%
	Relative deviation	-2778.25%	-1423.30%	-2048.51%	-1306.76%
	Skewness	-39.64337	-24.72958	-30.29266	-23.70323
	Kurtosis	1618.9527	766.23255	977.01236	630.41538
1 st quartile	Mean	-1758.10%	-99.46%	-6111.06%	-2610.81%
	Relative deviation	-798.46%	-1191.13%	-1301.74%	-850.89%
	Skewness	-13.06294	-16.48092	-19.68782	-13.19566
2 nd quartile	Mean	187.11567	297.5959	400.75767	186.36055
	Relative deviation	-6016.26%	-21.53%	-2681.16%	-433.19%
	Skewness	-1796.88%	-1138.19%	-1793.86%	-717.75%
3 rd quartile	Mean	-20.32628	-8.611016	-20.72749	-9.100315
	Relative deviation	419.63674	97.176604	432.13348	92.032494
	Skewness	-74.42%	-77.57%	-286.30%	-523.61%
4 th quartile	Mean	-566.52%	-689.13%	-1428.28%	-1186.71%
	Relative deviation	-8.495353	-8.957937	-20.22009	-17.2762
	Skewness	98.37406	94.886413	416.73255	320.00203
4 th quartile	Mean	7.01%	11.85%	-5.61%	-4.31%
	Relative deviation	1854.60%	893.19%	-4814.64%	-4706.37%
	Skewness	-7.32861	-6.177047	-11.83946	-6.079606
4 th quartile	Kurtosis	72.294685	53.169489	180.6218	46.660426

Source: Own editing

Relative standard deviation values of the total population and each quartile also refer to an extremely heterogeneous population. The lowest, but still very high values were observed based on the data of companies belonging to the 1st and 3rd quartiles. Consequently, it might be worthwhile to subdivide the given population to additional groups by means of a multi-variable method.

Analysis of skewness indexes shows that all of the variables show a left skewness, which means that in a coordinate system most of the data are not located close to the Y-axis. Skewness indexes are gradually decreasing from the 1st quartile to the 4th quartile and in the 3rd and 4th quartiles it is already well below 20.

Examination of kurtosis values suggests that distribution in terms of the total population and the quartiles can be regarded as more peaky as compared to normal distribution.

It is mandatory for companies to present their actual financial situation in their notes to the financial statement, including the disclosure of the changes of shareholders' equity and liabilities during the financial year, their reasons, with especial regard to changes of share capital. Proportion and changes of shared capital of the parent company, the subsidiaries, joint ventures, associated companies also needs to be presented.

Following the analysis of equity, it was considered important to examine the ratio of provisions as well. Provisions are allocated resources, which have to be or can be generated by the company in conformity with the stipulations of the Accounting Act as a security for expectable liabilities following the current financial year. Based on earnings before taxes, provisions have to be allocated for liabilities originating from past or ongoing transactions, contracts with third parties, which are likely or certain to exist on the balance sheet date, the amount or due date of which is yet uncertain and for which the company did not provide the necessary financial securities. Provisions can be allocated based on earnings before taxes for such expectable, significant and periodically recurring future expenses that are – on the balance sheet date – probable or certain to occur in the future, but the amount or date of occurrence of which is still uncertain and which cannot be recognized as deferrals. Such provisions can be provisions for expected liabilities, provisions for future expenses and other provisions.

The index represents the percentile proportion of provisions within total liabilities. Table 2 shows mean ratios of provisions in a quartile classification together with other descriptive statistical indexes. It can be established for both the total population and the breakdown by quartile that enterprises engaged in sports activities allocate only minimal provisions on average. As for the index numbers of the 1st and 2nd quartiles, there were years when none of the companies allocated provisions. The amount of allocated provisions increases with higher sales revenues, but the mean value still does not reach the value of .05% even in the case of the 4th quartile.

Relative standard deviation values belonging to the total population and for each quartile also indicate an extremely heterogeneous population. Based on the above, allocation of provisions can be recorded for companies belonging to the 3rd and 4th quartiles, but in a very low volume.

The analysis of skewness indexes suggests that each of the variables shows right skewness, which means that in the coordinate system most of the data is located near the Y-axis. Skewness indexes can be examined in the 3rd and 4th quartiles, and it can be concluded that the value has decreased during the first three years of the study, but this tendency reversed in the fourth year. Examination of kurtosis values suggests that distribution in terms of the total population and the quartiles can be regarded as more peaky as compared to normal distribution.

It is mandatory to disclose information in the notes to the financial statement about the amount of provisions for liabilities to affiliated undertakings, broken down by different purposes, with especial regard to the amount of provisions allocated for warranty liabilities to affiliated undertakings.

Table 2: Main statistical properties of the ratios of provisions of the quartile classification carried out based on net revenue (%)

Group	Statistical index	2014	2015	2016	2017
Total population	Mean	0.06%	0.04%	0.08%	0.10%
	Relative deviation	2096.01%	1411.21%	1695.93%	2073.42%
	Skewness	36.66743	18.88572	28.40632	34.39131
	Kurtosis	1446.981	406.221	946.2451	1301.291
1 st quartile	Mean	0.00%	0.00%	0.00%	0.00%
	Relative deviation	0.00%	0.00%	0.00%	2090.45%
	Skewness	0	0	0	20.90454
	Kurtosis	0	0	0	437
2 nd quartile	Mean	0.12%	0.00%	0.14%	0.00%
	Relative deviation	2092.84%	0.00%	1746.87%	0.00%
	Skewness	20.92845	0	19.6158	0
	Kurtosis	438	0	396.4027	0
3 rd quartile	Mean	0.00%	0.04%	0.01%	0.01%
	Relative deviation	1496.58%	1925.24%	1598.51%	1408.14%
	Skewness	15.3437	20.65027	17.64305	16.68412
	Kurtosis	240.1925	429.2086	326.9977	297.8867
4 th quartile	Mean	0.13%	0.12%	0.18%	0.39%
	Relative deviation	619.36%	713.63%	747.27%	1061.59%
	Skewness	7.594737	9.406272	9.947706	17.21762
	Kurtosis	63.61053	102.8738	109.4087	325.6194

Source: Own editing

Besides the ratio of shareholders' equity, the proportion of liabilities within the total liabilities needs to be examined; this is represented by Table 3. It can be established for organizations dealing with sports activities that the proportion of liabilities reflects prominently high values. Based on the expectations of technical literature, the value of the index is critical if it reaches or exceeds 70% and currently the recorded values show unfavourable results in both the total population and in each quartile. Values below 100% can only be found in the case of the 4th quartile.

Relative standard deviation values of the total population and each quartile also refer to an extremely heterogeneous population. The lowest, but still very high values were observed based on the data of companies belonging to the 4th quartile.

Consequently, it might be worthwhile to subdivide the given population to additional groups by means of a multi-variable method. The analysis of skewness indexes suggests that each variable shows right skewness, which means that in the coordinate system most of the data is located near the Y-axis. Examination of kurtosis values suggests that distribution in terms of the total population and the quartiles can be regarded as more peaky as compared to normal distribution.

Table 3: Main statistical properties of the ratios of liabilities of the quartile classification carried out based on net revenue (%)

Group	Statistical index	2014	2015	2016	2017
Total population	Mean	2057.70%	113.75%	2362.59%	986.04%
	Relative deviation	2653.06%	587.24%	1971.09%	1183.88%
	Skewness	39.64321513	24.48016252	30.29138477	23.69874424
	Kurtosis	1618.943492	754.7964694	976.8916122	630.1899891
1 st quartile	Mean	1852.05%	140.65%	6193.40%	2704.20%
	Relative deviation	757.99%	846.41%	1284.13%	821.37%
	Skewness	13.06234487	16.38851708	19.68825098	13.19393995
	Kurtosis	187.1020818	295.0526515	400.7672438	186.3122249
2 nd quartile	Mean	6112.63%	85.23%	2777.06%	529.62%
	Relative deviation	1768.55%	295.95%	1731.92%	587.14%
	Skewness	20.32626741	8.271307356	20.72745294	9.100363694
	Kurtosis	419.6363612	90.81429107	432.1324986	92.02924027
3 rd quartile	Mean	167.56%	157.79%	380.05%	618.34%
	Relative deviation	251.97%	340.95%	1076.07%	1004.98%
	Skewness	8.487199447	8.887312618	20.21935332	17.27497399
	Kurtosis	98.19785531	93.72127311	416.710599	319.9674996
4 th quartile	Mean	80.44%	71.39%	89.15%	90.16%
	Relative deviation	163.59%	151.93%	300.06%	225.53%
	Skewness	7.251491721	6.063259949	12.27281873	6.130443224
	Kurtosis	70.58089082	51.27197501	190.9334796	47.30817629

Source: Own editing

It is mandatory to disclose information in the notes to the financial statement about the amount of provisions allocated for liabilities to affiliated undertakings, broken down by different purposes, with especial regard to the amount of provisions allocated for warranty liabilities to affiliated undertakings.

In terms of the ratio of deferrals, relatively high values are recorded. With the increase of sales revenue, the allocation of deferrals also increases at the examined companies. In the first three quartile, the recorded ratios were below 6%, while in the 4th quartile the ratios were around 10-20%. Relative standard deviation is lower as compared to the rest of the indexes, but it still shows values around 2-300%, which indicates a heterogeneous population.

The analysis of skewness indexes suggests that each of the variables shows right skewness, which means that in the coordinate system most of the data is located near the Y-axis. Examination of kurtosis values suggests that distribution in terms of the total population and the quartiles can be regarded as more flat as compared to normal distribution.

Table 4: Main statistical properties of the ratios of deferrals of the quartile classification carried out based on net revenue (%)

Group	Statistical index	2014	2015	2016	2017
Total population	Mean	6.43%	5.80%	10.23%	6.55%
	Relative deviation	288.13%	293.38%	1074.81%	288.18%
	Skewness	4.467195	3.998122	37.0782174	4.253795
	Kurtosis	31.37091	19.90051	1468.75497	26.25778
1 st quartile	Mean	3.53%	2.97%	14.92%	4.09%
	Relative deviation	535.05%	508.44%	1421.65%	449.88%
	Skewness	8.686199	7.347779	20.4927954	7.03536
	Kurtosis	97.30265	67.61919	425.087591	63.99292
2 nd quartile	Mean	3.29%	3.20%	3.73%	3.34%
	Relative deviation	391.61%	398.90%	367.65%	380.64%
	Skewness	4.967574	4.883673	4.19085967	4.462935
	Kurtosis	26.31507	25.40863	17.6292771	20.51144
3 rd quartile	Mean	6.51%	5.52%	6.02%	5.03%
	Relative deviation	254.62%	274.92%	264.76%	295.05%
	Skewness	3.156703	3.689655	3.32513676	3.679732
	Kurtosis	10.21245	15.70222	11.5404981	14.16574
4 th quartile	Mean	12.42%	11.52%	16.28%	13.77%
	Relative deviation	184.51%	192.35%	331.85%	183.47%
	Skewness	2.143031	2.351331	13.4233586	2.54819
	Kurtosis	3.787723	5.451731	227.654274	9.602326

Source: Own editing

4. In conclusion

Our main research goal is to analyse the financial position of sports companies based on capital structure indexes. Four indexes were presented: the ratio of shareholders' equity, provisions, liabilities and deferrals for the total population and broken down by quartiles for the financial years 2014-2017. The survey involves mapping the relationship of the indexes with the notes to the financial statement, namely their conformity with the mandatory content stipulated by the Accounting Act. The database of the study was based on companies that are engaged in sports activities as their primary business according to TEÁOR (NACE) 931. Based on the classification by 2014 revenues, it can be stated that the dependency of companies on foreign capital is high and the business management of a large part of businesses is unfavourable, as mean indicators show negative shareholders' equity values. Allocation of provisions is minimal, however higher than average values are recorded in terms of deferrals. It is suggested to disclose these indexes, their

major changes and underlying content in the notes to the financial statement in order for them to facilitate the decisions of external actors.

5. Acknowledgements

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FINANCIAL LITERACY AND PENSION PLANNING OF MONGOLIAN HERDERS

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Abstract: *Pension planning is an internationally accepted tool for income substitution and poverty reduction in old age. The livestock sector is a traditional economic sector that still plays an essential role in the culture and economics of Mongolia. Herders account for nearly 24.5 percent of the total workforce. Pension income is the second monetary income source for herders. However, as of 2017, 32 percent of herder households are in poverty, and only 24 percent of herders participated in the social insurance program. This paper investigates the pension planning of a survey among 350 herder households in Mongolia in 2017. The study aims to pay attention to herder's pension awareness, knowledge, participation in pension, and to identify factors that influence pension participation. The research results indicate that less than half of total herders make financial plans for their retirement, although only 27 percent of participants pay social insurance fees regularly in various amounts. Social insurance fees paid by the herders are positively affected by education, age, and social insurance coverage, whereas the size of the loan has a negative impact. Our conclusion highlighted that improving herders' motivation, knowledge about retirement and basic financial literacy are essential. Policymakers and local government agencies need to develop policy tools to motivate the young herder's pension participation to break out a poverty cycle.*

Keywords: *financial behavior; financial literacy; pension planning; herders Mongolia.*

JEL Classification: *J43; G40; D14.*

1. Introduction

The agricultural sector is one of the primary industries in Mongolia that providing 10.6% of GDP after the mining sector, 8.4% of export earnings. Livestock sub-sector remains dominant within the agriculture sector, making up for 88% of the total agricultural output in 2017 (NSO, 2018b). The number of livestock is increasing and has reached 66.2 million or 110.8 million heads of animals in sheep units in 2017. As the animal is the primary income source of 169.7 thousand herder households (303.6 thousand herders), livestock herd sizes regard as an approximate measure of the wealth of herding households in Mongolia. Herder households with less than

200 livestock as poor herders make up 43% of the total number of herder households, but the size of their herd only accounts for 12% in terms of the total number of livestock in Mongolia (FAO and MoFALI, 2018). Herder households are slightly more affected by poverty than in other types of families. 28.8 percent of households without livestock are in poverty; in comparison, 31.9 percent of herder households are in poverty (NSO, 2018a). From the total household income of Mongolian herder households, 75.9% is various monetary income, which further consists of 41.3% of agriculture, 17.1% from pension and benefit, 11.2% from wages (NSO, 2018a). Moreover, researchers are concerned that the number of young herders is decreasing. According to statistical data, the number of herders aged between 15-34 is decreasing, whereas the number aged 35 and more are increasing (NSO, 2018a).

Mongolia introduced a state (public) pension system since 1942, which consists of mandatory and voluntary contributor schemes. The Mongolian Parliament made amendments into the Pension and Benefits provided by the Social Insurance Fund law in 2017. Also, they approved the Mongolian act of reimbursing pension insurance for herders and self-employers in 2013 and 2017 to improve the participation of pensioning. It dedicates an opportunity to herders repaying the pension insurance fee of the unpaid years in minimum wage level (Mongolian government sets the minimum wage level in every two years, as 240000 MNT/ 91.2USD in 2017). Notably, herders retiring age decreased by five years, each on male and female and set to 50 for women and 55 for men. Reference income declared voluntarily by herders, between the minimum wage and ten times the minimum wage level. Eligibility years of service: not less than 20 years of contribution to be entitled to a full old-age pension; and at least 10–19 years of participation for partial retirement. Replacement rate 45 percent of the monthly average wage of the highest continuing seven years' income and extra to 20 years 1.5 percent per each additional year. One herding year equals one year multiplied by 1.2 coefficient (Parliament, 1994, 1997; Mongolian Parliament, 2017). Consequently, herders can have an average of 30-40 working years and further a higher pension income (Ganchimeg, 2018).

As of 2017, at a national average, only 23.9 percent of total herders covered by social insurance. This coverage number is four times higher compared to 6 percent in 2000. Notably, 13 percent of herders pay the social insurance fee in 2017 (NSO, 2018b). The average pension amount is 282.7 thousand tugriks or 107.4 USD. The amount is low compared to the national average of 378 thousand tugriks or 143.6 USD.

Mongolian herders' retirement age becomes 50 for females and 55 for males; it is considerably lower than the average of international average retirement age 64.7 for males and 64.3 females (Pension, 2019). Ninety more percent of the herders pay minimum level social insurance fees. If they pay up to 10 times from the minimum fee level, they can increase their monthly pension amount. Herders and self-employers have only the opportunity to increase pension income 2-5 times higher than the average pension level if they grow the monthly insurance fee (Ganchimeg, 2018).

Retirement is an event with profound personal, social, and economic consequences (Aaron, 2010). Saving for old age allows individuals to transfer any excess income

gained of their earning years to the corresponding dry times of old age (Rusconi, 2009). Old-age pension systems have two objectives: income replacement and poverty prevention (Dethier *et al.*, 2011). Financial literacy in shaping retirement planning plays an important role (Lusardi and Mitchell, 2011). Financial literacy tied tightly to retirement planning. Individuals' financial literacy levels are different, and several factors do affect financial literacy.

Although many studies have focused on financial literacy, pension planning, and consumer behavior, there is no research on Mongolian herders' behavior and participation for retirement. Thus, reducing rural poverty through increasing pension participation and pension income would contribute to the Sustainable Development Goals of the United Nations: no poverty in 2030.

The research objectives of this paper are (1) to survey and analyze herders' pension knowledge, motivation, and attitude to participation in the pension, (2) to identify factors that influence pension participation.

The structure of the paper is as follows: Section two of this paper describes the materials and methods, including theoretical framework, model specification, data collection, and descriptive statistics. The third section presents data analysis and results. The last part of the paper contains the discussion and the main conclusions.

2. Materials and Methods

2.1. Theoretical Framework

Consumer financial behavior studies interlinked with consumer research in marketing, behavioral economics, and behavioral finance. Pension planning is one of the areas of the consumer financial behavior. People do not like to think about old age, sickness, lack of working power, lack of motivation, getting excluded from the working market, a decrease in social status, and their fall in self-esteem (Aaron, 2010; Raaij, 2014, 2016).

Pension plans are also considered to be problematic to understand, dependent on a lot of political, societal, and thus uncertain variables (Van Rooij, M., A. Lusardi, 2011; Kadoya and Khan, 2019). Retirement is an event with profound personal, social, and economic consequences (Aaron, 2010). Saving for old age allows individuals to transfer any excess income gained of their earning years to the corresponding dry times of old age (Rusconi, 2009). People who plan for retirement do accumulate more retirement savings. However, Individuals often have limited financial knowledge and know little about the characteristics of their public and occupational pension plans or how much to expect in retirement benefits (Holzmann Edward, 2006). Financial literacy in shaping retirement planning plays an important role (Lusardi and Mitchell, 2011). Many people are woefully unaware of basic economics and finance, shortfalls that may lead them to make severe and often irreversible mistakes. Kadoya and Khan (2016) indicated that the demographic factors of gender, age, and education; the socio-economic factors of income and occupation; and the psychological factor of perceptions of the future significantly affect the level of financial literacy. Individuals' financial literacy levels are different, and several factors affect it.

According to Raaij (2016) and Kadoya and Khan (2019), socio, economic, demographic factors impact pension awareness, pension knowledge, expected lifestyle, and pension saving. Awareness and motivation are the starting points for pension knowledge and pension saving. Motivation, knowledge, individual's behavior to pension planning, self-control and self-regulation, time preference, procrastination, and expectations about their future value of pension plans, all these combined make up the pension knowledge and impact the decision. Many people have insufficient pension knowledge. Knowledge should be consecutive steps such as knowing the pension income, whether this income sufficient after retirement and if not sufficient how to increase retirement income. The following step is life cycle events like getting a job, buying a house, having a kid, grown-up, getting fired, getting divorced or moving, become the prerequisite for pension saving. Life changes continuously; people make changes in their financial plan; these actions will define what their pension saving would be like (Figure1).

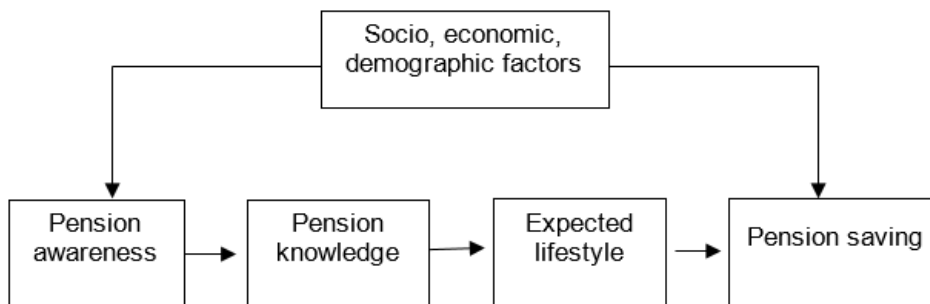


Figure 1. Relationships between awareness, pension knowledge (literacy), expected lifestyle and pension saving

Source: (based on the Van Raaij, 2016, Kadoya and Khan, 2016)

2.2. Study Area

The survey was conducted before the amendment for Mongolian law on Pension and Benefits provided by the Social Insurance Fund in 2017 enforced.

The primary data selected from the Socio-economic Baseline Study of herder Households. Data collected with a nationwide survey between July to August in 2017 by Mongolian Marketing Consulting Group funded by Green gold and Animal health project of Swiss Development Cooperation. The study applied two-stage stratified sampling. A number of animals and herder households at *soum* (the second administration unit of Mongolia (district)) and the *bag* level were taken from the annual animal census-2015 of National Statistical Office Mongolia. Herder households are nomadic; thus, we excluded the 330 *soums* and 21 *aimag* (The first level of the administrative unit of Mongolia (province)) centers. The first stage or *soum* sampling considered the representation of every zone, the number of herder households (1-499 and 500 more), and distance from the *aimag* centers (1-199km and 200km more). According to these indicators, every *soum* (total 309 *soums*) has divided into stratum. One *soum* per stratum was selected: *Khangai region-Arkhantai*

aimag-Ikhtamir, Battsengel, Tsakhir *soum*, Bayankhongor *aimag*- Bayanlig, Bayantsagaan *soum*, Khuvsgul *aimag*- Alag-Erdene, Arbulag *soum*; Uvurkhangai *aimag*-Bogd *soum*; *Central region*- Tuv *aimag*- Undurshireet, Buren, Delgerkhaan *soum*, Umnugobi *aimag*-Mandal-Ovoo *soum*; *Western region*- Zavkhan *aimag*-Erdenekhairkhan *soum*, Khovd- Chandmani *soum*; *Eastern region*- Dornod *aimag*-Tsagaan-Ovoo *soum*. Thus, 15 *soums* of 9 *aimags* have selected as the survey respondents. We determined the number of survey respondent units from the chosen *soums* by equal distribution method ($350:15=23$). As a result, we involved 23-24 households per selected *soum*. Herder households were selected from 10 different livestock groups numbers: up to 10, 11-30, 31-50, 51-100, 101-200, 201-500, 501-999, 1000-1499, 1500-2000 and 2000 above at each *soum*. Finally, a total of 350 herder households were involved in surveying. One herder household represented 410 herder households on average (Figure 2).

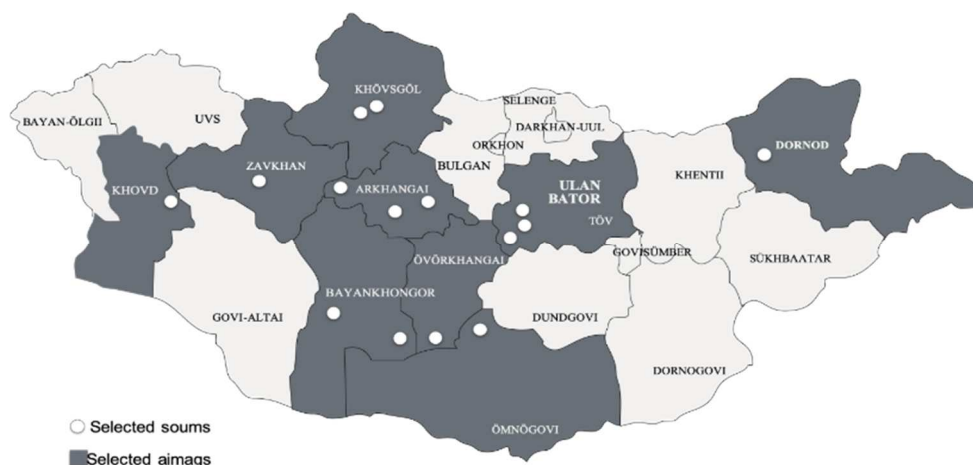


Figure 2. Location of the study area

2.3. Indicator Measurement Design

In order to evaluate the herders' pension knowledge, motivation, and attitude to participation to the pension and identify factors the study based on Raaij (2014, 2016) and also draws on other relevant studies (Van Rooij, Lusardi and Alessie, 2009; Aaron, 2010; Lusardi and Mitchell, 2011; Van Rooij, M., A. Lusardi, 2011). Based on the relationship between financial behaviour, financial literacy and pension planning, and data availability, we identified ten indicators in total (Table 1). Our expectation of the variable age is positive for the social insurance fee payment. In the model, we concerned to examine how this coverage rate related to herder's willingness to pay the social insurance fee. Our expectation of this variable is positive. Respondents questioned how many times they were present *bag* (Smallest administration unit (subdistrict) of Mongolia) meeting. *Bag* meeting explores information, awareness for the fellow herders; therefore, expectation from this variable is herders with more motivation and knowledge would pay more rather than herders with less information.

Table 1. Operationalization and expected effects of explanatory variables

Variables	Expected impact	Implication of variables	Scholarly references
<i>Demographic and social variables</i>			
Sex	+	Sex of respondent. Differences between sex in financial literacy are statistically significant.	(Raaij, 2014) (Arellano, Cámara and Tuesta, 2018)
Age	+	Age of respondent. Pension planning depends on age.	(Raaij, 2014) (Caroline E. van Dulleman and Jeanne G. M. de Bruijn, 2015)
Education level	+	Education as a measure of financial literacy. From illiterate =0 to university level=6.	(Lusardi and Mitchell, 2011) (Van Rooij, Lusardi and Alessie, 2009) (Dimitris Christelis <i>et al.</i> , 2010), (Raaij, 2016)
Social-Insurance coverage	+	Herders who paid Social insurance fees in some years. Most of the herders caught the opportunity to recompensate the Social insurance fees in 2013.	(Madrian and Shea, 2001)
Bag meeting	+	Official source of information and knowledge in the first level of the administrative unit of Mongolia. The average frequency of <i>bag</i> meetings in the countryside is 4.	(Lusardi, 2004), (Clark and d'Ambrosio, 2008), (Bernheim and Garrett, 2003), (Raaij, 2016)
	-		(Duflo and Saez, 2003) (Clark and d'Ambrosio, 2008)
<i>Economic variables</i>			
Livestock	+	The number of registered livestock at the end of 2016, Cattle, horses, camel, sheep, and goats are the main stock types.	(Raaij, 2016)
Total revenue	+	Total household revenue includes all different income sources.	(Raaij, 2016)
Total cost	-	Total annual household cost. If household cost is higher than the income, they cannot participate in Social insurance.	
Loan amount	-	Received a loan in 2016. Households can borrow money from friends and relatives and get credit from banks and non-banking financial institutions.	(Lusardi and Tufano, 2009)
Size of savings	+	Household saving amount in a bank in 2016.	(Bernheim and Garrett, 2003)

Source: Authors.

Five variables selected to show the economic capability of herders. The number of livestock, total income, savings are expected to have a positive relationship with the dependent variable, while total cost and loan would have a negative correlation. Since, social insurance payment and credit are cost items of herders, that are competitive with consumption cost. Therefore, herders with higher expenditure would postpone paying a voluntary social insurance fee. The number of livestock is an approximate measure of herders' livelihood. In this connection, there was multicollinearity founded between the number of livestock and the total income of herder household. After the test evaluation, the variable- total income was included in the model.

2.4. Model Specification and Test

Using the dataset described in the next section, the following relationship is estimated:

$$Y_i = f(A_i, B_i) + \varepsilon_i, \text{ for } i = 1, \dots, 350 \quad (1)$$

Where:

Y_i = Social insurance fee paid by a herder i voluntarily, by money term;

- A_i = Set demographic and social variables of herder i ;
- B_i = Set of economic variables for herder i ;
- ε_i = Error term with standard properties

The dependent variable is a continuous variable. Herders are as a voluntary contributor to the Social insurance fund; their social insurance paid an amount, and paying frequencies are different. A regression model estimated using SPSS through standard econometrics procedures to determine the above model (Andy, 2005; Marno, 2008)

2.5. Descriptive Statistics

Table 2 provides the descriptive statistics of the variables selected for the model, and the texts the table explained the current state of each explanatory variable.

The amount of paid pension fees varies over the sample. Consequently, we evaluated the relationship between the amount paid by the herders (as a financial behavioral variable) and other explanatory variables representing their demographic, social, and economic value.

Herders paid an average of 8 USD, which is far lower than the maximum amount paid by some herders (Table 2). According to the survey data, only two herders paid more than 300 thousand MNT or 120 USD, five herders paid between 100-200 thousand MNT or 40-76 USD, and more than 90 percent of interviewed herders paid less than 100 thousand MNT or 40 USD.

Table 2. Descriptive statistics of the dependent and independent variables

	Unit	N	Minimum	Maximum	Mean	Std. Deviation
Y	USD	350	0	126.65	8.38	14.27
<i>A_i: Demographic and social variables</i>						
Sex	1 or 0	350	0	1	0.93	0.248
Age	Integer	350	21	82	44.79	12.155
Education level	1 to 6	350	1	6	2.98	1.049
Social Insurance coverage	Y/N	350	0	1	0.42	0.495
Bag meeting	Times	350	0	7	1.79	1.446
<i>B_i: Economic variables</i>						
Livestock	Heads	350	6	3059	501.59	492.614
Total revenue	USD	350	37.99	56 504.56	5125.72	6021.16
Total cost	USD	350	100.68	20 096.25	2039.34	2361.72
Loan amount	USD	288	0.00	11 398.18	1642.51	1381.20
Size of savings	USD	149	0.00	28 495.44	1425.95	3382.41

Source: Authors.

2.5.1. Demographic and Social Variables

Almost all (93%) respondents were male; therefore, variable Sex dropped out from the model, which has not shown the gender differentiation. The oldest respondent was 82 years old, and the youngest 21 years old. In the estimation, we exclude pensioned people who are older than 60 years old for males, 55 years old for females. Variable *education* coded 1 refers to no-education, and 6 is University degree. The average education level of respondents was secondary education (6-9 years of schooling). Variable *social insurance coverage* is a dummy variable that indicated whether or not a respondent has social insurance coverage in any form. Hence, 42 percent of the respondent has social insurance coverage, whereas 27 percent of participants paid the social insurance fee.

2.5.2. Economic variables

The participating herders in the research were chosen using stratified sampling, so the herder with the fewest livestock has 6, whereas the herder with the most livestock has 3059. An average herder household has 500 head of livestock. When calculating their income, we included in the questionnaire other types of income sources. The average annual revenue of a herder household is 5125 USD, while the poorest herder household has an income of 38 USD. As poor herder households, they are unable to pay for social insurance. They consume some basics food like meat and milk products from their farm free of charge. A herder household's expenditure varies depending on their number of livestock and other factors, the lowest cost is 100 USD, and the average is 2040 USD. At the time of the questionnaire, 288 households had

taken loans, and the average amount of loans was 1600 USD. The number of families with savings was 149.

3. Results

The model presented in the previous section explains the dependent variable from several explanatory variables at herders' level. Estimation techniques applied before in similar studies include logit regression and the analytical hierarchy logistic model, where the dependent variable is a choice variable. In our case, our dependent variable is a continues variable; therefore, a linear regression model selected as more suitable for our study after testing the functional form and distribution of the dataset (Andy, 2005; Cameron, 2009).

In table 3 clarifies that, in terms of age, people getting older concerns more about a pension — aged herders' participation in the Social insurance payment higher than the younger herders.

Table 3. Regression results

Variables	Unstandardized Coefficients		Standardized Coefficients	t statistics
	B	Std. Error	Beta	
<i>(Y: Payment of Social Insurance Fee)</i>				
<i>A_j: Demographic and social variables</i>				
Age			.258	2.604**
Education level	5.888	2.164	.372	2.721**
Social insurance coverage	34.542	7.835	.448	4.409**
Bag meeting	-.283	2.215	-.014	-.128
<i>B_i: Economic variables</i>				
Total revenue	.170	.204	.093	.837
Total cost	.483	.530	.099	.911
Loan amount	-18.018	9.466	-.209	-1.903*
Size of savings	-.442	.692	-.051	-.639
R Square				.499
F statistics (.000)				14.962
Durbin-Watson				2.105

Notes: *, ** indicate significant at 5%, and 1% level respectively.

Source: Authors.

Educated people understand more about the importance of future investment; therefore, they willing to pay more to their social insurance fee as expected. People who have received previous opportunities to recompensate their social insurance payments have more understanding and desire to pay the social insurance fee. Loan as a competitive consumption or investment for herders, people who have more credit, would have less chance to pay higher social insurance payments.

Bag meetings, households' total income, and households' total cost, savings are contrary to the expectations not significant.

4. Discussion

Pension planning is vital for herder's current consumption cost and future income source. An essential contribution of our study on anti-poverty policy study is a quantitative analysis of the Mongolian herders' participation in pension. We found that herders have insufficient knowledge and understanding of retirement. It can be seen from the percentage of people involved in pension insurance and that 90 percent of them pay the lowest amount fee. Moreover, herders' behavior to participation in the pension is less than 30 percent in Mongolia. The result is similar to Raaij's (2016) research where people pay too much attention to their career and family, thus, and they do not pay enough attention to their life after retirement.

Age is a key variable for participation in the old age pension Raaij (2014, 2016). Worrying about their retirement income is not something for young people. Our research correlates with the notion that people tend to think about their future and look to make changes in their financial state after they cross the 40-year-old mark.

According to the research of Van Rooij, M., A. Lusardi (2011), financial literacy affects financial decision-making. One of the most important financial decisions in pension saving. Our results do not match with the study of Van Rooij, M., A. Lusardi (2011) that in terms of financial education, age correlates with an inverted U-shaped pattern, meaning that young and older adults have inadequate financial training. A possible explanation would be because herders start work from the early age of 16 and after becoming herders they do not have to gain further systematic knowledge.

The next question is why people fail to plan; planning requires making calculations, many of which are facilitated by financial literacy. Lusardi and Tufano (2009) found that low literacy individuals are more likely to carry high-cost debt. Herders facing financial difficulties get a loan (mainly for consumption) from the financial institutions, i.e., credit is a competitive situation factor for pension fees. Our research results show those who have higher levels of education tend to have pension while those with loans fell less likely to have a pension. It is essential to develop various channels to increase herders' alternative income sources. Within the scope of the literature review we researched, in terms of social insurance coverage there was no research done on whether repaying the insurance fee had positive or negative effects on receiving pension in the future. Since pension saving is more of an individual's responsibility, there is evidence showing that if voluntary social insurance changes to mandatory, then pension coverage can be increased up to 90 percent (Raaij, 2016).

The variable of *bag* meeting was different from our expectations. Herders officially get information and knowledge from *bag* meetings. Therefore, we expect that if participation in *bag* meetings were to rise, the number of people covered by pension would increase. The reason that our results from the research came insignificant maybe because *bag* meeting participation was low, and providing information related to retirement is insufficient. Research results Clark and d'Ambrosio (2008) show that even if there were seminars that provided information, there was not that much

progress. In response to the workshops, the proportion of participants who changed either of their retirement goals is relatively small.

5. Conclusion

Herders' livelihoods and their income is a crucial issue of development researchers as the livestock sector is a dominant economic sector of Mongolia. Pension is one of the internationally accepted terms that increase people's income and eradicates poverty. However, herders are a voluntary contributor to the social insurance fund. Herders' voluntary participation in pension needs to improve. While according to international examples, the retirement age is rising (Raaij, 2016), the retirement age for herders in Mongolia has been decreased by five years. Following this, they need to receive information on necessary financing and the benefits of pension savings from a young age. Therefore, policy-makers and government agencies pay attention to educate herders should be one of the tools to reduce herder's poverty. Giving awareness will extend the range of herders' pension participation, increase cash income in the long run, and reduce rural poverty. Thus, improving herders' knowledge and awareness on a pension is essential to set good behavior concerning pension participation.

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MANAGERIAL ACCOUNTING – A TOOL FOR MEASURING AND PILOTING THE OVERALL PERFORMANCE

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Abstract: *Successful market preservation of an economic entity can only be achieved through effective and well-founded management. Managerial accounting contributes to the way in which performance can be measured within economic entities, but the notion of performance has different meanings, generally refers to the achievement of objectives. Viewed from the financial-accounting perspective, it differs according to the categories of users who want information about it, from the overall performance, financial performance or profitability of economic entities. Any definition we attribute to the notion of performance includes a comparison of the results with the proposed goals, "create value". A performance management for an economic entity must include a strategic approach so as to enable performance analysis at an integrated level - from the ability to achieve performance to its assessment within that entity. The purpose of this article is to highlight the importance of managerial accounting in order to measure and pilot the performance towards a sustainable development within an economic entity. The article analyzes the role of managerial accounting from the notion of concept to performance analysis tools within an economic entity in order to develop and achieve the proposed objectives. Therefore, taking into consideration the market conditions, the efficiency of any economic entity depends essentially on the quality of management to understand and apply modern management principles, methods and techniques. Quality management is a vital condition for economic entities to gain competitive advantage and resist competition. Strategic management accounting assigns strategic management tools from the cost of products to analysis of the competitors, customer analysis pursuing cost strategy, assets, value chain analysis and brand. With strategic management accounting, we can track managerial accounting data that provides information about both the internal environment and the external environment, so we can monitor the activity of an economic entity, which allows us to predict a business strategy. Taking into consideration the theme of the paper, the research is mainly qualitative, based on literature review and using descriptive and comparative methods.*

Keywords: *managerial accounting; performance; sustainable development; strategic managerial accounting.*

JEL Classification: *M41.*

1. Introduction

"Managing an entity means, on the one hand, knowing the current activity and intervening with operative decisions in its direction, and on the other hand, the prefiguration of the future evolution and the elaboration of forecasts that will outline the directions of development in perspective (Briciu, 2006). "Today most policy decisions contain a scientific and technological dimension. Therefore, they have to be based on transparent and responsible opinions, based on ethical research. In this context, it is necessary to strengthen the ethical bases of scientific and technological research, to assess the risks inherent to progress and to manage it responsibly in the light of the lessons of history" (Niculescu, 2011). "Gradually, the environment forced the enterprise to act from marketing, the growth of waist pushed organizations to decentralize autonomy, the rarity of resources required rationality in use, and the consolidation of information needed monetary translation" (Albu and Albu, 2003).

2. Research Methodology

The research consists of four parts: the literature review; the development of theories; the theories testing and the reflecting and integrating of notions. Considering the topic we approached, the research aimed at a theoretical approach, presenting a qualitative synthesis of specialized literature, starting from the notion of strategic management to a general approach of cost management. Due to the fact that a qualitative analysis could limit the validation of the research results we also chose a quantitative approach in order to make a comparison between the managerial accounting and the strategic management accounting, as well as the presentation of the managerial structure on the example of the lighting industry.

3. Literature Review

Strategic management is defined in the literature according to the strategic objectives of each economic entity (Karst, 1998), taking into account the steps taken in this respect and the allocated resources to achieve these objectives (Chalender, 1962), and involves planning the objectives of an economic entity and the environment in which it operates, with a significant controlling influence (Mair and Moore, 1993). Due to the growing demands of customers on the quality-functionality-price ratio, economic entities have had to take measures to adapt to the new conditions, and especially to be profitable. In this situation, cost management is imperative when it comes to launching new products to meet customer requirements through long - term anticipation of products, processes and resources (Cooper and Slagmulder, 1998). The term of strategic cost management must cover a very wide area that allows modeling the future of an economic entity (Hilton et al., 2001). SCM (Strategic Cost Management) allows economic entities to identify the causes of costs, cost drivers, and identifying them to interfere with them in terms of value creation and productivity growth. Thus, customers can be offered competitive

products because they have accurate cost information and relevant to their management. The SMA (Strategic Management Accounting) approach makes progress from the monetary notion to the notion of business (Mike and Yi, 2009). With the emergence of strategic management accounting SMA, we also meet the concept of total quality. This concept ensures continuous improvement of product quality and efficiency by lowering costs (Khan and Jain, 2007). The strategic position is defined by market positioning: on the one hand cost reduction and quality improvement, and on the other hand the search for opportunities offered by the market (Miles and Snow, 1978). The value chain represents the activities that economic entities carry out in order to gain competitive advantages (Porter, 1985), being the main way to assess the competitive position of an economic entity through strategic influence of activities and cost drivers which contributes to increasing the competitive advantage (Lee, 2001). Whatever the performance definitions, it must include elements such as: value by achieving the objectives set; the results expressed according to its nature, the achievement of the proposed objectives and the comparison of the results with the proposed references or the competition (Mitu and Mitu, 2007). Business performance management can be viewed both as a strategic approach and as an integrated approach, delivering superior team-level outcomes at individual level. In order to measure performance, we need to move from the possibilities of achieving global performance to achieving a performance system to evaluate it (Nobes and Parker, 2004). We cannot analyze the performance of an economic entity solely from the point of view of operating result or increase of net book value because profit is the result of several events that led to its obtaining. Jianu (2007) appreciates that the one who achieves his goals is performing and states that the term performance must "be reserved for describing the evolution of the results over a period of time deemed to be a long period of time. In the opinion of the authors Albu and Albu (2005), performance is all that leads to the achievement of strategic objectives in an organization and leads to the creation of wealth and value for it. Niculescu (2003) defines performance by productivity and states that "an enterprise is theoretically performing if it is both productive and effective". So we can conclude that performance is a very complex notion that should not be confused with the indicators describing it, the profitability, the efficiency and the effectiveness, because the financial profitability is one of the main indicators of the performance analysis, and it is the fixed objectives; the efficiency implies the maximization of the obtained results with a given amount of resources, the effectiveness implies that the results of the arbitrator in the achievement of the performance , and cost control contributes to the improvement of decision-making through a strategic piloting.

4. Tools for Measuring the Performance of Economic Entities and Strategic Managerial Accounting

As described in section 3, quality management is a vital condition for economic entities to gain competitive advantage and to withstand the competitive mechanism. The previous statement is all the more important as in recent years it has been shown that the main factor of bankruptcy of a company is the incompetence of managers and the mistakes of management caused by errors in decision making

(Homormonea and Socea, 2011). The main feature of strategic management is to influence the environment in which the economic entity operates and to control long-term development by managing benefits using opportunities that occur in the external environment. Strategic management leads to increased sales, profitability and productivity of an economic entity (Robinson, 1982), helping to understand the competitive strategy and the relationship between performance and reward (Thompson, 1993). In Figure 1 we present a model of strategic planning that defines the mission, objectives, analysis of the external environment, analysis of the internal environment, strategic variants and defining the chosen strategy of an economic entity, because according to the literature only through rigorous planning can be chosen a suitable variant for implementing a concrete strategy for managing activities and choosing how the proposed strategy can achieve its objectives. There are different classifications of strategies, but we think that regardless of the approach, the management of an economic entity needs to adapt to the dynamics of the external environment.



Figure 1. Strategic management process
Source: Wheelen and Hunger (2002)

Strategic management is defined in the literature according to the strategic objectives of each economic entity (Karst, 1998) taking into account the steps taken in this respect and the allocated resources to achieve these goals (Chalender, 1962). It involves planning the goals of an economic entity and the environment in which it operates, with a significant controlling influence (Mair and Moore, 1993).

5. Strategic Management Analysis - Costs between Traditional Management and Strategic Management

Given the changes in managerial accounting in the last period of the 20th century, as we have shown in the previous analysis of this paper, in practice it has been demonstrated that in the case of traditional methods, costs are distributed almost randomly, which is why we cannot have a control too accurately, and economic entities do not correctly perceive their dynamics. In fact, maintaining a market position of economic entities depends on several factors, not just on cost management. First of all, economic entities need to be concerned about meeting their customers' needs and increasing their productivity. There is a distinction between traditional management and cost management and according to McNair (2000):

- Traditional cost management focuses on the internal environment, while strategic cost management analyzes the external environment;
- in the case of traditional management the main objective is to direct and solve internal problems, instead the strategic management pursues the same objectives, but differs according to the chosen strategy;
- the concept of cost driver in the traditional case is defined by volume, and in the case of strategic management it is approached according to structure, execution, being able to define each value-bearing activity;
- in the case of traditional cost-cutting management, it is addressed through responsibility centers, and in the case of strategic cost management, each activity is regulated;
- contrary to traditional cost management where they have a major impact, in the case of strategic management the main concern becomes the cost-value-income ratio;
- the impact of cost management is studied for traditional methods only in the financial accounting field, while in the case of strategic management, the coverage area extends to other areas such as economics and marketing;
- from the point of view of accountability, in the first case we talk about "adept - reactive", while strategic management turns us into "leader-proactive".

Due to the growing demands of customers on the quality-functionality-price ratio, economic entities have had to take measures to adapt to the new conditions, and especially to be profitable. In this situation, cost management is imperative when it comes to launching new products to meet customer requirements through long-term anticipation of products, processes and resources (Cooper and Slagmulder, 1998). The term of strategic cost management must cover a very wide area that will allow shaping the future of an economic entity (Hilton et al. 2001). The SCM allows economic entities to identify the causes of costs, cost drivers, and identifying them to intervene to increase value and increase productivity. This way customers will be able to offer competitive products because they have accurate cost information and relevant to their management. Strategic cost management is based on the following principle (Berliner and Brimson, 1988):

- understanding the causes that led to the costs, but also the income structure of an economic entity;
- identifying all activities and keeping only those that lead to a competitive advantage;
- reducing complexity of functionality;
- increasing economic efficiency by improving the cost structure;
- using strategies to manage costs;
- improving the skills of the staff;
- the effect of employees' participation in decision-making.

6. Strategic Managerial Accounting - a Tool for Piloting the Performance of Economic Entities

With strategic management accounting, we can track data from managerial accounting that provides information about both the internal environment and the external environment, so we can monitor the activity of an economic entity, which allows us to predict a business strategy. We have not found a universally valid SMA definition, but one of its definitions states that SMA has more financial data referring to the following: value analysis, market strategic analysis and cost induction analysis (Shnak and Govindarajan, 1993).

Strategic managerial accounting analyzes mainly cost information as it precedes managerial accounting, which it will continuously integrate with the other processes according to figure 2, where there are presented the processes of strategic management starting with its definition until the control in the implementation of the strategy and tracking results with the strategic goals of an economic entity.

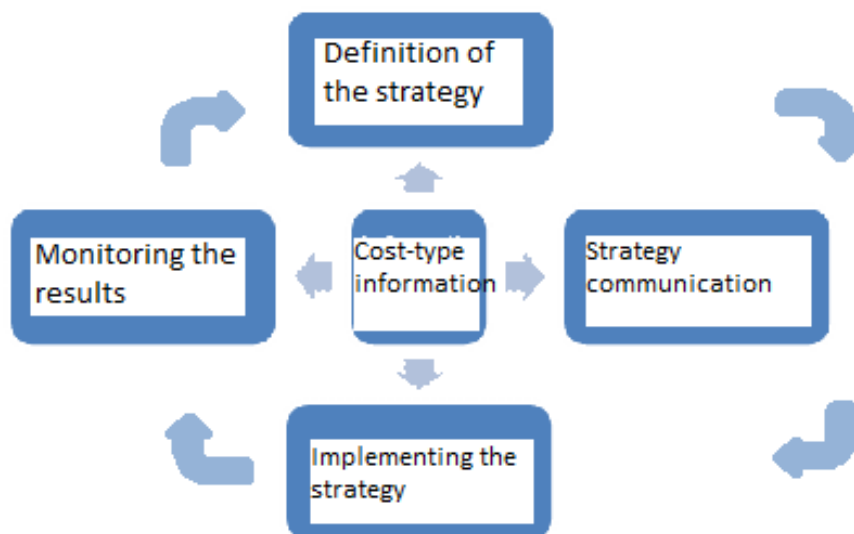


Figure 2. The position of cost-type information in strategic management

Source: Systematization after Topor, 2014

Depending on the cost information in the financial analysis, we can evaluate the existing strategy, and it will be transmitted in the form of the information in the accounting reports, its implementation and the performance-based monitoring based on the cost information

SMA has a role to play in ensuring competitiveness by collecting accounting information from the entity's external environment, information on the basis of which costs can be reduced by developed strategies. From an operational point of view, the traditional managerial accounting functions are similar to the strategic management accounting functions, but only in the case of strategic management accounting they are adapted to the external environment. The SMA approach makes progress from the monetary notion to the notion of business (Mike and Yi, 2009). In the following we will try to make a comparison between managerial accounting and SMA, as shown in Table 1:

Table 1. Comparison between managerial accounting and SMA

Traditional accounting	SMA
Information about the past	Future projections by internal factors analysis
It analyzes the entity's internal environment	Analyzes entity-external factors
introspection	Demonstration
Analyzes production	Competitiveness analysis
It focuses on the present	Think of future actions
Experience	Decisive
Planning	Unexpected actions
Based on existing data	It also points to other information
It is based on the existing information system	It is based on a wider spectrum of information
Based on achievements	Independently, relying on a wider spectrum

Source: Systematization after Wilson and Chua, (1993)

With the emergence of SMA strategic management accounting, we also meet the concept of total quality, this concept ensures continuous improvement of product quality and efficiency by lowering costs (Khan and Jain, (2007).

SMA assigns strategic monitoring tools from product attribution to competitor analysis, customer analysis through financial statements, cost strategy, assets, value chain analysis, brand, ABC. Next we will present the strategic management accounting by analyzing its three positions: the strategic position; cost drivers and value chain analysis, according to table 2:

Table 2. Presentation of SMA according to its positions

The notion of analysis	Definition	Characteristics	Methods that integrate information
STRATEGIC POSITION	-The strategic position is defined by market positioning: on the one hand cost reduction and quality improvement, and on the other hand the search for opportunities offered by the market (Miles and Snow, 1978); -the choice of leadership in the cost area by economic entities; -costs are induced by structural and structural factors; -NPV net present value method, and finding a way to rationally manage the decisions made.	- due to globalization, it is unlikely that market placement strategies as a cost-cutting leader can be implemented as quickly as possible; -in order to obtain a competitive advantage, the <i>price-quality-functionality</i> trinoma must be targeted.	Target Cost Method; Value engineering Kaizen Costing JIT A B C Balanced Scorecard BS
COST DRIVERS	Activities are resource consumers that generate costs, and the factors that influence cost behavior are called cost drivers.	The main feature of cost drivers is customer demand, which group the cost drivers into three categories: structural cost drivers; organizational cost drivers; and activities cost drivers. Cost drivers are determined according to the specifics of the economic entities.	
VALUE CHAIN ANALYSIS	The value chain represents the activities that economic entities carry out in order to gain competitive advantages (Porter, 1985). It represents the main way to assess the competitive position of an economic entity through strategic influence of the activities and cost drivers (Lee,	Support activities: -organization; -HR; -technology; - procurement. Primary Activities: -logistics (material handling, delivery); -Operations (manufacturing, packaging);	Target Cost Method; BS CBA BSC EVA

The notion of analysis	Definition	Characteristics	Methods that integrate information
	2001), which contributes to increasing the competitive advantage	Logistics (processing, orders, transport); Marketing (product, price, promotion, distribution, location); Services (customer service, repairs) (Porter, 1985)	

Source: own systematization

7. Structuring Managerial Accounting within Economic Entities

Managerial accounting, unlike its role prior to the 18th century industrial accounting, currently aims at achieving the goals of an economic entity by reporting financial and non-financial information to managers, information that helps implement strategies (Horngren, Datar and Foster, 2006).

Business diversity at national and international level requires the development of decision-making, and the main source of information for this is managerial accounting. The financial accounting information is incomplete in terms of knowledge of production costs, and in order to supplement this information, accountancy is a "soft" account, which is adaptable to all units, whatever their size, activity and structure (Matiş and Pop, 2007).

Starting with the 20th century, research has been carried out in the field of formation and allocation of indirect costs on the cost object, according to Romanian experts. Oprea (1980) states the cost calculation is based on the "value consumption" theory. If we refer to the legislative environment in our country, the Accounting Law no.82 of 1991, has been modified in the sense that the organization of the management accounting is no longer mandatory, only mentioning that "companies, companies/ companies national governments, autonomous administrations, national research and development institutions, cooperative societies and other legal entities have the obligation to organize and conduct financial accounting according to the law.

The obligation to organize management accounting with the adaptation to the entity specificity was valid until 2011, since then, the accounting records have a legislative reference for internal organization within economic entities. Law no.121/2015 on the approval of O.U.G. no. 79/2014 comes with modifications and completions to the Accounting Law 82/1991 and specifies according to art.10 paragraph (2) "Accounting is organized and is usually conducted in distinct compartments, led by the economic director, the accountant- chief or other person empowered to perform this function. These people must have superior economic studies. The person empowered to perform the function of chief executive officer or chief accountant is any person registered under the law who has superior economic background and has authority to manage the entity's accounting. "The activities of managerial accounting vary

according to each individual economic entity the management of managerial accounting being influenced by several factors (Ebbeken, Possler and Ristea, 2000). In Romania, managerial accounting was conducted in a dualist system and integrated according to the French model, financial accounting and managerial accounting was supported by the 9th class of accounts, "Management accounts", in the financial accounting the expenditures on production are highlighted in class 6, "The management of dual-account management may meet certain objectives but has its limits, so we will focus our attention on the integrated accounting system, separate from the financial accounting system, using only class 9 accounts, taking the data in Account Classes 6 and 7, management accounting reflects financial accounting data.

8. Conclusions

Successful market preservation of an economic entity can only be achieved through effective and well-founded management. We cannot analyze the performance of an economic entity only from the point of view of "operating result" or "increase of net book value ", because profit is the result of several events that led to it being obtained. With strategic management accounting, we can track managerial accounting data that provides information about both the internal environment and the external environment, so we can monitor the activity of an economic entity, which allows us to predict a business strategy. Quality management is a vital condition for the economic entities to gain competitive advantages and to withstand the competitive mechanism. With the emergence of SMA, we also meet the concept of total quality, this concept ensures continuous improvement of the quality of products and their efficiency through cost reduction. SMA assigns strategic management tools from the cost of products to competitors analysis, customer analysis through financial situations, pursuing cost strategy, assets, value chain analysis, brand, ABC. The organization of dual-account accounting can meet certain objectives, but it has its limits, so we'll focus on an integrated accounting system. Successful market preservation of an economic entity can only be achieved through effective and well-founded management. We cannot analyze the performance of an economic entity only from the point of view of "operating result" or "increase of net book value ", because profit is the result of several events that led to it being obtained.

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EMPIRICAL EXAMINATION OF THE ROLE OF FACTORS AFFECTING THE VALUE OF FIRMS, IN RESPECT OF 8 YEARS

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Abstract: *The goal of writing this article is to continue my previous empirical research (Kiss 2015). In the article written in 2015, I dealt with the question, what factors affect the value of the firm? Looking at the entire period (2004 through 2011) I found that all value creators had a significant impact on the dependent variable, on the value of the firm. Earnings before interest and taxes (EBIT), reinvestment, invested capital, return on invested capital, profit margin, sales growth rate had a positive impact on the value of the firm, while tax rate and return on assets at market value (MROA), had a negative impact. In this research I am seeking an answer if any changes occurred, when analysing the role of factors affecting the value of a business, in these factors and their importance, in the period under review. In my paper I present the primary objective of a firm, its possible approaches, while I shall also deal with the concept of dual value creation. Then I outline the dimensions of value, by reviewing the relationship of consumers' value and shareholder value. Shareholder value is a relevant value category concerning the article, therefore I address its detailed characterization and firm theory background. The structure of the study is the following. First I review the value creation process based on literature from the most prominent academic authors. In the next part I describe the primary objective of a firm, then the various dimensions of value and the firm theory background of shareholder value. Then I move to the value creators, which I am going to use in the empirical study. Finally I introduce the research, and in the last part I formulate my conclusions.*

Keywords: *value creation; value chain; firm valuation; global financial crisis.*

JEL Classification: G32.

1. Value creation of the firm

“The process of value creation is the procurement, management and use of resources with the purpose of creating value for the consumer.” (Chikán – Demeter 2006: 3.) This definition embraces the concept of value creation from the side of management literature, principally the aspects of production management, marketing and business economics, that is, defines the firm as an organisation, which generates value during its operation, and the primary objective of this operation is to satisfy customer demand. For the approach of this study, this has to be realised in a way that in the same time the shareholder value of the firm also increases, that is, besides customer value, shareholder value has to be created as well. This perception of value creation is well reflected, among others, in his work on dual value creation of Chikán (2003).

The value chain theory of Porter (1998) focusses on value creation. In his opinion all firms carry out activities in order to create value. The individual activities each create value themselves, but their contact points are also important. Porter (1998) emphasizes that competitive advantage often comes from the connections between activities, and not only from the activities alone. Firms using the value chain as a tool for analysis, can be able to establish a competitive advantage by mapping and developing their activities.

In order to realise a return over the cost of capital, the firm has to establish a competitive advantage, and must be able to maintain it. Basic capabilities provide the competitive advantage of the firm. A basic capability is a firm resource, which can be moved by the management at any time. (Prahalad – Hamel 1990: 83-84.)

Once the firm generates a value through value creation processes, it is important to clarify the manifestation, concept, and the closely related dimension of this value. Just like value creation, the concept of value also appears in several disciplines, focussing on different projections of the value. This is why I consider it important to deal with the dimension of value.

Chikán (2003) considers the condition of successful operation of a firm is the realisation of dual value creation. During dual value creation, value is generated for the customers, and value is generated for the shareholders of the firm, thus satisfying demand and being profitable, that is, customers' and shareholders' dimension, is achieved simultaneously.

By the concept of shareholder value, the primary objective of a firm is to maximize shareholder return, while obeying laws. This does not mean maximising profit in short-term, but maximising value in the long run. Rappaport (1998) further emphasises, that shareholder value does not exist without customers' value.

Value is primarily affected by objective factors, but also impacted by subjective elements. The assessing person, the external circumstances, the economic climate, the decision situations. Pratt (1992: 11-17.), Bélyácz (1995), (2011), Bélyácz – Kovács (2010), Ulbert (1997) differentiate between value categories and therewith, value perception. From the aspect of this article, for the firm value, the shareholder value category can be considered relevant.

2. Firm theory background of maximising shareholder value

Firm theory background of maximising shareholder value goes back to traditional economics, then re-appears in neoclassic economics, whose firm theory has been dominant in economics for a long time. In standard microeconomics the firm is a legal entity, the owner and manager is the same person, the ownership and management functions are combined in one decision-making person. The next milestone is the work of Coase (1937), whose study can be considered as the basis for contracting firms' theories. Coase (1937) says the price mechanism, considered as the only coordination mechanism in neo-classic economics, has to be supplemented, it is not sufficient by itself, for decision-making. The studies published in the field of firm finances, in the fifties and sixties, serving as the financial basis for the theory, have had a significant impact on the evolution of the shareholder value perspective. These were the portfolio theory of Markowitz (1952), the theory of

Modigliani and Miller (1958), (1961), (1963) on capital structure and dividend policy, the capital asset pricing model of Sharpe (1964) and Lintner (1965).

The next theory in time was the principal-agent problem, which particularly supports maximising shareholder value. The principal-agent problem is not new in economics, since the experts of the subject Jensen and Meckling (1976) start their study with a 200 year old quotation from Adam Smith, which describes this relationship.

Review of the theoretical background of maximising shareholder value, is followed by presenting another opinion, the stakeholder theory.

The concept of shareholder value states, that the primary objective of a firm is to maximize shareholder return, while obeying laws. In management literature, an alternative to this theory was born, the stakeholder theory, which sets higher moral standards than laws, and guarantees reaching a higher social performance. The primary objective of a firm is defined as creation of value, which is realised by taking into account the cooperation and interests of stakeholders.

In respect of examination the theory of shareholder value and stakeholder theory, we will remark by the way, that these are not two opposite trends. Theory of shareholder value does not deny existence of other stakeholders, and their consideration during economic decisions, but thinks the highest return can be reached if we maximise shareholder value.

Among reasons of these theories being enforced in practice, Copeland et al (1999) mention different ownership structure of countries, shareholders manner of control, legal form of companies, and concentration of capital resources. In the USA the open joint stock companies, and their fully fragmented ownership is characteristic, while in Europe the ownership is in the hands of several large companies, banks, families, the companies operate privately, and cross-shareholdings are not uncommon.

We have to differentiate between the Anglo-Saxon and continental understanding of value. The differences are primarily a result of the different financial system. (Black et al. 1999, Sulyok-Pap 1998, Vigvári 2011)

3. Identification of value creators

Summarizing the lessons learned from the above parts, it can be concluded that starting from the value chain theory of Porter (1998) – that is, the objective of the operation of the firm is to create value, thus the source of corporate value creation is the operation –, through the shareholder value network and maximising shareholder value of Rappaport (1998) – which makes identification of value creators possible –, over the key value creator of Copeland et al (1999) – which are value determining elements closely related to the cash-flow generating capability of the firm –, to the valuation model of Damodaran (2006) – which are the discounted cash flow based, relative and optional valuation based, and asset-based valuation models –, a logical relation between processes exists. Based on this theoretical knowledge, I determine the value creators of the firm as follows:

- I. **FCFF** (Free Cash Flow to Firm): the free cash flow of the firm, which is the sum of cash flows shown for the investor of the firm. Since this is a complex value creator, I break it down to the following factors:

$$FCFF = EBIT * (1 - T) - \text{Net Capital Expenditures} \\ - \text{Change in non cash Working Capital}$$

1. **EBIT** (Earnings Before Interest and Taxes): earnings before paying interests and profit taxes.
 2. **Tax Rate**: marginal tax rate of corporate tax
 3. **Reinvestment**: the additional investment, which is the sum of net capital expenditures and changes of non-cash working capital.
- II. Invested Capital**
4. **Invested Capital**: capital invested in the core business.
- III. Return on Invested Capital**
5. **ROIC** (Return on Invested Capital): return proportional to the capital invested,

$$ROIC = \frac{EBIT(1 - t)}{\text{Invested Capital}}$$

IV. Net Margin

6. **Net Margin**: net profit (profit after tax) divided by revenues
$$\text{Net Margin} = \text{Net Income} / \text{Sales}$$

V. Cost of Capital

7. **Market ROA**: return on assets at market value, which I am using as a substitute concerning WACC

$$MROA = \frac{\text{Net Income}}{\text{Market Values of Equity} + \text{Market Value of Debt}}$$

VI. Growth Rate

8. **dlnRev**: growth rate of revenues

After the theoretical review and earlier empirical research, I conducted independent statistical tests in order to get answers for my outlined research questions. To this end I examine the database of 1553 firms from 18 European countries, representing 10 industries, in the period between 2004 and 2011, which can be considered as a highly balanced panel, containing very few missing observations. I downloaded the database from the homepage of Aswath Damodaran, and made several adjustments on it.

For the firm value I used the firm value category, which is the sum of market capitalization – the best estimate for the market value of the equity capital – and market value of debt.

From the factors influencing firm value – as the dependent variable – I select those explanatory variables, which are most determinants of the firm value. The selection of variables was based on the relation that the value creation capability of a firm is determined by its cash flow generating capability. The works of Rappaport (1998), Copeland et al (1999), and Damodaran (2006) agree that during identification of value creating factors, the firms have to focus on cash flow, net margin, growth rate, invested capital, increasing the return on invested capital, and decreasing the tax burden and cost of capital. The model I used was defined by using a reduced number of value creators, since for identification of each value creator, several indicators can be selected. In my model I strived to have every explanatory variable in significant relation with firm value, the dependent variable.

In the case of firm value, EBIT, reinvestment and invested capital, I used the natural logarithm of variables, for the growth rate I used the variation of the natural logarithm of revenues, since this way the distribution of variables became close to normal distribution.

The empirical research was followed by definition of the panel model. The panel model is the most sophisticated method of using time series and cross-sectional data together, also called as the analysis of longitudinal data. By using the panel model, it is possible to monitor development over time (time series) of characteristics (cross-sectional data) of the same firms, since the panel data base contains data for several time periods and several entities (firm, industry, country), tabulated. (Ramanathan 2003: 498-501.)

After the completion of tests, I defined the following multi-variable regression model:

$$\begin{aligned} \ln FV_{i,t} = & \alpha + \beta_{\ln EBIT} \ln EBIT_{i,t} + \beta_{tax} tax_{i,t} + \beta_{\ln Reinv} \ln Reinv_{i,t} + \beta_{\ln InvC} \ln InvC_{i,t} \\ & + \beta_{ROIC} ROIC_{i,t} + \beta_{NetM} NetM_{i,t} + \beta_{MROA} MROA_{i,t} + \beta_{dlnRev} dlnRev_{i,t} \\ & + u_{i,t} + \varepsilon_i \end{aligned}$$

4. Empirical examination of factors affecting the value of firms

In this article I aim for getting an answer if any changes occurred, when analysing the role of factors affecting the value of firms, in these factors and their importance, in the period under review.

Table 1: Values of the estimated coefficients for the entire time period, and for the first and second period, concerning all sectors

	2004-2011	2004-2007	2008-2011
	InFirm_V	InFirm_V	InFirm_V
	Coef.	Coef.	Coef.
InEBIT	0.5504***	0.3579***	0.6123***
Tax_r	-0.2267***	-0.0469 ns	-0.5958***
InReinv	0.0392***	0.0115**	0.1021***
InInv_C	0.3208***	0.5331***	0.2004***
ROIC	0.0376***	0.1177***	0.0280***
Net_M	0.4924***	0.5036***	0.1890 ns
MROA	-3.5142***	-3.6069**	-2.9758***
dlnRev	0.0473***	-0.0904***	0.0264***
cons.	2.7067***	2.4098***	2.8599***
R ² overall	0.9209	0.9424	0.9236
R ² within	0.6349	0.2479	0.5958
R ² between	0.9427	0.9450	0.9300
Wald (chi ²)	15728.09***	14410.98***	12988.11***
Number of observations	5504	2450	3054

Source: own calculation

Note: At the levels of significances *** 1 %, ** 5 %, * a 10% respectively

Thus if I separate the whole time period to two sub-periods along the year of the crisis, to pre-crisis and post-crisis periods, and then evaluate them individually, are there any factors, which were significant, and then they lost their importance, or the other way around, they were marginal, and then became important.

Analysis was carried out using the STATA 11 statistical program, which is capable of performing statistical, econometric calculations and their graphic visualisation.

Results of the calculations are shown cumulatively for the entire period (2004-2011), for the period before the global financial crisis (2004-2007), the period after the global financial crisis (2008-2011), for all economic sectors (10 industries).

In all three models, variance of the firm value, as the dependent variable, can be significantly explained by the variance of the independent variables. The Wald test confirms the foregoing, since the probability of χ^2 (chi²) is below 1% in all three cases.

The explanatory power of the models can also be considered permanent, since the coefficient of determination (total R²) is above 90%. In the same time there is a difference between the strength of impact of the independent variables.

In the model inspecting the entire period, all independent variables have a significant impact on the dependent variable. In the first period, the tax rate did have a marginal impact, it was not significant. It was interesting though, that the increase of revenues had a negative impact on the dependent variable. In the second period the net margin had a significant impact on the firm value, there were no changes in the impact direction of other variables.

5. Conclusions

Based on the empirical examination of factors affecting firm value, the following conclusions were formulated: Comparing the first period of the panel analysis, the period before the global financial crisis (2004-2007) with the second period of the panel analysis, the period after the global financial crisis (2008-2011), the following differences can be observed: in the first period the tax rate did not have an influence on the firm value, and the increase of revenues had a negative impact on firm value, while in the second period the net margin did not have any impact on firm value.

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TRADE AND MANUFACTURING COMPANIES RISK ANALYSIS

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Abstract: Risk assumption is a key element of profit generation and hereby of shareholder capital maximizing. Therefore the determination and measurement of risk have become an essential task for companies. The main purpose of this research is to analyse corporate risk of companies acting in two sectors of economy: trade and manufacturing. Financial literature shows many risk quantification methods as variance, standard deviation, etc., but according to present study aims, we use for corporate risk analysis two dynamic risk measures: Degree of Operating Leverage (DOL), Degree of financial Leverage (DFL). The investigation is based on Hungarian companies data for five years (2013-2017). The database used for risk analysis is ensured by data from financial statements of trading companies (1077 companies) and companies operating in the manufacturing sector (638 companies). The calculations were carried out using different packages of R statistics system. In the first part of study, it was calculated the basic statistical characteristics of above mentioned two leverage ratios for trading and manufacturing companies. Then we plot the results with boxplot diagram in order to show the dispersion of investigated data and to ensure a better comparison of results. According to Degree of Operating Leverage (DOL), the results shows, that excepting one period (2014), the manufacturing companies risk level is greater than trade companies. This means that investigated manufacturing enterprises have to reconsider their functioning and to optimize their costs, on aspect of fix costs. In term of Degree of Financial Leverage (DFL), the results obtained show that manufacturing companies' riskiness is higher than trading firms. This means that have to pay more attention to the level of indebtedness because this may be linked to financial risk. The coefficient of variance show extremely high values which drew attention on great spatial heterogeneity of trade and manufacturing companies in term of Degree of Operating Leverage (DOL) and Degree of Financial Leverage (DFL). We can conclude that solution for a proper risk analysis may be the grouping of companies' sample by different features.

Keywords: corporate risk; risk measurement; degree of operating leverage; degree of financial leverage; risk analysis; standard deviation; coefficient of variance; quartiles; heterogeneity.

JEL Classification: G3; G30; G32.

1. Introduction

Risk is one of the most determinative, but at the same time, one of the most controversial questions of economics. The rapid and often unpredictable changes in the economic environment, globalization and the strengthening of competition have placed even more emphasis on the importance of risk-taking. Companies need to

take risk to ensure their subsistence, the necessary performance, the continuous adaptation to economy and customers' needs, the profit achievement, briefly the competitive functioning. The balance between the performance and the risks involved in it can be decisive for companies.

In order to determine the risk level, it is essential to map and quantify risk factors. Moreover, working out activities for managing them should be important, as well. Expressing corporate risk with right values is not an easy task. The aim of present paper consists in comparative analysis of corporate risk of firms acting in different sectors (trade and manufacture). In our analysis we quantify corporate risk by two leverage ratios Degree of Operating Leverage (DOL) and Degree of Financial Leverage (DFL) representing the main components of company's total risk.

2. Review of literature

Risk is an influential factor of economic environment. There are many theories about risk in literature, but I present only the most determinative ideas. Alastair (2009) defines risk as a chance, probability of loss, in his book gives more definitions of the risk and the most commonly mentioned: the probability of variant results, the deviation from the expected results, the symmetrical chance of gain and loss. Gallati (2003, p. 8) defines the risk as "a situation in which there is a possibility of deviation of expected result from the desirable result". Despite the fact that risk is mostly a symmetric concept, when we are talking about the deviation from the expected result, it is mostly used in a negative sense, as a "probability of negative event occurring". An important feature of the risk is that the time of occurrence of unfavourable events, the consequence and the gravity of its impact are uncertain and unpredictable. According to Bélyácz (2004, p. 1) "Risk and uncertainty are the most controversial phenomena in economics. It has never been the subject of controversy that both of them affect economic decisions..."It is essential to deal with specific risks of companies, basically with the economic and financial risks. According to Conklin (2002) the economic risk is reflected in the fluctuations of corporate's outputs, that cannot be predicted by company's management. Many researchers think that economic risk means negative change in revenue, cost and market share. Gabriel and Baker (1980) consider that economic risk is appears in the dynamics of net operating results and net cash flow. According to them, the relative standard deviation of operating profit is in close connection with the level of economic risk, so if the indicator shows a high value the economic risk is high. Besides the individual and company specific risks, there are some other independent risk factors against which companies have to defend. These include the effect of whole macroeconomic environment, the changes of economic competition's rules and the unpredictable and less favourable changes of laws, effects of globalization. In their book, Oxelheim and Wihlborg (2008) deal with definition of macroeconomic risks and they made a quite distinction from macroeconomic, company- specific and sector-specific risk. Santoro and Gaffeo (2009) think that the success and failure of company is significantly affected by the macroeconomic risk, but the intensity of the impact may vary depending on sector in which the corporate is acting in. According to Colquitt (2007), the classification of

corporate risks should take into account the different sector-specific risks. In the quantification of risk, it may be important to identify sector-specific risks, as they can be used to select appropriate risk measurement methods and corresponding indicators. In the comparative risk analysis we also take into account that results of two risk indicators may be interpreted carefully, because a relatively high value for companies operating in one sector does not necessarily mean quite high value for companies in the other sector. So, this is why we should take into consideration the main features of sector which we analysis. In the financial literature we can read about many risk indicators (standard deviation, variance, Value at Risk, Expected Shortfall). Besides these we can read about leverage ratios: Degree of Operating Leverage (DOL) and Degree of Financial Leverage (DFL). These leverage ratios are especially important because they are sensitivity ratios, so through their analysis we can find out step by step the cause which lead to the specific evolution of indicator. This is the reason why we used for present research these leverage ratios ratios.

Brealey and his co-authors (2014) in one of their studies deal with the average DOL values of companies operating in different sectors. The study embraced 20 years' time interval, between 1990 and 2010. The authors classified companies in two large groups. One group constituted the companies with lower DOL value and the second group the companies with larger DOL values. The analysis shows that lower DOL values were present at companies operating in electric utilities (0.39), food (0.97) and clothing industries, while companies that were operating in steel industry (2.31), in the paper industry (1.50) and in the machinery industry (1.49) had the larger average DOL value and higher operating risk.

Kumar (2017) analyses the companies operating in Indian steel industry. He tries to find out whether there is a relationship between degree of financial leverage (DFL) and earnings per share (EPS). He based his analysis on the financial statements of the companies operating in steel industry between the years 2006-2015. The result of the study shows there is a strong but negative relationship (-0.7779) between DFL and EPS in case of Indian steel companies. This means that if the degree of financial leverage increases, namely the cost of capital increases the earnings per share (EPS) decreases. This confirms that DFL has an effect on companies' profitability.

3. Research methodology

Financial literature shows distinct interpretation of corporate risk, including the concepts of financial and operational risk. We consider that it is indispensable to clarify the concepts and interpretations, on which we have built the overall risk of enterprises' functioning, including operational and financial risks.

One of the most important theorems of financial management is the "return- risk trade off", which means that higher risk must be assumed only if higher return belongs to it. According to this, the increase of return (profit) is in close connection with risk. According to Modigliani's and Miller's proposition II., the extent of return on capital depends on two factors, on the one hand on the return on assets, on the other hand on the capital structure of the company. The component a. (Return on Assets)

may be linked to the company's assets side and it is significantly influenced by the nature of company's operating activities, so it is called operating leverage, which can be considered as operational risk (business risk). The component b. is determined by the company's financing policy and on cost of debt. The component b. includes the Debt/Equity ratio, of which name in English literature is *leverage*. If the company does not use debt financing the Return on Equity is equal with Return on Assets. Therefore, the component b. appears and has great importance only if in the company's capital structure appears debt financing, which means greater risk exposure. Debt financing may increase the Return on Equity if the Return on Equity is greater than Cost of debt, but with this the financial leverage, and the financial risk (Ross et al., 2013, p. 532) also increase.

In the narrow sense, we can divide the firm's total risk into two parts: the first is the risk of the company's assets side, which depends on firms' operating activities (its name is operational business). The second one depends on companies' capital structure, namely on the debt ratio, so it is called corporate financial risk (Ross et al., 2010, p. 518). In almost all books dealing with corporate finance, I have found that firm's risk measure is the Degree of Combined leverage (DCL) which consists of two basic elements: the Degree of Operational Leverage (DOL) and the Degree of Financial Leverage (DFL). In the literature, the DOL and DFL indicators belong to the category of sensitivity indicators.

The DOL is an elasticity indicator, which reflects the ratio of the changes in Sales and changes in Earnings Before Interest and Taxes (EBIT).

DFL shows the percentage changes in net income, which results from changes in operating profit.

The formula of DFL highlights the close relationship between the degree of financial leverage and cost of debt. If there is no debt in a company's capital structure, the value of DFL is 1, which means that 1% changes in operating profit causes 1% changes in net income (EPS). If interest expenses appear in Income Statement, the DFL value is greater than 1, which also means a higher financial risk level. So, DFL is really relevant when the company uses debt financing such as credit, for which fixed costs can be linked (Illés, 2007). There is a direct, positive relationship between DFL value and the cost of debt. The credit financing can provide many advantages. Firstly, it has a positive effect on the variability of profitability, but only up to a certain point. The degree of financial leverage can also be an essential tool in determination of borrowing limit and tolerable risk level because the exceeding of them may pose serious threats to the company's overall activity and its financing policy.

In favourable circumstances, the higher DFL value provides an opportunity to corporate's profit increase when the Return on Assets is greater than the cost of debt. However, this also leads to an increase of a company's financial risk. According to Damodaran (2015), under favourable circumstances, the cost of debt may increase the EPS. At the same time, in case of companies with debt financing, the volatility of EPS influences the EBIT in a greater way. This increases the risk of capital investment of company (Damodaran, 2015, p. 119, Berk - DeMarzo, 2014, p. 496).

The empirical research was based on Hungarian enterprise data for five years (2013-2017). The database used for risk analysis is based on data from financial

statements of Hungarian trading companies (1077 companies) and companies operating in the manufacturing sector (638 companies). The calculations were carried out using different packages of R statistics system. In the first part of empirical research, it was calculated the basic statistical indicators of two leverage ratios of trading and manufacturing companies. Then we plot the results with boxplot diagram in order to show the dispersion of investigated data and to ensure a better comparison of results.

4. Results of research

The empirical analysis in which we carried out a comparative risk analysis of the Hungarian trading and manufacturing companies contains more steps. First, we determine of Degree of Operating Leverage (DOL) and Degree of Financial Leverage (DFL) for trading and manufacturing companies. Then, we present the main statistical characteristics of investigated trade and manufacturing companies' two risk indicators. For a better comparison of obtained results we plot values for each risk indicator and each sector.

In the Table 1. it can be seen the main statistical features of Degree of Operating Leverage (DOL) for investigated trade and manufacturing companies.

Table 1. The investigated trade and manufacturing companies DOL indicators (2014-2017)

DOL	2014		2015		2016		2017	
	Trade companies	Manufacturing companies	Trade companies	Manufacturing companies	Trade companies	Manufacturing companies	Trade companies	Manufacturing companies
Minimum	-84.81	-98.76	-92.79	-86.19	-98.56	-80.95	-95.66	-75.13
1. Quartile	-0.93	-0.44	-1.57	-1.29	-1.72	-1.42	-0.83	-1.39
Median	1.68	1.60	1.41	1.37	1.06	1.24	1.42	1.18
3. Quartile	4.93	4.76	4.76	4.52	4.21	4.48	4.51	3.99
Maximum	98.57	85.53	96.39	95.16	96.54	94.01	88.10	83.97
Mean	2.43	1.49	1.82	2.12	0.94	1.95	2.57	2.57
Standard deviation	16.72	15.46	16.59	15.64	17.65	16.77	14.02	15.63
Coefficient of variance (%)	689.27%	1040.45%	910.23%	737.08%	1876.78%	858.81%	545.90%	608.39%
Skewness	0.52	-1.49	0.27	0.65	-0.32	0.46	0.23	0.73
Kurtosis	9.98	14.89	9.51	12.28	10.73	9.71	13.40	8.58

Source: own calculations using R statistical system

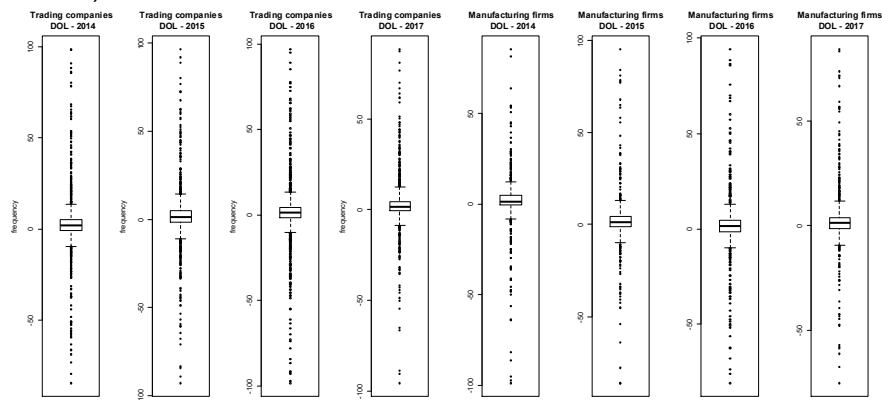
During the investigation of statistical characteristics of each year, we can observe that in 2015 and 2016, the manufacturing companies' average DOL values shows higher values than in case of trade firms, which means the profit/loss amplifier effect and also operating risk level is relatively high. In 2014 and 2017, the contradictory can be seen. Studying the evolution of mean DOL values, we can see that in case of trade companies the operating risk decrease until 2016 year, after that increase suddenly. In case of manufacturing companies' mean DOL values show fluctuation during investigated period with an overall increase of operating risk until 2017.

By analyzing the standard deviation of Degree of Operating Leverage (DOL), we can conclude that excepting the last investigated period, the values are greater in case of trade companies, which means that the trading enterprises sample it is more heterogeneous than the manufacturing sample. We can also see, that in both sectors

enterprise data, the coefficient of variance shows values greater than 100%, which also confirm the high heterogeneity of investigated companies, on aspect of DOL. In the first and the last year, in the case of manufacturing enterprises, the coefficient of variance of DOL shows higher values than in case of trade companies. In the 2015 and 2016 the coefficient of variance of DOL shows greater values at trading companies.

As we can see from Figure 1., for both sectors' companies, the distances between Minimum and 1. Quartile and 3. Quartile and Maximum are quite greater, which also confirm the high heterogeneity of enterprises data in term of operating risk. Based on these, it is clear, that the examined populations is strongly heterogeneous in term DOL.

Figure 1. Boxplots diagrams of trade and manufacturing companies' DOL indicators (2014-2017)



Source: own calculations using R statistical system

In term of skewness we can observe quite symmetrical distribution in case of trading companies, because values are very close to 0. Compared with trade companies' values, the manufacturing firms' skewness values for DOL shows slightly worse situation in term of symmetry. In both case of trade and manufacturing companies, the kurtosis shows values greater than 0, what means high degree of peakedness of investigated data, so a leptokurtic distribution it is specific.

The Table 2. shows the main statistical characteristics of Degree of Financial Leverage (DFL) for trade and manufacturing companies.

Table 2. The investigated trade and manufacturing companies DFL indicators (2014-2017)

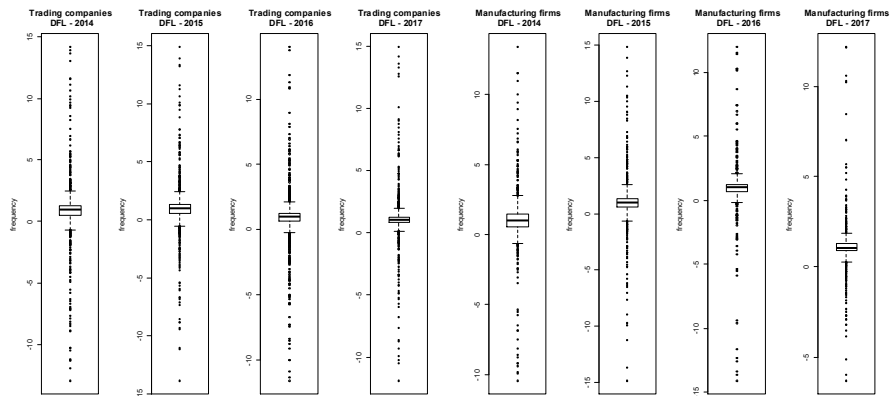
DFL	Trade companies	Manufacturing companies	Trade companies	Manufacturing companies	Trade companies	Manufacturing companies	Trade companies	Manufacturing companies
Minimum	-12.95	-10.44	-13.85	-14.87	-11.59	-14.10	-11.89	-6.31
1. Quartile	0.49	0.59	0.60	0.55	0.64	0.67	0.80	0.88
Median	0.92	1.01	0.98	0.98	0.97	1.02	1.03	1.05
3. Quartile	1.29	1.46	1.35	1.37	1.24	1.25	1.26	1.29
Maximum	14.15	13.39	14.88	14.81	13.97	11.96	14.91	12.17
Mean	0.83	1.06	1.02	1.04	0.89	0.93	1.08	1.09
Standard deviation	2.27	2.23	2.12	2.51	1.96	2.15	1.91	1.45
Coefficient of variance (%)	273.24%	210.29%	208.17%	241.85%	220.56%	230.90%	177.11%	132.20%
Skewness	-0.38	-0.50	0.15	-0.11	-0.56	-1.85	2.24	0.52
Kurtosis	13.57	10.74	14.27	11.52	15.48	21.48	21.92	19.44

Source: own calculations using R statistical system

During the investigation of statistical characteristics DFL, we can see that in case of manufacturing companies' mean values are higher than in case of trading companies. According to this, we can state, that manufacturing companies are more riskiness in term of financial risk. We can read in the financial literature books about the fact that greater indebtedness lead to greater financial leverage and also to a greater financial risk. This can be linked with our results and can be conclude that manufacturing companies are probably more indebted than trade companies due their specific functioning. This can be considered typically sector specific feature. By the examination of mean values of DFL of both sectors, we can also see that in some cases these not reach the value 1. This means that the financial leverage cannot be interpreted. Despite the fact that, first we susceptible to characterized as a favorable situation, but in fact this means the absence of amplifier effect. This is basically the consequence of fact that the operating leverage decrease is higher than the net income decrease. By analyzing of DFL evolution we can state in the last three (2015-2017) investigated years similar trend can be observed for manufacturing and trading companies. The DFL average follows the same fluctuation in the specified period: decreasing in 2016 and increasing in 2017. In 2014-2015 period contradictory evolution can be seen at manufacturing and trade companies financial risk.

In three of four investigated years, the standard deviation of DFL is lower in case of manufacturing companies. This shows less significant variability and also lower financial risk level in case of manufacturing companies. The coefficient of variance of DFL shows slightly contradictory results during investigated period, while in the first and the last years the trading companies shows greater values, in the middle years the manufacturing companies register greater values. It is clear, that both in case of trade and manufacturing companies, high values (greater than 100) of coefficient of variance reveals great heterogeneity of investigated data in term of DFL.

Figure 2. Boxplots diagrams of trade and manufacturing companies' DOL indicators (2014-2017)



Source: own calculations using R statistical system

As we can see from Figure 2., for both sectors' companies, the distances between Minimum and 1. Quartile and 3. Quartile and Maximum are quite greater, on which we can also underline the high heterogeneity of enterprises samples in term of financial risk expressed by DFL.

By examination of skewness values, we can observe that in the first three investigated period, the values relatively close to 0 shows quite symmetrical distribution for both trade and manufacturing enterprises. This can be the consequence of fact that analysed leverage ratios may register both positive and negative values, as we can see from Table 2. Both in case of trade and manufacturing companies the kurtosis shows greater than 0, what means high degree of peakedness of investigated data, so a leptokurtic distribution.

Finally, we can conclude that high values of dispersion measures (standard deviation, coefficient of variance) and the great statistical range drew attention on great spatial heterogeneity of trade and manufacturing companies in term of operating and financial leverage. This is why, the obtained leverage ratios' mean values need to be reconsidered. In this form, the leverage ratios are not proper measurements for sample characterizing. The right solution in order to get a homogeneous sample consists in grouping the sample by some specific features. In order to group the enterprise samples we can group by their size, for example using sales as grouping feature. We can also group by leverage ratios.

5. Conclusion

After studying books dealing with corporate finance and corporate risk quantification for analysts it still difficult to decide about the best risk measurement method that ensure the proper results in term of aims of concrete research. So, the corporate risk quantification is not easy task. The analysts have always take into consideration the

main purpose of his analysis and choose the risk quantification measure which suits best.

The main purpose of this research was to analyse corporate risk of companies acting in two sectors of economy: trade and manufacturing. Regarding to our research goal, we found that two leverage ratios express the corporate risk as well as possible: the Degree of Operating Leverage (DOL) and Degree of Financial Leverage (DFL).

The results shows that excepting the first investigated period (2014), the manufacturing companies operating risk level is greater than trade companies, according Degree of Operating Leverage (DOL) values. This means that investigated manufacturing enterprises have to reconsider their functioning on aspect of their costs. It is clear that they need to optimize their fix costs to total costs. The results of Degree of Financial Leverage (DFL) show that manufacturing firms' financial riskiness is higher than trading companies. Regarding to this, manufacturing companies have to reconsider their indebtedness level and/or cost of capital because this may be linked to financial risk.

The coefficient of variance shows extremely high values for both two leverage ratios which drew attention on great spatial heterogeneity of trade and manufacturing companies. We can conclude that solution for a proper risk analysis may be the grouping of companies' sample by different features.

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ENVIRONMENTAL ACCOUNTING DEVELOPMENT FOR ORGANIZATIONS IN MEXICO

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Abstract: *The environment has gained significant relevance on a global scale, owing to research by scientists and environmental movements that have been able to place global environmental problems such as earth warming and pollution. Social and environmental aspects are related to organizations and are being transcendental for various international institutions and organizations. The accounting has been present in humanity for several years now, as a result of the need that man has had to control and quantify the information generated from the economic activities that he has developed in the course of history. Today, accounting is required to report how organizations harm nature and its environment, because traditional accounting does not clearly reflect social and environmental costs. The accounting area must make efforts so that the environmental accounting is developed and provides useful, clear and relevant information for the interested parties. In this research, a documentary review of the proposals on environmental accounts and the current state of environmental accounting was made. This research is descriptive with a qualitative approach and the design applied is non-experimental. Its objective is to analyse the elements of environmental accounts and show the efforts of the accounting area in terms of environmental impact. As a result, environmental accounts are conceptualized differently by each author depending on the reference on which they are based. It is concluded that there are great advances in environmental accounting and in the conceptualization of environmental accounts, however, further development is required for its uniformity and application. It is required that at the level of undergraduate studies are taught more subjects of corporate social responsibility for the graduates to develop an early awareness of the social and environmental aspects related to the organizations with the objective of establishing better accounting practices in order to reduce the impact of the current environmental damage and that could have been part of the regular accounting procedures that are carried out within organizations.*

Keywords: *Environment; environmental accounting; social responsibility; sustainability; organizations.*

JEL Classification: F61; F63.

1. Introduction

In the years 70 the first indications of protection to the environment were presented in response to the environmental problems that were arising from the irrational exploitation of resources by the organizations (DE-la-Rosa, 2011).

At present, environmental problems have been recognized before well-known summits, starting with the Earth Summit of 1992, where for the first time the governments proposed to reflect on the actions against the climatic changes and the relation that this Situation is facing the economic development of the countries. From that moment, various programs, changes in policies and tactics to promote habits and customs that seek to carry out commercial activities in a more sustainable way, emerge. Accounting, is not alien to this problem and is exploring the various possibilities that exist between the environment and accounting (Rodriguez, 2011). Therefore, Governments pay special attention in the productive sectors as support for action to combat this situation. From this concern the accounting area is making efforts through environmental accounting to establish an accounting model that allows companies to have relevant information about their environmental performance, and thus prevent and control the damage that their Productive activities can cause the environment (DA-Rosa and Col., 2013).

In this work are analyzed elements of environmental accounts proposed by different authors and show how in the accounting area efforts are being made to contribute to the reduction of environmental impact by companies, as it is a task that is not only of a certain sector, market or people if it is not a work that involves the whole society and the environment that surrounds it. Within the environment surrounding society are economic entities who should seek to contribute to the reduction of pollution to the environment. It is worth mentioning that the primary economy referring to management accounting, seeks through economic theory to mention the internalization of externalities, which is considered as a way by which the company is responsible Of the negative effects generated by the environment and society in general (Vásquez and Gonzales, 2009; Salgado-Castillo, 2014).

Therefore, the objective of the research was to analyze the elements of the environmental accounts and to show the efforts of the accounting area in matters of environmental impact.

2. Background of Enviromental Accounting

The accounting began its progress, because of the different cultures and peoples that appeared, one had to find a way to capture the legacy of relevant facts of the history with arithmetic projection, which occurred frequently and were very complex as for to be preserved by memory. Kings and priests had the need to define the distribution of taxes and settle their payment in some way or another. Lastly, traders have always been the part of society more committed to all kinds of new developments for data logging.

Old pieces were found in ancient times that were later considered as part of the beginnings of accounting, the clay splints are within those pieces, the system of

weights and measurements, the cuneiform script, the position and Settlement of the quantities, the mathematical operations, the pictographic and hieroglyphic writing, the coin and the papyrus. In the Middle Ages the Arabic numerical system was established, at that time the Crusades began where new mercantile routes arose, which gave rise to the establishment of some form to register the mercantile transactions that were carried out (Guajardo and Andrade, 2008). Accounting has evolved and structured as new needs are emerging in organizations and productive systems (Palacios and Suarez, 2015). At present, accounting has expanded to encompass through financial accounting and tax accounting, besides administrative situations that organizations are suffering as globalization progresses, and in recent years we work on a Environmental accounting in order to obtain the arguments and norms that allow an adequate development of the same one in the organizations because of the relevance that has obtained the environment.

The importance of environmental accounting lies in the objectives that the accounting-environmental information has according to the authors Vega and Ricárdez (2011), which describe below:

- 1) from the accounting perspective, it is important to study and analyse the Processes of valuation, measurement and control of the environmental processes.
2. To renew the regulations of registration and accounting management.
3. To improve the accounting contribution to the management practices of the environmental issue in the companies.

3. Accounting relationship with management

The book of Industrial and General Management of Fayol (1961), establishes six groups of operations or essential functions that exist in the company; One of these groups has the function of carrying out the accounting, which is defined as the instrument of vision of the company that must allow to know at any moment the current situation of the company and its plans forward. It must give a clear, accurate, concise and precise report on the economic situation of the company. A good accounting, which is simple and clear, allows you to have a clear idea of the company's conditions, is a powerful tool for management and decision making, so accounting is the fundamental support of every administrator.

With regard to the principles of social responsibility that goes very close to environmental accounting, it is interesting to know that for more than 2 decades have appeared within the business postulates when Taylor (1994) raised it as the progress Employee's and employer's share, in which the employer intends to get the maximum benefit and the employee to get a higher income. Friedman (1970), says, "responsibility is to earn as much money as possible by adjusting to the basic standards of society. Both in those embodied in the laws and in those embodied in the Ethical Customs "(1970:1).

The systems theory proposed by Von (1986), is the basis for the accounting system because it studies the totalities, defined as systems composed of interrelated parts or subsystems, that constantly interact with their environment, where each Part is related to a common purpose or objective of the system. The theory can be seen from the point of view of the Organization as a whole where the accounting system

plays a predictable role to achieve the objectives of the Organization or also from the focus of the accounting system which requires information from the other areas to be able to feed properly and provide important information for management decision making. The theory of systems requires an excellent attitude to examine the phenomena and to see the reality with their interrelations, the environmental accounting is a system that requires an integral vision of the environment where the organization operates to have a inputs and outputs That can have a feedback or can be modified to enhance benefits of the stakeholders.

Another point that must be highlighted when talking about environmental accounting is that the theory of value is present, and this is because it is perceived to value as something that pleases people to those objects or services that somehow satisfy their needs, some have perceived it erroneously as something additional to goods or services. The value (Ramirez, 2008) is much more than a property of the object, the value increases if the effort improves or if the cost is reduced.

Value-based management is aimed at providing enormous value to customers, shareholders, members of the company and the community in general. Value management must be played by all companies that want to maintain their competitiveness in the future.

In the commercial activities, like life itself, the goods compete, and only the most suitable ones persist (according to the theory of the value, those that have more value). The goods must be valued according to the advantages and disadvantages that each one presents in front of other equivalent goods that satisfy the same necessity. To create sustainable competitive advantages, organizations need to learn to unite social, economic, environmental and political factors in their processes and in the different links of the value chain (Ramirez, 2017).

The organizations that implement a management system established in the value, will develop a differentiator to compete in terms of the quality of products and corporative image that will show to the client and therefore the manufacture of its products maintain A high intrinsic quality, optimizing costs and performing the processes in a sustainable way (Ramirez, 2008).

4. Environmental accounts in the accounting system

The current economic model has placed individual economic needs over life conservation needs, by placing environmental care in the private sector, those who consider environmental damage as externalities of organizations, where they do not have the obligation to take responsibility for these damages (Terreos, 2014). In this type of model, capitalism manifests its triumph, as organizations have acquired some power because they are in charge of promoting consumption, production and innovation, but also with the acquisition of that power comes responsibility (Raufflet, 2010); And they have as a challenge to optimize productivity to be competitive in the market, which brings as a result that they contribute actively to the social, economic and environmental improvement, so they require tools that allow advances not only in the economic, But in the social and environmental (Alturo, 2014).

Currently, models that evaluate sustainability are characterized by multidisciplinary approaches that show the demand to manage with the most evolved styles of

decision and responsibility. The sustainable economy is the one where the social, economic and environmental area interact and is identified by the ecological benefit, where the best financial results and the best ecological positioning will be obtained (Dascalu, and Col., 2010). There are differences in the development of the social responsibility of the organizations between the different countries and, therefore, a greater impetus is necessary of the hand of the Governments and of the civil society (Alonso-Almeida and Col., 2015).

Today, accounting is required to report how organizations harm nature and its environment, because traditional accounting does not clearly reflect social and environmental costs because they are hidden within the general accounts, showing themselves as clearly financial costs, which means that companies are unable to show the impact of their activities on the environment in which they develop (Sánchez-Vásquez and Rodríguez-Jiménez, 2014; Vergara and Col., 2016). It is necessary for the accounting to play a definitive role as a tool for information and control of the operations that are carried out in the organizations, it is required to strengthen the environmental management with appropriate instruments, as well as the qualities Techniques and knowledge of professionals to solve the requirements that the environment imposes; The incorporation of the environmental dimension into the accounting system is essential as an element to refine the methods of planning and business decision making (Salas and Col., 2015). The monetary value of the amount of money directed to environmental problems is not adequate, because it is considered that it is through the market that this situation is to be resolved, so that accounting should show monetary and non-monetary data, Qualitative and quantitative environmental impact, strategies to reduce, remedy and maintain the environment surrounding the activities of organizations (Quinche, 2008). And it is required that the organization identify appropriately its stakeholders, that is to say, clearly determine who are the people who are interested in accounting for the situation of the Organization including environmental and social issues, not Making an adequate determination of the stakeholders will hardly obtain transparent, credible and verifiable reports (Palacios and Coppa, 2015).

The International Federation of Accountants (IFAC) considers the Environmental Management Accounting (EMA) the way where accounting systems and practices are established, EMA not only encompasses the monetary calculus commonly handled in accounting, but encompasses the calculation of materials (Lorea, 2008). Panario (2010), mentions that, from the economic-Financial perspective, the absence of accounting records of liabilities, costs and environmental expenses make it reflect unreal profits to the owners of the organizations and places them in an economic position that is not Consistent with the actual situation of the Organization; It is therefore necessary that environmental events be recorded in a detailed account, so that there is greater transparency in the relationship between the organization and the environment, in order to contribute through accounting With truthful and timely information for decision making.

Recently environmental costs have become significant in the decision making of the organizations, this is because the prices of goods and services that show the traditional production costs are no longer available, it is necessary to include The actual environmental costs of the use, recycling and disposition of goods and

services (Taleo-Cabrejo, 2008). Therefore, environmental costs are divided into different categories among which are the conventional environmental costs are those related to the use of raw materials, capital goods, inputs and services; Potentially hidden environmental costs are those related to responsible management of the working environment and waste generated by business activities, also the author mentions that there are environmental contingency costs which are those where the organization may incur in the future, are fines or penalties, personal injury; The costs of image and environmental relations are those where there is a decrease in income due to loss of image due to inadequate environmental management, and to end the author points out the existence of social environmental costs or externalities that are they relate to the environmental impacts of business, society or community (Taleo-Cabrejo, 2008).

For the authors Dascalu and Col. (2010), the environmental accounting system has as its main component the environmental costs for which it takes those established by the Environmental Protection Agency. The types of environmental costs that the Environmental Protection Agency classifies are internal and external; Within the internal are the conventional costs, hidden costs, contingent costs, image and relationship costs. Within the external costs are the costs of environmental degradation and human impact costs.

De-la-Rosa (2007), establishes that in the accounting system the environmental costs are classified in recurrent and non-recurrent costs. Within the recurrent are a) costs generated by the environmental information obtained; B. Costs from the development of an environmental management plan; C. Costs deducted from technological implementations in favour of the environment; (d) Costs caused by logistics of final disposal of waste, emissions into the atmosphere and discharges to water bodies and soils; Costs resulting from the final product and its management; F. Additional costs arising from administrative policies, and g) extra costs from environmental audits. Non-recurrent environmental costs are found to be a) cost-generated by information systems and environmental care; (b) Costs of facilities and investments for improvement; C. Costs arising from the company's annual maintenance and conservation; D. Costs caused by interruption in the operation; e) costs resulting from accidents; (f) Costs arising from the new needs of the environment; G. Costs deducted from the improvement of corporate image and the environment; h) Costs derived from monitoring and control systems; i) Non-disbursed costs; J. Legal costs, and k) other costs arising from specific actions.

For Braga (2009), the environmental accounting system is integrated by a new environmental position where the organization assumes a position of conservation, preservation or repair of nature, this situation is directly related to the costs of environmental expenses made by the organization and where it reflects on the life cycle of the products that the organization provides, through recycling, thus generating environmental income and where the new technologies play an important role. Through environmental assets, all of this results in a lower level of pollution, higher productivity and a better image for the organization.

Perera and Zicari (2009), propose a fourth financial statement to complement financial accounting, which would form part of the 3 traditional accounting states (Balance sheet, statement of income and cash flow) where social information and

Environment that aims to show the generation and distribution of wealth. Regarding the generation of wealth, sales are considered less the total direct costs to determine the value added obtained by the company. With the distribution of wealth is taken into account how the value generated between the various stakeholders is distributed. One of the advantages of this model is that it clearly shows the contributions the Organization makes to society in terms of job creation, investment, supplier development, environmental care and management, and tax payment. Corporate reports should be deeper and show appropriate and beneficial information as complicated and questionable. The fourth proposed financial statement includes job creation, investment, supplier development, care and management of environmental variables and tax payments, these points are the first part of the report because it carries the notes of the fourth State where the minimum requirements for corporate governance issues, code of ethics, consumer protection, among other points are embodied.

Salas and Col. (2015), establish a procedure on how to integrate the environmental dimension into the accounting system. It considers that the financial statements are the instrument for the environmental information has been presented in a clear, timely and relevant way, in addition to having the least permissible subjective influence. Manage environmental accounts such as environmental revenues, environmental expenditures, environmental costs, environmental assets, active environmental assets, tangible fixed asset, intangible assets Environmental and environmental liabilities.

Environmental costs are also considered as impacts caused by the company or organization and as a result of activities that affect environmental quality. It is important to mention that these impacts may be monetary or non-monetary (Becerra and Col., 2011).

5. Materials and Methods

In this research the design applied is non-experimental, the scope of the research is descriptive with a qualitative approach. It is a documentary research where the method used to carry out the review was done by different stages: the search for primary articles in the different closed and open databases such as Emerald, Conricyt, EBSCO, Elsevier, Scielo and REDALYC related to the subject of research, then the reading and the collection of information, and finally the information was synthesized through a content analysis to be able to interpret the results.

6. Results

After the review carried out in the investigation on the environmental accounts it was found that the accounts are named differently depending on the author, as for the conceptualization it was observed that the authors Taleo-Cabrejo (2008) and Dascalu and Col. (2010) Agree to take the definitions issued by the Environmental Protection Agency, while Salas and Col. (2015) establishes its definitions with the help of other authors about environmental incomes, environmental expenses, costs, assets and liabilities and explains through stages a procedure to integrate the environmental dimension into the financial information system. Braga (2009), presents several environmental accounts reflecting the new position that considers pertinent of the accounting in relation to the environment, constitutes in which consists each one of the accounts coinciding in general terms with the authors Salas and Col. (2015).

Mejia and Col. (2010) found that financial accounting is not adequate to express social aspects, as non-monetary measurements are required to demonstrate the effects of protection, conservation and care of resources Environmental, both complement each other.

During the review of the literature it was noted that in the accounting discipline as established by Larrán and Andrades (2015) It is required that at the level of undergraduate studies are taught more subjects of corporate social responsibility for the graduates to develop a Early awareness of the social and environmental aspects related to the organizations, only in postgraduate studies is where the subjects of environmental nature predominate.

7. Conclusions

The environmental accounting has obtained in recent years great advances in the establishment of accounting accounts and in which each one consists, advances in the non-monetary physical records that are required as complement to be integral, although some Authors consider that non-financial physical information should be handled separately from environmental accounting; However, if the environmental accounting focuses on only financial and monetary records, it is limited to only economic measurements, and the social and environmental aspects are not susceptible to being only economically measurable, because It requires the physical non-financial part to control and decrease environmental years. It is important to recognize that further development is still required for its application in a clear and precise manner in organizations, because the normative framework that will support its implementation is not specifically determined because the criteria Established International Accounting Standards Board (IASB) are not adequate enough to represent the environmental aspect within them, it has much to work still in that part to have the foundation to support the application of the Environmental accounting. It must be the priority of economic entities and society to care for and protect our planet in order to make development sustainable and lasting, so that it has something to inherit to future generations for its growth and development.

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FISCAL PRESSURE IN THE EU: AN ECONOMETRIC APPROACH

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Abstract: *This article assesses the impact of fiscal pressure through the relationship between direct taxes, indirect taxes and taxes received by the central government as a percentage of GDP, and personal income tax rates, corporate income tax rates and value added taxes using a country sample that includes members of the EU-28, Iceland and Norway. Empirical analyses use annual data from 2004 to 2016 and employ techniques to account for possible linear effects in fiscal policy actions. Results show that for all countries considered in the analyses there is a strong relationship between dependent variables and independent variables in four econometric models.*

Keywords: *taxation; direct taxes; GDP; income tax; corporate tax.*

JEL Classification: *H24; H25; H26.*

1. Introduction

The topic of fiscal pressure is more current than ever within the EU in general and Romania in particular. First of all, Romania is in the process of reforming its fiscal system, which started with the constant updating of the Tax Code. Secondly, country authorities are aware of the lack of major investments needed to create stable and well-paid jobs. Thirdly, the income of most taxpayers is burdened by excessive taxation that discourages investors and encourages tax evasion. Regardless of the terminology used in the financial literature (i.e., fiscal coefficient, fiscal tension, tax burden, compulsory tax rate, etc.), the concept of fiscal pressure expresses the same idea, namely the tax burden exerted by the state on individual and corporate income. The global financial crisis has imposed the need for a stronger fiscal reform, which is directly linked to the banking system. Some authors like Batrancea et al. (2013) show that the banking crisis has revealed severe shortcomings of the monetary policy, deregulation, financial innovation, and other government policies. In another paper, a summary of the world economy emphasizes that other countries like Brazil and Mexico have experienced crises, which were caused by poor government policies based on low taxation and a fixed rate of converting national currencies (Batrancea et al., 2009c).

From the point of view of the economic and financial analysis, the fiscal pressure rate highlights the confiscatory aspect of mandatory levies, neglecting the fact that such levies are being reinvested in the economic circuit as public expenditures. The fiscal pressure rate measures the part of tax proceeds that undergoes a compulsory and public distribution process instead of being left to the discretion of private initiative.

Over the last two decades, most of the EU tax systems have undergone significant changes, amid the adoption of a new fiscal stance. The global financial crisis, the excessive increase in the complexity of tax systems, the negative influence that taxes and duties had on economic growth are the main factors that have led to fiscal reforms. Through fiscal reforms, EU member states have the difficult task of finding the adequate formula that provides the resources needed for the activity of public institutions and for achieving the abovementioned goals. The reminder of the paper has the following structure. A brief survey of the empirical literature highlights relevant studies tackling the problem of fiscal pressure. The section entitled "Method and research hypotheses" presents the hypotheses, the proposed linear and panel econometric models together with their estimated outcomes. The final part emphasizes the main results of the study, limitations and concluding remarks.

2. A brief survey of the empirical literature

There is an extensive literature analyzing fiscal pressure in the different countries. The present research has focused on the fiscal pressure in EU countries across a period of 13 years. Using a meta-regression analysis, Belz and von Hagen (2019) focused on the relationship between effective tax rate and firm size, showing that Hofstede's cultural dimensions theory, a transparency index and a corruption index explain the variation of this relationship. However, Lai (2019) investigates the effects of tax havens on nonhaven countries' redistributive policies and finds that a stricter antihaven regulation may lower tax rates. He shows that income shifting is likely to reduce the amount of the transfers, when considering also tax evasion.

Recent approaches have incorporated panel data techniques. Thus, Kottaridi et al. (2019) expand the notion of escapism involving foreign direct investment and integrate it into the framework of developed economies struggling with high fiscal pressure or inefficient policies. The authors stress that such developed economies need efficient public authorities and lower tax rates in order for domestic firms to succeed on foreign markets. Therefore, the paper emphasizes the moderating effect domestic market regulations have on taxation. Based on the Porter hypothesis, You et al. (2019) use data from 1,962 Chinese industrial companies listed on the stockmarket and covering the period 2004-2015 in order to investigate the influence of environmental regulation on company eco-innovation and the moderating effects of fiscal decentralization and political competition. Referring to the efficiency of local administration in Spain, Narbón-Perpiñá et al. (2019) explore the overall cost efficiency of Spanish local governments during the 2008-2013 economic crisis, considering four different non-parametric techniques. Their results suggest that local government efficiency has improved during the analyzed period because budgetary outlays decreased while the quality of local public goods and services has been maintained constant. Fiscal pressure is an important field of empirical research and it is also determined by tax compliance (Batrancea, 2012a,b; Nichita & Batrancea, 2012).

Empirical studies on fiscal pressure within the healthcare sector (Asensio & Popic, 2019) emphasize the need for more in-depth analyses of welfare reforms during crises periods that focus on the institutional characteristics and political contexts of

analyzed countries. After investigating UK employer-employee data for the period 2002-2016, Singleton (2019) concluded that no significant public sector wage premium was registered for male subjects. Lehner and Wasserfallen (2019) analyzed the conflict dimensions that shaped reform negotiations within the Economic and Monetary Union (EMU). Empirical findings show that political contestation regarding the Eurozone reform between the supporters of fiscal transfer and those of fiscal discipline is one-dimensional.

Based on the abovementioned opinions, it can be stated that financial ratios represent a very reliable research instrument when investigating economic phenomena, especially fiscal pressure (Batrancea et al., 2009a, b; Moscviciov et al., 2010). Therefore, as a macroeconomic phenomenon, fiscal pressure represents the taxation level a taxpayer is subject to, depending on the annual financial and fiscal policies enacted by the government. The amount of taxes levied on taxpayers' income can be determined both at the macroeconomic and microeconomic levels using a system of indicators among which the rate of fiscal pressure plays a central role. In this current paper, taxation patterns of countries belonging to EU-28, in addition to Iceland and Norway are analyzed by means of econometric models.

3. Method and research hypotheses

In order to run the analyses, taxation indicators from 30 countries (28 EU members, Iceland and Norway) were used. All data were taken from the European Commission AMECO (Annual Macro-Economic Data) database, covering the period 2004-2016. Country sample included EMU countries, as well as Eastern European economies outside EMU.

3.1. Analysis of correlation regarding taxation ratios

As a next step, based on data retrieved from the official website of the European Commission, the indicators presented below have been determined:

Indicator 1: Direct taxes ratio (DT_GDP) = Direct taxes/Gross domestic product

Indicator 2: Personal income taxes ratio (PIT_GDP) = Personal income taxes/Gross domestic product

Indicator 3: Indirect taxes ratio (IT_GDP) = Indirect taxes/Gross domestic product

Indicator 4: Company income taxes ratio (CIT_GDP) = Company income taxes/Gross domestic product

Indicator 5: Value added taxes ratio (VAT_GDP) = Value added taxes/Gross domestic product

Indicator 6: Taxes received by level of government ratio (TaxGov) = Central government taxes/Gross domestic product

Indicator 7: Personal income tax rates (PIT)

Indicator 8: Company income tax rates (CIT)

Indicator 9: Value added tax rates (VAT).

Regarding the correlation coefficients, two significance thresholds were considered: 0.01 and 0.05. The first threshold shows that the correlation coefficient is equal to 0 with a probability of 99%, while the second threshold shows that the correlation

coefficient is equal to 0 with a probability of 95%. Table 1 presents the correlation matrix for the taxation indicators of the European countries analyzed.

Table 1. Correlation matrix corresponding to the taxation indicators in the European countries

Ratios	TAXGOV	DT_GDP	IT_GDP	CIT_GDP
TAXGOV	1.000000			
DT_GDP	0.647100**	1.000000		
IT_GDP	0.261264	0.243073	1.000000	
CIT_GDP	0.493803*	0.340741	-0.137363	1.000000
PIT_GDP	0.497239*	0.886652***	0.220465	-0.004178
VAT_GDP	0.194913	0.048505	0.705922***	-0.083479
CIT	0.094226	0.380912	-0.050632	0.214257
PIT	0.245113	0.636153**	0.274958	0.059543
VAT	0.258145	0.341745	0.480782	-0.119375

Ratios	PIT_GDP	VAT_GDP	CIT	PIT	VAT
TAXGOV					
DT_GDP					
IT_GDP					
CIT_GDP					
PIT_GDP	1.000000				
VAT_GDP	0.005294	1.000000			
CIT	0.252369	-0.332139	1.000000		
PIT	0.605007**	0.023055	0.531834*	1.000000	
VAT	0.374736	0.477608	-0.148195	0.226231	1.000000

Note: *Correlation coefficients significant with $p < 0.1$; **Correlation coefficients significant with $p < 0.05$; ***Correlation coefficients significant with $p < 0.01$. In the table above, one can identify positive correlations between the majority of indicators, excepting the following: IT_GDP, CIT-GDP and CIT; CIT_GDP, PIT_GDP and VAT; VAT_GDP and CIT; CIT and VAT.

In order to highlight the level of fiscal pressure, the relationship between direct taxes ratio, indirect taxes ratio and taxes received by level of government ratio (as dependent variables) and the other ratios (as independent variables) was analyzed on a country sample pool comprising members of EU-28, Iceland and Norway, during the period 2004-2016. The analyses will therefore inform regarding the assessment and understanding of taxation nature and its effects on fiscal reforms across Europe.

The econometric models

The software EViews version 9.0 was used to perform the statistical analyses for the econometric models. Analyses are based on the Least Squares Panel method, which is a specific method of generating equations for time series data. Our empirical research is based on the following hypotheses:

H1: There is a linear dependence between direct taxes ratio (DT_GDP), personal income tax rates (PIT) and company income tax rates (CIT).

H2: There is a linear dependence between taxes received by level of government ratio ($TaxGov$), personal income tax rates (PIT) and company income tax rates (CIT).

H3: There is a linear dependence between indirect taxes ratio (IT_GDP), personal income tax rates (PIT), company income taxes rates (CIT) and value added tax rates (VAT).

H4: There is a linear dependence between taxes received by level of government ratio ($TaxGov$), company income taxes ratio (CIT_GDP), direct taxes ratio (DT_GDP), indirect taxes ratio (IT_GDP), personal income taxes ratio (PIT_GDP) and value added taxes ratio (VAT_GDP).

The link between the abovementioned variables is analyzed by means of the following econometric models:

$$\text{Model 1: } DT_GDP_{it} = a_0 + a_1PIT_{it} + a_2CIT_{it} + \delta_i + \theta_t + \varepsilon_{it}$$

$$\text{Model 2: } TaxGov_{it} = a_0 + a_1PIT_{it} + a_2CIT_{it} + \delta_i + \theta_t + \varepsilon_{it}$$

$$\text{Model 3: } IT_GDP_{it} = a_0 + a_1PIT_{it} + a_2CIT_{it} + a_3VAT_{it} + \delta_i + \theta_t + \varepsilon_{it}$$

$$\text{Model 4: } TaxGov_{it} = a_0 + a_1CIT_GDP_{it} + a_2DT_GDP_{it} + a_3IT_GDP_{it} + a_4CIT_GDP_{it} + a_5VAT_GDP_{it} + \delta_i + \theta_t + \varepsilon_{it}$$

where:

- δ_i represents fixed effects intended to control for time-invariant taxation-specific factors;
- θ_t represents fixed effects intended to control for common shocks (e.g., global financial crisis);
- ε_{it} represents the error term.

In order to compensate for omitting other factors that influence direct taxes ratio, indirect taxes ratio or taxes received by level of government ratio, the specific unobserved effect (δ_i) of a country should be considered. As with time common shocks have an impact on dependent variables, a parameter estimation with fixed effects was also performed.

Results

Estimations of the relationship between direct taxes ratio, taxes received by level of government ratio and the designated independent variables are presented in Table 2.

Table 2. Estimations of the relationship between personal income tax rates (PIT), company income tax rates (CIT), direct taxes ratio (DT_GDP) and taxes received by level of government ratio (TaxGov) via econometric models

	Model 1		Model 2	
Constant	7.578604*** (9.287102)	6.695710*** (7.622477)	19.58236*** (20.07056)	19.81792*** (18.94552)
PIT	0.082198*** (5.415747)	0.086958*** (5.877204)	0.063665*** (3.508315)	0.059213*** (3.360680)
CIT	0.041238 (1.470144)	0.070507** (2.336802)	0.027628 (0.823777)	0.025099 (0.698557)
Prob.>F	0.000	0.000	0.000	0.000
F-statistic	226.9605	178.7166	199.9570	158.9083
Cross-section effects	Fixed	Fixed	Fixed	Fixed
Time fixed effects	No	Yes	No	Yes
R ²	0.951581	0.956916	0.945399	0.951804
Observations	390	390	390	390

Note: The dependent variables are DT_GDP in model 1, TaxGov in model 2 for country "i" in the "t" year. Robust t-statistics are shown in parentheses. *, **, *** indicate statistical significance at 10%, 5% and 1% levels. Prob.>F is the probability of the model not including fixed effects. For all estimated models, the hypothesis of multicollinearity is investigated using the variance inflation test (VIF). In all cases, the VIF values are lower than 3, thus indicating low risk of multicollinearity.

Model 1

In the first equation, the multiple regression model is significant ($R^2=0.95$), meaning that 95% of the variation in the *DT_GDP* is explained by independent variables, while 5% is explained by variables outside the model. The F-statistic of 226.96 shows that predictors are significantly related to the dependent variable *DT_GDP*. The regression estimation reveals the existence of a positive relationship between *DT_GDP* and independent variables PIT and CIT. Namely, the coefficient 0.082 indicates that an increase of 1% in PIT leads to an improvement of 8.2 percentage points in *DT_GDP*.

In the second equation, when taking into account fixed-time effects, the F-statistic of 178.71 shows that predictors are significantly related to the dependent variable *DT_GDP*. Moreover, the multiple regression model is significant ($R^2=0.95$), meaning that 95% of the variation in the *DT_GDP* is explained by the independent variables, while 5% is explained by variables outside the model. Results indicate that an increase of 1,000 units in PIT and CIT generate the increase of *DT_GDP* with 86 units and 70 units, respectively.

Based on the results above, the null hypothesis is rejected and the alternative hypothesis is accepted, hence there is a positive significant impact on direct taxes ratio.

Model 2

In the first equation, the results show that the multiple regression model is significant ($R^2=0.94$), meaning that 94% of the variation in the DT_GDP is explained by the independent variables, while 6% is explained by variables outside the model. The F-statistic of 199.95 shows that predictors are significantly related to the dependent variable. The regression estimation reveals the existence of a positive relationship between DT_GDP and the independent variables PIT and CIT. Namely, the coefficient of 0.0636 indicates that an increase of 1% in personal income rates leads to an improvement of 6.36 percentage points in DT_GDP . Hence, a 1,000-unit rise in PIT will determine a 27-unit rise in DT_GDP .

In the second equation, when taking into account fixed-time effects, the multiple regression model is significant ($R^2=0.95$), meaning that 95% of the variation in the DT_GDP is explained by independent variables, while 5% is explained by variables outside the model. Also, the F-statistic of 158.90 shows that predictors are significantly related to the dependent variable DT_GDP . Results indicate that an increase of 1,000 units in PIT and CIT determine an increase of 59 and 25 unites respectively in DT_GDP .

Based on the results above, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, one can state that there is a positive significant impact on direct taxes ratio.

Estimates on the relationship between personal income tax rates (PIT), company income taxes rates (CIT), value added tax rates (VAT) and indirect taxes ratio (IT_GDP) are presented in Table 3.

Table 3. Estimations of the relationship between personal income tax rates (PIT), company income taxes rates (CIT), value added tax rates (VAT) and indirect taxes ratio (IT_GDP) via econometric models

	Model 3	
<i>Constant</i>	9.549861*** (8.960030)	9.080494*** (8.272872)
<i>PIT</i>	0.016577 (0.834870)	-0.032218*** (-3.407445)
<i>CIT</i>	-0.022039** (-2.170878)	-0.024255 (-1.246451)
<i>VAT</i>	0.230599*** (6.282698)	0.319192*** (7.515658)
<i>Prob.>F</i>	0.000	0.000
<i>F-statistic</i>	106.8243	94.26499
<i>Cross-section effects</i>	Fixed	Fixed
<i>Time fixed effects</i>	No	No
R^2	0.905440	0.923208
<i>Observations</i>	390	390

Note: The dependent variable is IT_GDP in model 3 for country "i" in the "t" year. Robust t-statistics are shown in parentheses. *, **, *** indicate statistical significance at 10%, 5% and 1% levels. Prob.>F is the probability of the model not including fixed

effects. For all estimated models, the hypothesis of multicollinearity is investigated using the variance inflation test (VIF). In all cases, the VIF values are lower than 3, thus indicating low risk of multicollinearity.

Model 3

In the first equation, results show that the multiple regression model is significant ($R^2=0.90$), meaning that 90% of the variation in the *IT_GDP* is explained by the independent variables, while 4% is explained by variables outside the model. The F-statistic of 106.82 shows that predictors are significantly related to the dependent variable. The regression estimation reveals a positive relationship between *IT_GDP* and the independent variables *PIT* and *VAT*, and a negative relationship between *IT_GDP* with *CIT*. The 0.83 robust t-statistic for *PIT* indicates statistical non-significance. The t-statistic for *CIT* indicates a statistical significance at the 5% level. For *VAT*, the robust t-statistic of 6.28 indicates a statistical significance at the 1% level.

In the second equation, when taking into account fixed-time effects, the multiple regression model is significant ($R^2=0.92$), meaning that 92% of the variation in the *IT_GDP* is explained by the independent variables, while 8% is explained by variables outside the model. Also, the F-statistic of 94.26 shows that predictors are significantly related to the dependent variable *IT_GDP*. The -3.40 robust t-statistic for *PIT* indicates statistical significance at the 1% level. The t-statistic for *CIT* indicates statistical non-significance. For *VAT*, the robust t-statistic of 7.51 indicates statistical significance at the 1% level.

Based on the results above, the null hypothesis is rejected and the alternative hypothesis is accepted. Hence, there is a positive significant impact on indirect taxes ratio.

Table 4. Estimations of the relationship between company income taxes ratio (*CIT_GDP*), direct taxes ratio (*DT_GDP*), indirect taxes ratio (*IT_GDP*), personal income taxes ratio (*PIT_GDP*), value added taxes ratio (*VAT_GDP*) and taxes received by level of government ratio (*TaxGov*) via econometric models

	<i>Model 4</i>	
<i>Constant</i>	0.185795 (0.283610)	-0.161525 (-0.232168)
<i>CIT_GDP</i>	-0.053956 (-1.143370)	-0.119717** (-2.306637)
<i>DT_GDP</i>	0.926486*** (35.73693)	0.952157*** (35.89451)
<i>IT_GDP</i>	0.80750*** (14.33130)	0.815418*** (14.12796)
<i>PIT_GDP</i>	-0.022980 (-1.312020)	-0.025158 (-1.425909)
<i>VAT_GDP</i>	0.141440 (1.531285)	0.16457* (1.755842)
<i>Prob.>F</i>	0.000	0.000
<i>F-statistic</i>	1615.111	1222.300
<i>Cross-section effects</i>	<i>Fixed</i>	<i>Fixed</i>

<i>Time fixed effects</i>	<i>No</i>	<i>No</i>
R^2	0.993577	0.993937
<i>Observations</i>	390	390

Note: The dependent variable is TaxGov in model 4 for country "i" in the "t" year. Robust t-statistics are shown in parentheses. *, **, *** indicate statistical significance at 10%, 5% and 1% levels. Prob.>F is the probability of the model not including fixed effects. For all estimated models, the hypothesis of multicollinearity is investigated using the variance inflation test (VIF). In all cases, the VIF values are lower than 3, thus indicating low risk of multicollinearity.

Model 4

In the first equation, results show that the multiple regression model is significant ($R^2=0.99$), meaning that 99% of the variation in TaxGov is explained by the independent variables, while 1% is explained by variables outside the model. The F-statistic of 1,615.11 shows that predictors are significantly related to the dependent variable. The regression estimation reveals that a positive relationship exists between TaxGov and the independent variables DT_GDP, IT_GDP and VAT_GDP. Moreover, TaxGov has a negative relationship with CIT_GDP and PIT_GDP. The -1.43 robust t-statistic for CIT, the -1.31 t-statistic for PIT_GDP and the 1.53 t-statistic for VAT_GDP indicate statistical non-significance. Moreover, the 35.73 t-statistic for DT_GDP and the 14.33 value for IT_GDP indicate statistical significance at the 1% level. For VAT, the 6.28 robust t-statistic indicates statistical significance at the 1% level.

In the second equation, when taking into account fixed-time effects, the multiple regression model is significant ($R^2=0.99$), meaning that 99% of the variation in TaxGov is explained by the independent variables, while 1% is explained by variables outside the model. The F-statistic of 1,222.30 shows that predictors are significantly related to the dependent variable TaxGov. The -2.30 robust t-statistic for CIT shows statistical significance at the 5% level. The -1.42 robust t-statistic for PIT_GDP indicates statistical non-significance. The 1.75 robust t-statistic for VAT_GDP shows statistical significance at the 10% level. The 35.89 t-statistic for DT_GDP and the 14.12 t-statistic for IT_GDP indicate significance at the 1% level. Based on the results presented above, the null hypothesis is rejected and the alternative hypothesis is accepted. Hence, one can conclude that there is a positive significant impact on taxes received by level of government ratio within the analyzed country pool.

4. Conclusion and recommendations

This paper investigates the existence of a high fiscal pressure on a country sample pool including members of EU-28, Iceland and Norway, based on the linear relationships between government revenues and income taxes. Analyses do not consider a particular threshold level of taxes received by level of government as a percentage of GDP when assessing fiscal pressure but they explore the impact of direct and indirect taxation, as well as of other taxation rates.

Firstly, empirical results indicate a linear relationship between the direct taxes ratio, personal income tax rates and company income tax rates. In this situation, a small increase in these taxation rates can trigger government insolvency and delay the efforts to achieve fiscal sustainability.

Secondly, another interesting result is the significant positive link between indirect taxes as percentage of GDP, company income tax rates and the value added rates within the country sample.

Thirdly, analyzed countries amass rather consistent tax revenues levied by central governments, ranging between 10% and 45% of GDP, while also registering a strong dependence of direct and indirect taxation. Therefore, policy makers need to improve the management of national fiscal pressure in order to foster economic growth, so that the taxes received by level of government remain at a stable level.

Finally, one could observe that results indicate correlations between the direct taxes ratio (dependent variable), personal income tax rates and company income tax rates (independent variables), meaning that direct taxes increase in the same time as labor and company taxation. From the investors' point of view, an increasing fiscal pressure diminishes future investments. From the employees' point of view, an increasing fiscal pressure diminishes purchasing power.

The present study recommends the following measures concerning the fiscal pressure management:

- optimizing budgetary resources by increasing tax collection;
- ensuring an adequate management by efficiently allocating budgetary resources for investment and creating new jobs – the latter measure would increase the collection of direct taxes levied on labor;
- providing tax incentives to investors who create new jobs and introduce new technologies into production.

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FISCAL RISK OF VAT UNCOLLECTED IN EUROPEAN UNION

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Abstract: *Since 1967, the 6 states that then formed the European Economic Community (EEC) decided that value added tax (VAT) would be the most important indirect tax of the Member States. Moreover, its use by the countries wishing to join the EEC was an indispensable condition. In 2019, VAT is a tax used by all 28 European Union (EU) Member States, but the system for collecting public revenues from this tax is not a perfect one and it can be improved. EU intervention in the area of taxation is limited because the fiscal policy of each Member State continues to be an attribute of national sovereignty. Through the directives, the European Commission sets measures valid for all countries (such as the minimum level of the standard VAT rate set at 15%), but each EU state decides on the national system of taxes and duties. The fiscal policy registers differences from one state to another and therefore provides different results in terms of performance. This article aims to highlight the link between the VAT collection deficit and the standard VAT rate applied in each of the EU countries. The analysis showed that the countries with the lowest VAT rates are also the ones with the lowest losses in VAT collection. The biggest deficits are encountered among the states with average VAT rates, especially in the east and south of the EU. Romania and Greece lose about a third of the VAT revenues, and the loss is all the more obvious as the share of VAT in the total tax receipts is higher than in Western EU states, for instance. After all, any loss harms the tax system and indirectly the society. We also mention that the data used in this analysis are those published in September 2019 by the European Commission through TAXUD and also provided by Eurostat databases and refer to 2017.*

Keywords: *value-added tax; VAT Gap; VAT revenue; standard VAT rate.*

JEL Classification: *H26; H71.*

1. Introduction

A strict control, at national level, of the income and assets/wealth of each individual taxpayer - natural and legal person - is a utopia. The collection of taxes due to the state budget as a result of such control would rather emphasize the coercive force of the state within the society, as opposed to the increasingly studied idea of "voluntary tax compliance" (Pomeranz, 2015).

Complying with tax laws is indeed a civic obligation. However, the nominal value of the taxes owed depends on the accuracy and completeness of the taxpayer's tax returns. As the fiscal obligation affects the budget of the taxpayer, there is a well-known, intuitive possibility for the latter to make a misreporting.

From this perspective, we can see that the struggle for voluntary compliance takes place on several levels, not only strictly fiscal, but it is a complex process with social and psychological implications. In addition to the measures of the public administration to combat evasion, there is talk of forming a conscience of the taxpayer, a "tax morale" (Luttmer and Singhal, 2014) that dictates to him a responsible fiscal behaviour. The authors claim for the need to create non pecuniary motivations, capable of determining within taxpayers a uniform behaviour of compliance, so a social norm of compliance.

2. The situation of VAT collection in EU countries (2017)

As stated in the literature, public financial resources ensure the needs of the social environment (Anghelache et al, 2018). Therefore, the failure to achieve the expected level of tax revenues is not only a loss of the state as an institution, but is a loss of the whole society in general, of each member of it in subsidiary.

The inefficiency of collecting taxes leads to a lower state budget than estimated, hence the difficulty in financing specific activities. The greater the deficit of tax collection on the budget, the greater the need for the state to find alternatives to cover the expenses. Perpelea and Perpelea (2018) state that in such situations, the simplest solutions to ensure the financial need at the state level are: "increasing the level of existing taxes, introducing new taxes or state loans". Of course, the immediate effect of these measures is positive, that of obtaining the funds, but in the long term, not properly managed, it turns out to be an unintended participation of the state in the phenomenon of tax evasion and tax avoidance. The increase of the amount of taxes, the state loans, regardless of the market from which they were accessed, only lead to the distrust of the taxpayers in the fiscal policy of the state and in the latter ability to efficiently cover its expenses.

The European Union supposes a customs union that allows the movement of goods and services internally without applying additional tariffs. However, this facility was also used for the purpose of avoiding tax payment. In this sense, at European level there is a VAT fraud of carousel type (Sergioiu, 2012). Although the phenomenon exists as well at the national level of member states, its presence in the EU implies effects on all countries, a complex network (that's why it is even more difficult to monitor and destroy), huge amounts of unpaid VAT.

In EU, for 2017, the situation of the VAT deficit and the standard rates applied for this indirect tax in each member state is illustrated in the following graph.

The lowest VAT rate in EU can be found in Luxembourg (17%) and the highest in Hungary (27%). This information emphasizes that the range regarding standard VAT rates in EU is not high and "represents a step towards harmonization" (Vlad et al., 2018).

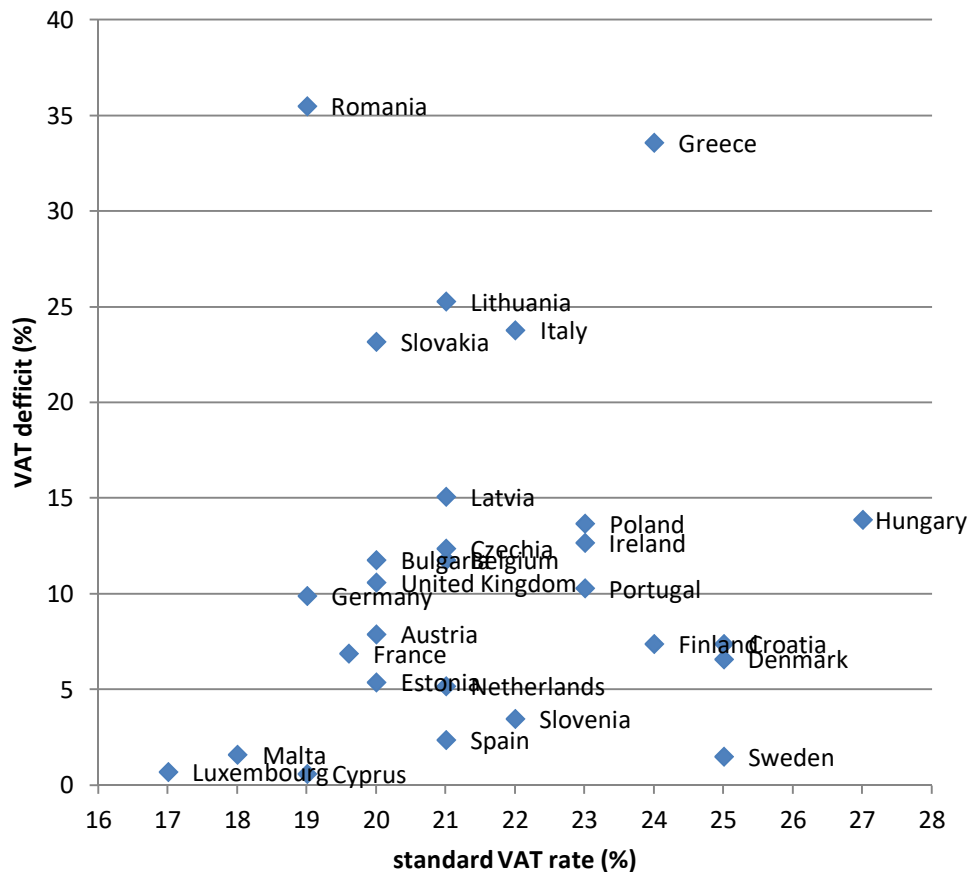


Figure 1: VAT Gap (%) correlated with VAT standard rates (%) in EU (2017)
Source: own representation, based on data provided by 2019 TAXUD Report.

Nevertheless, VAT collection difficulties were faced by all the member states and led to different results in terms of VAT collection deficits in 2017, from 0.6% in Cyprus to 35.5% in Romania.

The first remark we can make from this graph is that the smallest deficits were in the countries with lowest VAT rates - between 17% and 19% (Cyprus, Luxembourg, and Malta registered VAT Gaps less than 2%). At the other pole, the biggest VAT collection deficits were not recorded by the countries having the highest VAT rates in the EU, as we might think. Croatia, Sweden, Denmark or Hungary, each with a standard VAT rate of 25% or more, were not in the top of VAT gaps, their deficits were below 15%. Therefore, we cannot infer that there is a directly proportional relationship between the two elements analyzed, VAT rate and VAT Gap.

The countries with the highest levels of VAT Gap were Romania and Greece, with values exceeding 30%, followed by Lithuania, Italy, Slovakia, with values between

20% and 30%. The standard VAT rates of these states were closer to the European average and were in the range of 19% - 24% in 2017.

The graph also shows that among the VAT rates practiced, the 19% and 24% ones seem to be the most controversial, with extreme deficits. Using a VAT rate of 19% in 2017, Romania had a deficit of 35.5%, while Germany 9.9% and Cyprus only 0.6%. Similarly, with a 24% standard rate, Finland had a deficit of 7.4%, when in Greece 33.6% of VAT revenues were going missing.

Romania's VAT collection deficit, with a value of 35.5% of the total value of VAT estimated revenues, remained in the first position in the EU regarding the VAT non collected. Compared to countries such as Cyprus or Luxembourg which have lost less than 1%, or compared to the EU average of 10.1%, Romania lost from its VAT returns 34%, 25% respectively more.

Tax revenues in the countries of Central and Eastern Europe (including Romania) are based on indirect taxes, especially on VAT (Ibadula et al., 2017). Therefore, a large deficit in VAT collection, as in the case of Romania, where it exceeded one third of the total VAT expected, has an even more pronounced impact as the share of VAT revenues in the total tax revenues is higher.

Table 1 summarizes the data used to calculate the shares illustrated, data that were taken from both TAXUD report and Eurostat databases. The amounts are expressed in national currency and refer to 2017.

Table 1 - VAT standard rate (%), VAT Gap (%), VAT Gap, Fiscal Revenues, VTTL and Potential Fiscal Revenues (EU, 2017)

Country code	VAT standard rate (%)	VAT Gap (%)	VAT Gap	Fiscal Revenues	VTTL	Potential Fiscal Revenues
BE	21%	11.80%	30254.7	139820.1	33759	143816.1
BG	20%	11.80%	9121.3	21646.23	10344	22868.23
CZ	21%	12.40%	387537	1026808	442353	1081624
DK	25%	7.40%	207767.9	1008136	224395	1024763
DE	19%	9.90%	226582	779439	251598	804455
EE	20%	5.40%	2148.71	5104.26	2270	5226.26
IE	23%	12.70%	13059.92	56092.63	15215	58030.63
EL	24%	33.60%	14642	48861	22041	56260
ES	21%	2.40%	73970	260335	75913	262141
FR	19.60%	6.90%	161932	685168	173962	697198
HR	25%	6.60%	48250.9	94932.9	51831	98361.9
IT	22%	23.8%	107576	504910	141530	538539
CY	19%	0.60%	1851.4	4963.1	1862	5050.1
LV	21%	15.10%	2163.7	6121.38	2549	6506.38
LT	21%	25.30%	3310.4	7288.93	4429	8407.93

Country code	VAT standard rate (%)	VAT Gap (%)	VAT Gap	Fiscal Revenues	VTTL	Potential Fiscal Revenues
LU	17%	0.70%	3434.9	15312.76	3492	15335.76
HU	27%	13.90%	3626566	9908427	4210262	10493579
MT	18%	1.60%	810.19	3012.96	823	3043.96
NL	21%	5.2%	49833	183688	52644	186432
AT	20%	7.9%	28299.79	100921.9	30748	103365.9
PL	23%	13.7%	154656	423937	179194	448475
PT	23%	10.3%	16809.45	48890.38	18738	50819.38
RO	19%	35.5%	53228.6	141387.9	82528	170686.9
SI	22%	3.5%	3481.73	9432.27	3606	9560.27
SK	20%	23.2%	5918.74	16383.68	7708	18174.68
FI	24%	7.4%	20404	69985	22026	71607
SE	25%	1.5%	425053	1912945	431357	1919249
UK	20%	10.6%	142655	565047	158421	581878

Source: TAXUD Report and Eurostat databas. The following graph shows the share of VAT revenues in the total tax revenues of each EU member. We note that in the case of Croatia most of the tax revenue consists of VAT collection, with a share of approximately 51% in the total tax revenue. Among the countries the most affected of the VAT deficit, Lithuania, Slovakia, Romania and Greece have 30% or more of their total tax receipts based on VAT. Therefore, a poor VAT collection has a grater impact in country's fiscal revenues.

The *Figure 2* expresses the share of the total value of the VAT, if it had been collected at the level estimated by each EU state, in the total of the tax revenues, all the other sources of tax receipts remaining unchanged. VTTL designates VAT Total Tax Liability. There is a considerable increase compared to the representation in the previous graph, except for Cyprus, whose VAT deficit, if collected, would not have led to a higher share of VTTL in tax revenue. For Romania and Greece, the countries with the largest deficit, a complete collection of VAT would have generated a higher VAT share in tax revenues with 10.7 percentage points, respectively 9.2 percentage points.

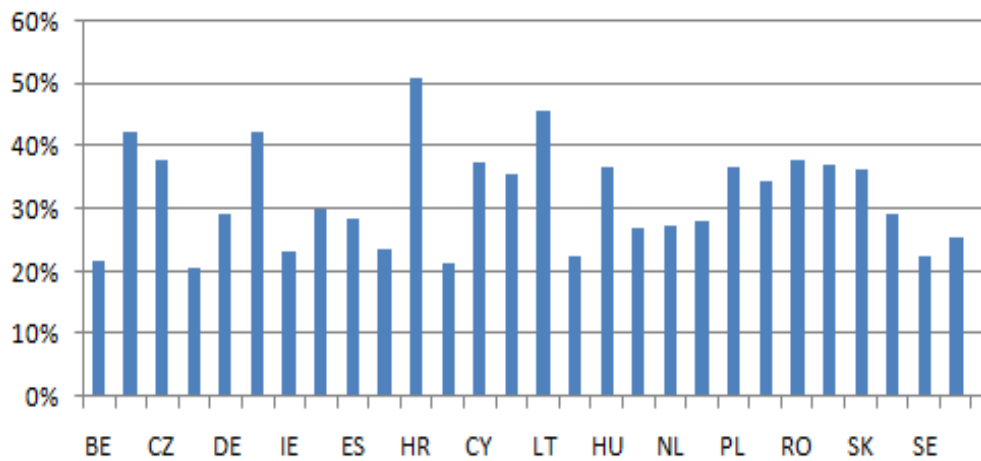


Figure 2: VAT revenues in total tax receipts / EU Member State (2017)
Source: own representation, based on data provided by Eurostat databases.

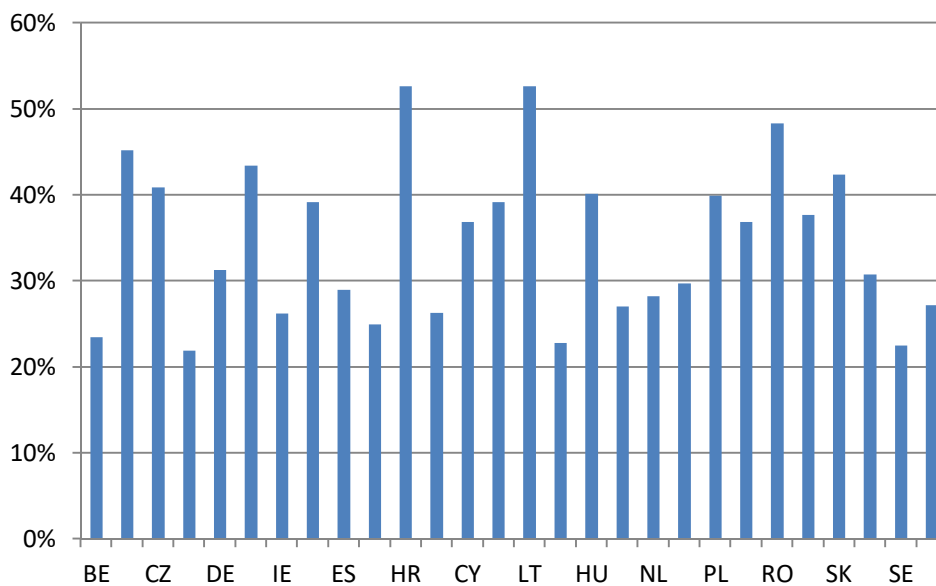


Figure 3: VTTL in potential tax receipts / EU Member State (2017)
Source: own representation, based on data provided by Eurostat databases.

The main sources of VAT deficits are reviewed by the European Commission: the level of voluntary tax compliance, fraud, avoidance, bankruptcy, insolvency or an imperfect tax administration system. Apparently, these notions seem to be very

different, but the VAT Gap actually comes from the chaining of these processes: from the use by the taxpayers of the legislative deficiencies, of the procedural gaps regarding the tax administration, by adopting an evasive behaviour.

Specifically, the procedures by which the VAT payment is avoided are listed by Ciobanu (2019): undeclared or registered sales accounting with a lower value than the real one, false invoices or the use of the same invoice several times to obtain unmerited deductions, use the exemptions provided by law without these being applicable, the deliberately erroneous registration of certain amounts that may change the amount due to the state budget.

3. Conclusions

The most important conclusion that emerges from the analyzed chart is that the level of the standard VAT rate does not guarantee the deficit in a certain interval. However, the EU Member State's experiences show that a reduced VAT rate also implies a lower risk of losing revenue from this source. Greatest deficits are encountered by the countries having fiscal revenues based especially on VAT.

The need to reduce the VAT Gap is even greater as VAT is a major source of tax revenue collection, as we presented in the last two graphs.

If the level of standard VAT rates does not decisively influence the VAT Gap, it means that the deficits are the result of the interaction of several factors, such as: organization of the tax administration system, events in the life of companies with an impact on the VAT collection - bankruptcy, insolvency, the extent of tax fraud, VAT exemptions used abusively, factors that deserve to be studied separately.

As we mentioned, the VAT collection deficit is not a mere loss of the state. Underneath it can hide a system of deficient collection, a distrust of the taxpayers in the role of the tax system or an intention of certain companies to generate profits to the detriment of social welfare.

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CHALLENGES IN THE FINANCIAL MANAGEMENT OF THE PUBLIC PENSION SYSTEM IN ROMANIA

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Abstract: *The paper presents the impact of tax measures beginning in 2016 as regard to the frequent increase of the gross minimum salary, reduction of social insurance rates, the increase of the country's average gross incomes, as well as to changing the social insurance contribution support by employees only. The implementation of the governmental plan to move from a deficit budget strategy of public social insurance to one with a surplus budget, in the context of significant non-supplementation of the number of taxpayers, represents a crucial factor for new challenges of the financial management of the public pension system in Romania. The results are planned to be seen by 2021 and consist of the continuous increase of the minimum and average nominal pension value, in the context of modernizing the system and eliminating inequalities between different categories of retirees covered by the new pension law.*

Keywords: *Public Pension; Retirement Pension; Social Security; Budget Systems.*

JEL Classification: *G22; G20; H30; H55; H61.*

1. General background of public pension system in Romania

In order to ensure the material and financial needs throughout the lives of the population exposed to known social risks, the Constitution of Romania stipulates in Article 47 that “[t]he state shall be bound to take measures of economic development and social protection, of a nature to ensure a decent living standard for its citizens... Citizens have the right to pension...”

With this in mind, the aim of the social security system in Romania, in the words of the authors of the book *Public Finance* is the following “public social security are meant to play an important role in maintaining and increasing the living standards of citizens” and the public pension system is an essential building block (Văcărel et al, 2007).

The right to social security is guaranteed by the State and is exercised based on the statutory regulations regarding the unitary public pension system which is organised and managed with the help of all major players in the economic, social and even political life, based on the following principles:

- The principle of uniqueness: the State organises and guarantees public pensions system based on the same rules of law for all participants in the system;
- The principle of obligation: private and public persons are required to take part in the public pension system, and the right to social security is exercised correlatively with the fulfilment of obligations;
- The principle of contribution: social security funds are created based on the contributions owed by those who participate in the system (Grigorie-Lăcrița, 2005).

- The principle of equality is to be ensured to all participants, tax payers and beneficiaries, based on non-discriminatory treatment for all persons of the same legal situation regarding their rights and obligations;
- The principle of social solidarity: participants to the public pension system assume mutual obligations and are granted the same rights to prevent, limit or terminate social security risks;
- The principle of allocation: according to it social security funds are redeployed for payment of obligations that are to be assigned to the public pension system.

The public pension system is strongly influenced by both the negative effects of the present demographic shift and its future change which constitutes a fundamental factor regarding foreseeable medium-term and long-term mutations especially as far as the number and the structure of the beneficiaries of the system are concerned with regard to the increase of life expectancy and the degree of the ageing of population as well as the decrease of the working population and that of birth rate. Eurostat estimates that by 2070 in Romania life expectancy of men at birth will have increased by 12 years, i.e., to 83 years and 6 months, and that of women by 10 years, i.e., the average age will be 88 years and 3 months, which indicates the need of an adequate medium-term and long-term strategic management in order to ensure the sustainability of the public pension system in Romania as well as that of the alternative/complementary ones tailored to the needs and interests of the involved persons, the beneficiaries, insured persons, employers, etc.

2.The management of the public pension system

The aim of the Romanian Government in the 2017-2020 Governing Programme is “[t]o increase the living standard of every citizen of Romania [...] an inclusive labour market and reduce inequalities through promoting coherent and realistic public policies which are to determine decent incomes devoid of discrimination.”

The strategic objectives in the area of labour and social justice target:

- employment growth of the working population to 70% until 2020 that would be able to sustain the growth of a competitive economy based on the annual growth in revenues, increase of gross minimum salary as well as the alleviation of shortage of jobs and the asymmetry of the income curve
- implementation of an adequate, equitable, and sustainable pension system which in 2021 is to reach an average turnover of income of circa 36.6%, which is to ensure decent and equitable living, non-discrimination, as well as the equality of opportunities for retirees in accordance with the principles established in both national and international applicable legal regulations.

Awareness and correct appraisal of economic, financial, social, as well as political phenomena and processes renders it necessary to improve the present management of public pension system which through its actions should perform so as to meet the expectations of population to increase living standards as it is highlighted by the authors of Management, ADVENS as well: “Management is one of the essential factors that explains why a country is rich or poor” (Farmer, R. 1988 in Nicolescu & Verboncu 1999).

The main objective of the management of the public pension system must be sound organization and operation of the system which is to be able to ensure the financing of the system and the ensure insured persons/beneficiaries of the system the ability to exercise their rights and obligations in order to reach and maintain a decent standard of living in the present as well as in the future.

The challenges the financial management of the public pension system in Romania has to face, especially as a consequence of the fiscal measures initiated with the amendments to the Fiscal Code in 2016, are based on determining factors of evolution of the rights of beneficiaries; of the number of beneficiaries/retirees/the amount of the pension, as well as those ensuring the sustainability of the public pension system from a financial point of view; the change of number of insured persons/insured income/earnings; of the amount of state social security contributions; the developments in the labour market, as well as the influence of the mode of operation of the alternative/complementary pension systems, etc.

The management of the public pension system is provided by the Ministry of Labour and Social Justice as well as central government institutions under the ministry's authority, especially the National House of Public Pensions and the decentralized, county institutions under its authority in collaboration with the Ministry of Public Finance, Financial Supervisory Authority as well as other institutions with attributions in the field.

3. The evolution and current state of the major influencing factors of the public pension system in Romania

In the past years the following tendency has been noticeable: decrease of the total number of retirees showing oscillating changes in their typology: increase of number of normal retirements and decrease of retirement based on invalidity. At the end of 2018, the total number of retirees was 5,009,497 persons, 0.8% less, i.e., 39.204 persons less than in the corresponding period of 2017.

Of the total number of retirees, 4,690,199, i.e., 93.6% were state social security retirees, while 319,298 persons, i.e., 6.37% were agriculture retirees (Statistical Bulletin 2018, Pensions and state social security).

Public social insurance retirees

At the end of 2018, as compared to 2017, the total number of state social security retirees was smaller by 1,453 persons due to the decrease of the number of invalidity retirees and the increase of that of normal retirement. Average state social security pension was 1,180 RON, increased by 109 RON. Average old-age pension was 1,340 lei, with an additional 119 lei more than in 2017.

In December 2018 of the total number of state social security retirees, 45.49% had pension not exceeding 1,000 RON, while the average state social security pension represented 23.90% of the average gross salary (4,938 lei), i.e., 39.91% of the net average earnings (2,957 lei), lagging behind the demands of 45% from social partners.

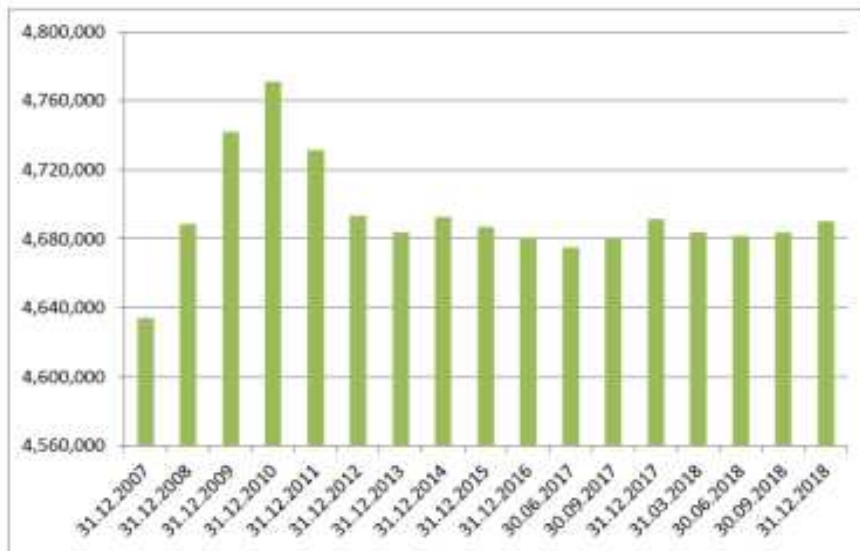


Figure 1. Evolution of state social insurance
Source: Statistical Bulletin 2018, www.mmuncii.ro

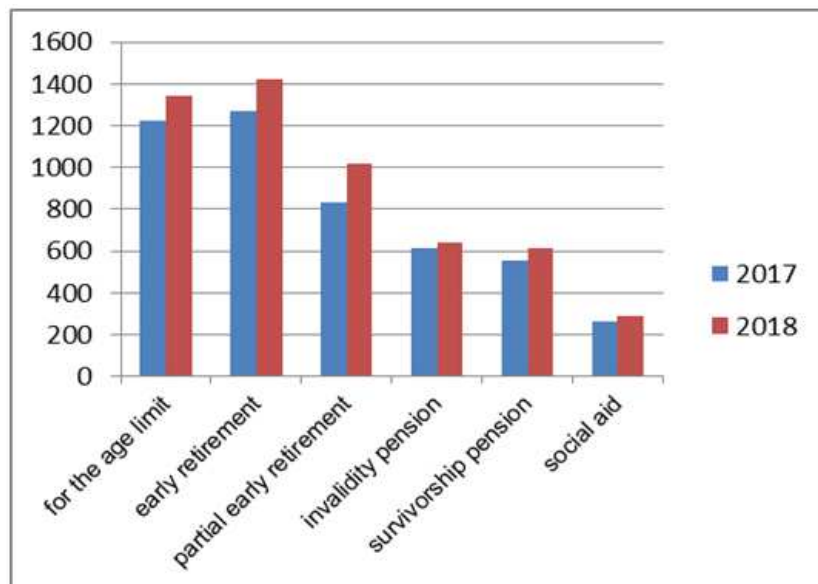


Figure 2. The evolution of the average pension by categories of retirees
Source: www.cnpp.ro, own edited

The number of retirees from the agriculture sector has been decreasing for the past two decades and continues to do so. At the end of 2018 it presented the following structure: of the total number of 319,298 retirees, 91.73% are retirements due to old

age, 0.41% are invalid, and 7.86% have survivor's pension. The average pension was 487 lei, while that for old-age was 510, which is 47 lei more than in December 2017.

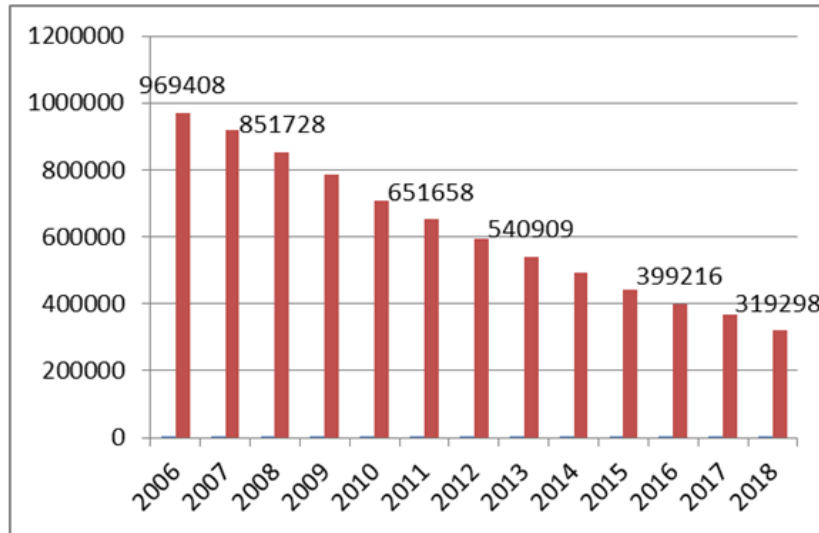


Figure 3. Retirees from the past social security system for farmers 2006-2018
Source: www.cnpp.ro , own edited



Figure 4. The minimum social pension between 2009 - 2019
Source: www.cnpp.ro , own edited

The number of persons to receive minimum social allowance (former minimum social pension) has witnessed a significant increase in the past 10 years due to mainly having attained low parameters of factors that are taken into consideration

when establishing the amount of pensions, thus: low level of earnings/taxable earned income, retirement contributions inferior to retirement benefits up to date. Since the introduction of the minimum social pension between 2009 and 2019, the amount of this benefit has been constantly increasing:

At the end of 2018 the total number of insured persons was 5,151,127 people, of which 43,649 people had social insurance contract, and the average gross income was 4,512 RON. (National House of Public Pensions)

Table 1: Second-Pillar Private pensions

Year	Total	from which:	
		employer	employee
2001	35%	23.33%	11.67%
2002	35%	23.33%	11.67%
2003	34%	24.50%	9.50%
2004	31.50%	22.00%	9.50%
2005	31.50%	22.00%	9.50%
2006	29.15%	19.65%	9.50%
2007	29.00%	19.50%	9.50%
2008	29.00%	19.50%	9.50%
2009	31.30%	20.80%	10.50%
2010	31.30%	20.80%	10.50%
2011	31.30%	20.80%	10.50%
2012	31.30%	20.80%	10.50%
2013	31.30%	20.80%	10.50%
2014	26.30%	15.80%	10.50%
2015	26.30%	15.80%	10.50%
2016	26.30%	15.80%	10.50%
2017	26.30%	15.80%	10.50%
2018	25.00%	0.00%	25.00%
2019	25.00%	0.00%	25.00%

Source: www.mmuncii.ro, own edited.

The analysis of the social insurance rate in the period of 2001-2019 shows a tendency of decrease in the first period until 2009 when the rate grew by 2.30 percentage points, from 29% reaching 31.30% with 1.3 percentage points being sustained by employers, while employees bore 1.0 percentage point. Starting with 2014, following a period of 5 years of stagnation of National Health Insurance (NHI) contributions, a significant decrease is to be noticed both on the whole and the lower levels: a drop of 5.0 percentage points of NHI contributions, thus reaching 26.30% the NHI contributions for employees having been maintained at 10.5 percentage points. Starting with 2018, following fiscal measures, the NHI rate drops to 25.00% and is to be contributed entirely by the employee, while the calculation and payment of the amount remains in charge of the employer. In case of persons insured based

on insurance contracts as well as those with statement of assurance, the employer-employee cumulative NHI rate is to be applied.

The alternative/complementary system of II Pillar of Pension Funds under private administration influences the public pension system through handing over to insured persons who have joined the II Pillar of a rate of social security contributions owed to the public pension system in order for these funds to be managed in private system so as to achieve a high private pension. Following the introduction of II Pillar in Romania, its use shows an increasing trend, with a total of 7,274,865 insured persons at the end of 2018, i.e., 199,352 more persons as compared to 2017. Most participants in the private pension system are persons aged between 25 and 45, i.e., 4,975,345 people. (National House of Public Pensions).

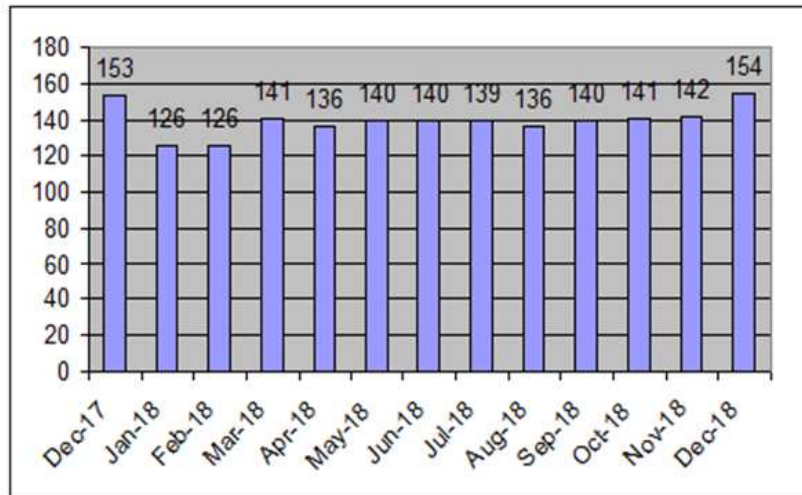


Figure 5. Average Euro contribution to II Pillar of the participants during, December 2017- Dec. 2018

Source: www.cnpp.ro , own edited

The evolution of average gross salary used to substantiate state social security budget.

In 2019 the average gross salary used to substantiate state social security budget was 5,163 lei.

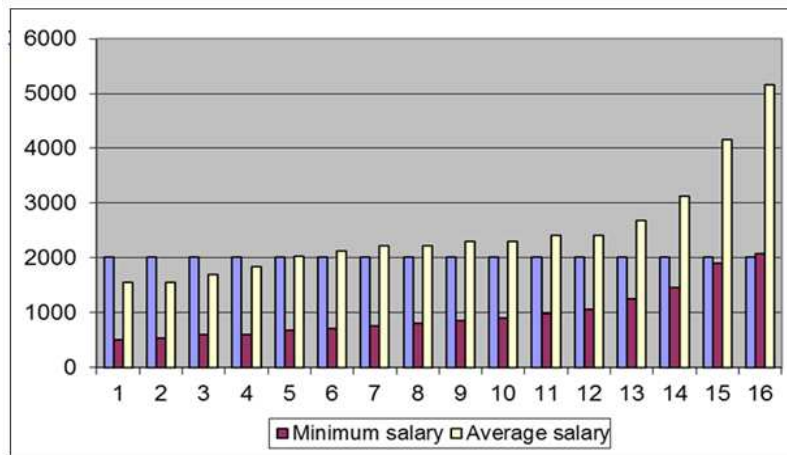
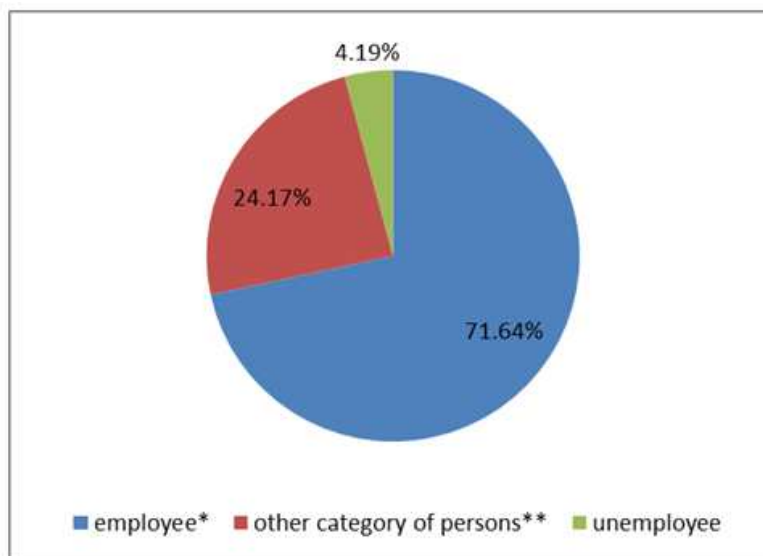


Figure 6. Evolution of minimum and average salary of country
Source: www.mmuncii.ro , own edited

Employment rate of population

In 2018 the working population of Romania was 9,069 thousand people of which 8,689 thousand were employed while 380 thousand were unemployed.



*Including the armed forces and related departments as well as people who work in the informal sector and on the black market.

**Other categories of employed individuals: owners, self-employed, contributing family workers and members of agricultural associations or cooperatives.

Figure 7. The employment rate of the population able to work

Source: www.mmuncii.ro , own edited

In 2018 the employment rate of the population able to work (age 15-64) was of 64.8%, while the employment rate of persons aged between 20-64 was of 69.9% as opposed to the aim of 70% established in light of Europe 2020 Strategy. Unemployment rate decreased from approximately 4.9% to 4.2%, i.e., 0.7% less than the previous year.

4. Conclusion

Having in mind the factors that influence the public pension system, the management of this system must have in mind continuous sustainability taking into account the following findings:

- In the course of 2018 proceeds from contributions to social security increased by 19.1%, exceeding by 1% the growth of the gross salary at national level due to the increase of the number of insured persons, mainly employees, and those with statement of assurance, while witnessing a slight decrease of insured persons based on insurance contract; to the increase of the guaranteed minimum income, to the gross average earnings mostly in the budgetary sector.
- The amounts transferred from the state social security budget to the II Pillar of pension were in total 7.1 billion lei which constituted 99.3% of the annual program estimated for the II Pillar of pension.
- According to the budgetary provisions for 2019, the state social security budget associated to the public pension system registers revenues of 71,662,090 thousand lei, while expenses are 68,761,379 thousand lei, expecting a surplus of 2,900,711 lei both in the case of commitment appropriations and budget appropriations. (Law on State Social Insurance Budget for the year 2019)
- The financial sustainability of the public pension system is based on the increase of the revenues from state social security projected for the interval between 2017-2022 the main resource of which is the steady and significant increase of the gross domestic product from 856.7 billion lei achieved in 2017 to 1,261.5 billion lei in 2022, the projected increase being of 47.25% (National Commission for Strategy and Prognosis, 2019 Winter Prognosis).
- There are still perspectives for financing the II Pillar of Pension and the implementation of the new law on public pensions which through its amendments, especially the new algorithm for calculating the pensions, will surely achieve an equity and a superior level of benefits to all retirees and insured persons of the public pension system in Romania.

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TRADITIONAL VS. FUZZY INDICATORS OF MODERN PORTFOLIO THEORY

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Abstract: *This paper offers another perspective upon the well-known indicators of Modern Portfolio Theory (created by Harry Markowitz): arithmetic mean or geometric mean for return on financial assets, standard deviation or variance for financial risk, and covariance or correlation between the assets included in the portfolio. This perspective consists of modelling these statistical indicators, using the triangular fuzzy numbers, due to the advantages they have. The first advantage of the fuzzy approach is the returns on financial assets, and the financial asset risks are expressed in intervals with minimum and maximum values, called the triangular fuzzy numbers. This advantage makes the decision of investment more accurate, especially considering the volatility of financial assets. Using triangular fuzzy numbers in estimating the returns based on history of trading, can overcome the fact that past performance is no guarantee for future results, due to the different possibilities of fuzzification. In this paper, the returns will be fuzzified considering the mode value (the most frequent value in a given period of time) of the returns from the past period. This statistical value will help the investors to evaluate the frequency of the last returns and to estimate the most probably frequent value of the returns for the next period. So, the estimation, not only the decision, will be more reliable. The second advantage of using the triangular fuzzy numbers in modelling the financial return and the financial risk is their membership function, which allows the investors to evaluate their investments, depending on the membership degree. The returns of the assets that are closer to the mode return, will be most likely the returns for the next period. The returns that are closer to the limits of the fuzzy intervals, will be less probably the returns for the next period. This assumption has its own gap: the market should have the same conditions as the last period.*

Keywords: *triangular fuzzy number (TFN); performance indicators; financial return; financial risk; financial assets.*

JEL Classification: *G11; G10.*

1. Introduction

The portfolio selection theory comes from the assumption that investors seek to maximize the return while minimizing the risk of investments, and they are willing to assume a higher risk only if a higher expected return compensates the risk. Based on this assumption, the investor's portfolio can be analyzed within two balanced dimensions: the expected return of the portfolio and the risk of the portfolio. The expected return is calculated as a weighted mean of the expected individual returns. The financial risk - synonymous with volatility in Markowitz's theory - is measured by these tools: " (1) calculation of expected return, (2) the variance of an expected

return; (3) the standard deviation from an expected return, (4) the covariance of a portfolio of securities, and (5) the correlation between investments ” (Mangram, 2013).

2. Literature review

The portfolio diversification was a subject of interest for many researchers. Markowitz was the author of the portfolio diversification theory or Modern Portfolio Theory (MPT), which was developed by many following researchers. Sharpe (1964) built CAPM (Capital Assets Price Model), Samuelson and Merton (1969) used the stochastic programming in diversification, Watada (1997) proposed the vague goals of the financial return and risk in portfolio selection. Carlsson et al. (2002) introduced the trapezoidal fuzzy number as financial returns in portfolio selection; Huang (2006) determined financial return assets as stochastic variables with fuzzy information and Liagkouras and Metaxiotis (2018) proposed the use of fuzzy logic for mean-variance portfolio optimization with transaction costs. (Sun et al., 2019:6).

Using fuzzy logic in Modern Portfolio Theory is a challenging direction for portfolio optimization, due to the capacity of fuzzy logic to manage the vagueness of input parameters (expected return and financial risk), in order to minimize the estimation errors or to avoid the phenomenon of “Markowitz optimization enigma,” coined by Michaud in 1989 (Marakbi, 2016).

3. Modelling Triangular Fuzzy Financial Asset Return and Risk

Modeling financial assets and risks with triangular fuzzy numbers is due to the volatility of financial assets that form a portfolio. This volatility of assets determines different levels of the intensities of financial return and risk: high, low, or uncertain values of these intensities. In order to analyze the volatility of assets, the first step is to transform real numbers in fuzzy numbers and to create an adequate membership function. Thus, financial return and financial risk have to be transformed from the Markowitz form to fuzzy form.

Definition 1: Let the financial asset return on the financial market be R_a , and let $F[0,1]$ be the rules set for all fuzzy triangular numbers. The fuzzy number (R_a) is considered the triangular number of the financial asset return: $R_a = \{r, \mu_r / r \in R_a\}$, where $\mu_r : R_a \rightarrow [0,1]$, if the membership function is the following:

$$\mu_r = \begin{cases} 1 - \frac{r_x - r_a}{r_b - r_a}, \text{ for } r_a \leq r_x \leq r_b \\ 1, \text{ for } r_x = r_b \\ 1 - \frac{r_c - r_x}{r_c - r_b}, \text{ for } r_b \leq r_x \leq r_c \\ 0, \text{ for the values out of the range } [0,1] \end{cases}$$

Definition 2: Let the triangular fuzzy number that defines the financial asset return be of the form: $R_a = \{r, \mu_r / r \in R_a\}$, for every $i = \overline{1, n}$. The set $[R_a]^\alpha = [R_{a1}(\alpha), R_{a2}(\alpha)]$, for every $i = \overline{1, n}$ is considered the level set of triangular fuzzy number R_a , where:

$$\begin{aligned} R_{a1}(\alpha) &= (r_b - r_a)\alpha + r_a; \\ R_{a2}(\alpha) &= r_c - (r_c - r_b)\alpha. \end{aligned}$$

Definition 3: Let the financial asset risk on the financial market be (σ_a) , and let $F[0,1]$ be the rules set for all fuzzy triangular numbers. The fuzzy number (σ_a) is considered the triangular number of the financial asset risk: $\sigma_a = \{\sigma, \mu_\sigma / \sigma \in \sigma_a\}$, where $\mu_\sigma : \sigma_a \rightarrow [0,1]$ if the membership function is the following:

$$\mu_\sigma = \begin{cases} 1 - \frac{\sigma_x - \sigma_a}{\sigma_b - \sigma_a}, \text{ for } \sigma_a \leq \sigma_x \leq \sigma_b \\ 1, \text{ for } \sigma_x = \sigma_b \\ 1 - \frac{\sigma_c - \sigma_x}{\sigma_c - \sigma_b}, \text{ for } \sigma_b \leq \sigma_x \leq \sigma_c \\ 0, \text{ for the values out of the range } [0,1] \end{cases}$$

Definition 4: Let the triangular fuzzy number that defines the financial asset return be of the form: $\sigma_a = \{\sigma, \mu_\sigma / \sigma \in \sigma_a\}$, for every $i = \overline{1, n}$. The set $[\sigma_a]^\alpha = [\sigma_{a1}(\alpha), \sigma_{a2}(\alpha)]$, for every $i = \overline{1, n}$ is considered the level set of triangular fuzzy number σ_a , where:

$$\begin{aligned} \sigma_{a1}(\alpha) &= (\sigma_b - \sigma_a)\alpha + \sigma_a; \\ \sigma_{a2}(\alpha) &= \sigma_c - (\sigma_c - \sigma_b)\alpha. \end{aligned}$$

Observation 1: Financial asset return may take values in the range $[r_x - r \leq r \leq r + r_x]$ and financial asset risk may take values in the range $[\sigma_x - \sigma \leq \sigma \leq \sigma + \sigma_x]$, where $r_x, \sigma_x \in R$.

The two triangular fuzzy numbers that characterize the return on asset and the financial risk are as follows:

$$\begin{aligned} R_{ai} &= (r_{ai} \quad r_{bi} \quad r_{ci}), \text{ for every } i = \overline{1, n}; \\ \sigma_{ai} &= (\sigma_{ai} \quad \sigma_{bi} \quad \sigma_{ci}), \text{ for every } i = \overline{1, n}. \end{aligned}$$

4. Modelling the financial expected return with fuzzy triangular numbers

4.1. Traditional versus triangular fuzzy return on financial asset

The financial asset return is a performance indicator that provides information about the earnings that investors gained over a period. Assuming that no dividends were paid over the period, the formula of financial asset return is $R_a = (P_{t1} - P_{t0}) / P_{t0}$ (Chen, 2013), where P_t and P_{t-1} is the price of the asset in time t and $t-1$. If dividends were paid, the formula of financial asset return is $R_a = (P_t - P_{t0} + D_1) / P_{t0}$, where D_1 is dividend at time t . The return of a financial asset over a time horizon t (R_{ai}) can be described as follows:

$$R_{ai} = \begin{pmatrix} t_0 & t_1 & t_3 & \dots & t_n \\ R_{a1} & R_{a2} & R_{a3} & \dots & R_{an} \end{pmatrix}$$

Proposition 1: The most frequent value of the return in the last period will be probably the most frequent value of the return for the next period. (if the market conditions remain the same).

This proposition can be illustrated by the following example:

Example 1: There are two financial assets A_1 and A_2 , which are included in a portfolio. The data about their returns in the year N are as follows:

$$R_{a1} = \begin{pmatrix} M_1 & M_2 & M_3 & M_4 & M_5 & M_6 & M_7 & M_8 & M_9 & M_{10} & M_{11} & M_{12} \\ 0.1 & 0.4 & 0.6 & 0.5 & 0.3 & 0.7 & 0.7 & 0.8 & 0.7 & 0.7 & 0.6 & 0.7 \end{pmatrix}$$

$$R_{a2} = \begin{pmatrix} M_1 & M_2 & M_3 & M_4 & M_5 & M_6 & M_7 & M_8 & M_9 & M_{10} & M_{11} & M_{12} \\ 0.5 & 0.5 & 0.3 & 0.4 & 0.6 & 0.7 & 0.5 & 0.6 & 0.7 & 0.8 & 0.5 & 0.9 \end{pmatrix}$$

From this data series, the most frequent value of the returns for A_1 and A_2 is 0.7 and 0.5. However, there are also maximum and minimum values for the returns of these assets. Considering this volatility, the returns for these assets may be fuzzified in the triangular fuzzy number as: $R_{a1} = (0.1 \ 0.7 \ 0.8)$ and $R_{a2} = (0.3 \ 0.5 \ 0.9)$. The minimum value of the fuzzy number represents the minimum value of assets return in the year N, while the middle value is obtained through the mode function, which is the most frequently occurring return in the year N. The membership function of these financial assets A_1 and A_2 represents the probability degree of return realization. Because of its frequency, the mode value of the assets represents the highest degree of realisation, and the margins of the fuzzy numbers represent the lowest grade of realisation (the probability of obtaining 0,8 for A_1 and 0,9 for A_2 in

next period, is very low, because of the frequency of these values). The membership functions of these fuzzy returns can be described in Figure 1.

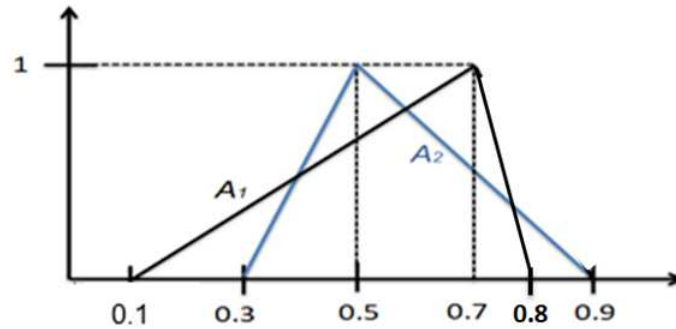


Figure 1. The triangular fuzzy number for financial asset returns A_1 and A_2

4.2. The expected financial asset return (Markowitz's Theory)

According to Modern Portfolio Theory, the expected financial return "can be viewed as the historic average of a stock's return over a given period of time" (Mangram, 2013). The expected return for asset i , using the non-fuzzy number, is calculated by arithmetic mean, $E(R_{ai}) = \frac{1}{n} \sum_{j=1}^n R_j$, where R_j is the return of the asset i in j -time, when $j = \overline{1, n}$.

Definition 5: The expected value of the return for asset A_i is the medium value of the triangular fuzzy return $R_{ai} = (r_{ai} \ r_{bi} \ r_{ci})$ (Luengo, 2010):

$$E_f(R_{ai}) = \frac{r_{ai} + 4r_{bi} + r_{ci}}{6} = \frac{1}{6}(r_{ai} + r_{ci}) + \frac{2}{3}r_{bi}$$

where: $E_f(R_{ai})$ - triangular fuzzy expected return for asset i ;

$r_{ai} \ r_{bi} \ r_{ci}$ - left, peak, right elements of triangular fuzzy return.

The expected return for the portfolio with A_i assets, where $i = \overline{1, n}$, is:

$$E_f(R_a) = \frac{1}{6}(r_{ai} + 4r_{bi} + r_{ci})$$

Example 2 (Continuing Example 1):

According to the Markowitz Theory, the expected non-fuzzy returns (means of the returns in the year N) for assets A_1 and A_2 are: 0.56 for A_1 and 0.58 for A_2 .

The expected fuzzy rate return for the two assets A_1 and A_2 with financial returns: R_{a1} (0.1 0.7 0.8) and R_{a2} (0.3 0.5 0.9), considering the above formulas, are:

$$E_f(R_{a1}) = \frac{1}{6}(r_{a1} + r_{c1}) + \frac{2}{3}r_{b1} = \frac{1}{6}(0.1 + 0.8) + \frac{2}{3}0.7 = \left(\frac{1}{6}0.9 + \frac{2}{3}0.7\right) = 0.62$$

$$E_f(R_{a2}) = \frac{1}{6}(r_{a2} + r_{c2}) + \frac{2}{3}r_{b2} = \frac{1}{6}(0.3 + 0.9) + \frac{2}{3}0.5 = \left(\frac{1}{6}0.12 + \frac{2}{3}0.5\right) = 0.53$$

From this example, it can be observed that the non-fuzzy financial return and the triangular fuzzy return for asset A_1 have different values; the same goes for A_2 . This difference comes from the fact that the non-fuzzy return does not consider the frequency of the return values in year N, while the triangular return considers the frequency of the peak value in year N and offers a higher weight of the most frequent return value. This means that the fuzzy expected return is more feasible based on trades history.

5. Modelling the financial risk with fuzzy triangular numbers

Financial risk “refers to the chance that the actual outcome (return) from an investment will differ from an expected outcome” (Omisore, 2012). In Markowitz Theory, the formula for financial risk is standard deviation from expected return, the square root of variance:

$$\sigma_i^2 = \frac{1}{n-1} \sum_{i=1}^j (R_j - E(R_i))^2$$

Where: $E(R_i)$ - is the arithmetic mean for each asset i .

Definition 6: The risk of asset A_i , with the return: $R_{ai} = (r_{ai} \ r_{bi} \ r_{ci})$, is as follows (Boloş et al, 2019):

$$\sigma_i^2 = \frac{1}{4}[(r_{bi} - r_{ai})^2 + (r_{ci} - r_{bi})^2] + \frac{2}{3}[r_{ai}(r_{bi} - r_{ai}) - r_{ci}(r_{ci} - r_{bi})] + \frac{1}{2}(r_{ai}^2 + r_{ci}^2) - \frac{1}{2}E_f^2(R_{ai})$$

Example 4: Let the same assets from Example 1, have the same financial returns: R_{a1} (0.1 0.7 0.8) and R_{a2} (0.3 0.5 0.9). The non-fuzzy variances of these returns are: 0.46 for A_1 and 0.31 for A_2 .

The triangular fuzzy variances for A_1 and A_2 are:

$$\sigma_{a1}^2 = \frac{1}{4}[(0.7 - 0.1)^2 + (0.8 - 0.7)^2] + \frac{2}{3}[0.1(0.7 - 0.1) - 0.8(0.8 - 0.7)] + \frac{1}{2}(0.1^2 + 0.8^2) - \frac{1}{2}(0.62)^2 = 0.207$$

$$\begin{aligned}\sigma_{a_2}^2 &= \frac{1}{4}[(0.5 - 0.3)^2 + (0.9 - 0.5)^2] + \frac{2}{3}[0.3(0.5 - 0.3) - 0.9(0.9 - 0.5)] \\ &\quad + \frac{1}{2}(0.3^2 + 0.9^2) - \frac{1}{2}(0.53)^2 = 0.159\end{aligned}$$

6. Modelling the covariance with triangular fuzzy numbers

Covariance measures the relationship between the returns for one asset and returns for another. If the covariance is positive, the returns of the assets are positively related. If the covariance is negative, the return of the assets is negatively related. "It is necessary to avoid investing in securities with high covariances within themselves" (Markowitz, 1952:89).

In Modern Portfolio Theory, the covariance is used for portfolio diversification. In order to reduce portfolio risk, an investor must include assets with negative covariances. By adding financial assets that have negative covariances, the risk of the portfolio is minimized.

The non-fuzzy formula for covariance is:

$$Cov(R_{a_1}, R_{a_2}) = \frac{1}{n-1} \sum_{j=1}^n (R_{1j} - E(R_{a_1}))(R_{2j} - E(R_{a_2}))$$

Definition 7: Considering the level sets of the returns for assets A_1 and A_2 :

$$R_{a_{11}}(\alpha) = (r_{b11} - r_{a11})\alpha + r_{a11};$$

$$R_{a_{12}}(\alpha) = r_{c11} - (r_{c11} - r_{b11})\alpha, \text{ for financial return of asset } A_1;$$

$$R_{a_{21}}(\alpha) = (r_{b21} - r_{a21})\alpha + r_{a21};$$

$$R_{a_{22}}(\alpha) = (r_{b21} - r_{a21})\alpha + r_{a21}, \text{ for financial return of asset } A_2;$$

the covariance between financial returns of assets A_1 and A_2 is:

$$\begin{aligned}Cov(R_{a_1}, R_{a_2}) &= \frac{1}{4}[(r_{b11} - r_{a11})(r_{b21} - r_{a21}) + (r_{c11} - r_{b11})(r_{c21} - r_{b21})] \\ &\quad + \frac{1}{3}\{[(r_{a21}(r_{b11} - r_{a11}) + r_{a11}(r_{b21} - r_{a21})) \\ &\quad - [r_{c11}(r_{c21} - r_{b21}) + r_{c21}(r_{c11} - r_{b11})]]\} \\ &\quad + \frac{1}{2}(r_{a11}r_{a21} + r_{c11}r_{c21}) + \frac{1}{2}E_f(R_{a_1})E_f(R_{a_2})\end{aligned}$$

Example 5: The covariance between the returns of the assets, from first example, A_1 and A_2 is: 0.0119. That means that these two assets are positively related; when the return of first asset increases, the return of the second asset increases as well. On the other hand, when the first asset has a decreasing return, the return of the

second asset follows the same pattern. The fuzzy covariance is determined as follows:

$$\begin{aligned}
 Cov(R_{a1}, R_{a2}) &= \frac{1}{4}[(0.7 - 0.1)(0.5 - 0.3) + (0.8 - 0.7)(0.9 - 0.5)] \\
 &+ \frac{1}{3}\{[(0.3(0.7 - 0.1) + 0.1(0.5 - 0.3)] - [0.8(0.9 - 0.5) + 0.9(0.8 - 0.7)]\} \\
 &+ \frac{1}{2}(0.1 \cdot 0.3 + 0.8 \cdot 0.9) + \frac{1}{2}0.62 \cdot 0.53 = 0.51
 \end{aligned}$$

The fuzzy covariance is positively expressed in non-fuzzy number, because the multiplying and dividing arithmetical operations have real results, not triangular fuzzy results. The positive covariance represents a positive relationship between the two returns of the assets A_1 and A_2 ; it is the same positive result as the result of traditional covariance. In order to reduce the overall risk, the investors should not include these assets in the same portfolio.

7. Conclusion

In conclusion, the advantages and disadvantages of using fuzzy logic in modelling the indicators of Modern Portfolio Theory are summarized in the following SWOT Analysis:

Table 1. SWOT Analysis of the Portfolio Selection with Triangular Fuzzy Number

Strengths	Weaknesses
<ul style="list-style-type: none"> • Using fuzzy numbers - that are expressed in sets of real numbers, instead of using standard real numbers - is more reliable when the investor wants to estimate the risk or the gain for his portfolio, or for his future transactions; • Also, investment decision involves uncertainty. The expected return and the risk that the investor may assume are more accurate if they are expressed in sets of values, or triangular fuzzy number; • The membership function of the financial asset return or the membership function of the financial risk indicates the most frequent value in a given period and the degree of attaining the 	<ul style="list-style-type: none"> • The expected return and risk are analysed based on the history of the investor's trades. Even though the decision process is more flexible with the triangular fuzzy number, the investor cannot estimate the possibility to obtain the returns that are expressed as intervals. The risk of not attaining the past values remains. • The volatility of the financial market has a systematic risk and an unsystematic risk. The triangular fuzzy number does not consider the systematic risk. The values of the expected return can exceed the limits of the triangular fuzzy set.

<p>other values of return. By using this component of the fuzzy number, the investor will be informed about the realization degree of the expected return values, analysing the frequency of the returns in the previous period;</p> <ul style="list-style-type: none"> • The covariance considers the membership function of the returns for the assets; thus, it evaluates the correlation between the returns, given the trend of the returns. 	
Opportunities	Threats
<ul style="list-style-type: none"> • Providing the possibility for the investor to estimate the probability of attaining the past returns, in the next period, this can be a direction for developing the Modern Portfolio Theory with the fuzzy number. • Extending the analysis period in order to obtain relevant results and therefore to help investors to estimate exactly the return and the risk for the portfolio. The longer the analysis period – the more accurate estimation. 	<ul style="list-style-type: none"> • If there are more assets in the portfolio, the calculation of Markowitz's indicators (standard deviation, covariance, and correlation coefficient) will be more complicated.

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**SECTION: *MANAGEMENT, MARKETING,
ECONOMIC INFORMATICS AND CYBERNETICS***

WHAT IS AN ETHICAL LEADER LIKE? – A STUDY BASED ON BUSINESS STUDENTS' OPINIONS

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Abstract: *Nowadays, ethical behaviour, namely responsible behaviour towards the stakeholders of a company, is more and more required. Companies fulfil this expectation if their leaders are committed to an ethical approach, and if the whole organization is permeated with a moral and ethical approach through their example. Therefore, managers play a key role in the ethical operation of companies, and although bottom-up initiatives and objectives are important, they will have no effect without the support of leaders. The ideal situation is if the manager is ethically in control, both of his subordinates and of his company, from the beginning, i.e. the internal demands and the external expectations are both met. In my present study, I aim to investigate ethical leadership behaviour among students in higher education in economics, as most of them are likely to be leaders in their later careers. In my study, I first review the most important and most frequently cited definitions and theories of ethical leadership. Then, with the help of the Ethical Leadership Scale developed by Brown, Treviño and Harrison (2005), I examine what the students of the Faculty of Economics at the University of Debrecen think of leaders' ethical behaviour. In my research, 269 students took part, evaluating the 10 items of the ELS. They responded on the basis of their expectations of an ethical leader; that is to say they did not evaluate a particular individual. In qualitative analyses, I used averages, standard deviations and simpler statistical functions in order to find relationships among students' answers. In our students' opinion, the most important traits of an ethical leader are the following: "can be trusted"; "makes fair and balanced decisions" and "listens to what employees have to say". At the same time an ethical leader's least important trait is: "disciplines employees who violate ethical standards". Women consider "listens to what employees have to say" and "defines success not just by results but also the way that they are obtained" more important. Regarding smoking, previous ethical studies and work experiences, I also tried to search for relationships in students' answers; however, I found only some significant differences in my data base. Considering the respondents' status as full time or correspondence students, there was no significant difference in the answers. In some of the questions I examined, I found a moderate correlation, which means that values of certain items move together among the 10 items.*

Keywords: *ethical leadership; business students; ethical attitudes.*

JEL Classification: *M19; I23.*

1. Introduction

Ethical operations are becoming increasingly important in modern organizations, and the most common aspects of this are the development of social responsibility and its integration into everyday operations. This endeavour is partly due to the expectations of external market players and partly to internal, organizational intentions and goals. Internal organizational motivation for ethical activity may come from employees (e.g. employees' volunteer initiatives), but may also be the result of (senior) managerial ambitions. Moreover, we also know companies which are established not only to acquire more and more profit for their own purposes, but also to serve other socially responsible goals (e.g. Greenpeace). However, none of these decisions can be fully implemented if the organization's leaders display negative attitudes, i.e. if they are not active and do not support them. Leaders' attitudes are key from an ethical behaviour point of view. That is why I will here consider all the theoretical literature and important empirical research related to this topic. I started researching in this field in order to examine the ethical attitudes of business students participating in economic education, with the aim of exploring what ethical attitudes they have as a prospective employees, or later as leaders.

In my paper I first give an overview of the notion and theories of ethical leadership. In the second part of my article, I introduce my own empirical research, which was conducted among students at the Faculty of Economics and Business of the University of Debrecen.

2. Theoretical Background

In this chapter I will try to summarize some important approaches and theories related to ethical leadership.

The most frequently cited studies in this field are linked with the names of Brown and Treviño and their colleagues. In their study, which was published in 2000, they claim ethical leadership is composed of two pillars: the moral personality and the moral manager. Table 1 summarizes the elements of these two pillars. In the authors' opinion we can speak about an ethical leader if he/she is a moral personality and can, at the same time, be described as a moral manager.

Table 1. The Two Pillars of Ethical Leadership

Moral Person (Ethical)	Moral Manager (Leadership)
<i>Traits:</i> <ul style="list-style-type: none">• Integrity• Honesty• Trustworthiness	Role Modelling Through Visible Action
<i>Behaviours:</i> <ul style="list-style-type: none">• Do the Right Thing• Concern for People• Being Open• Personal Morality	Rewards and Punishment

Moral Person (Ethical)	Moral Manager (Leadership)
<i>Decision-Making:</i> <ul style="list-style-type: none"> • Hold to Values • Objective/Fair • Concern for Society • Follow Ethical Decision Rules 	Communicating About Ethics And Values

Source: Treviño, Hartman and Brown (2000:131)

In their 2005 study, Brown, Treviño, and Harrison defined the concept of ethical leader as follows: “the demonstration of normatively appropriate conduct through personal actions and interpersonal relationships, and the promotion of such conduct to followers through two-way communication, reinforcement, and decision-making” (Brown et al., 2005:120). The second part of their article presented the research that had led them to develop the so-called Ethical Leadership Scale (ELS). Since then this scale has been used by many researchers to evaluate ethical leadership behaviour, and in the second part of this work I also use it in my empirical research. The statements to be evaluated in the ELS test are presented in Table 2.

Table 2. The Ethical Leadership Scale’s items

Number of the question	Statement to be evaluated
1.	Listens to what employees have to say.
2.	Disciplines employees who violate ethical standards.
3.	Conducts his/her personal life in an ethical manner.
4.	Has the best interests of employees in mind.
5.	Makes fair and balanced decisions.
6.	Can be trusted.
7.	Discusses business ethics or values with employees.
8.	Sets an example of how to do things the right way in terms of ethics.
9.	Defines success not just by results but also the way that they are obtained.
10.	When making decisions, asks “what is the right thing to do?”

Source: Brown, Treviño and Harrison (2005:125)

Some authors approach an ethical leader’s behaviour by characterizing the differences between ethical and unethical behaviour. In Howell and Avolio’s (1992) study we read the following description of the unethical leader:

- uses power only for personal gain or impact
- promotes his/her own personal vision
- censures critical or opposing views
- demands his/her own decisions be accepted without question
- one-way communication

- insensitive to followers' needs
- relies on convenient external moral standards to satisfy self-interest (Howell and Avolio, 1992:4).

The ethical leader, on the other hand, can be characterized as follows:

- uses power to serve others
- aligns vision with followers' needs and aspirations
- considers and learns from criticism
- stimulates followers to think independently and to question the leader's view
- open, two-way communication
- coaches, develops and supports followers: shares recognition with others
- relies on internal moral standards to satisfy organizational and societal interests (Howell and Avolio, 1992:4).

Another excellent author in the literature on leadership is Gary Yukl, who summarised the definition of ethical leadership as follows: "... the criteria relevant for judging ethical behaviour of a leader include individual values, conscious intentions, freedom of choice, stage of moral development, types of influence used, and use of ethical as well as unethical behaviour" (Yukl, 2006). In 2002 Yukl and his colleague also collated the features of ethical and unethical leaders. Table 3 presents the characterization of the two leader types.

Table 3. Ethical and unethical leadership traits by Yukl and Yukl

Criterion	Ethical leadership	Unethical leadership
Use of leader power and influence	Serves followers and the organization	Satisfies personal needs and career objectives
Handling diverse interests of multiple stakeholders	Attempts to balance and integrate them	Favours coalition partners who offer the most benefits
Development of a vision for the organization	Develops a vision based on follower input about their needs, values and ideas	Attempts to sell a personal vision as the only way for the organization to succeed
Integrity of leader behaviour	Acts consistently with espoused values	Does what is expedient to attain personal objectives
Risk taking in leader decisions and actions	Is willing to take personal risks and make necessary decisions	Avoids necessary decisions or actions that involve personal risk to the leader
Communication of relevant information operations	Makes a complete and timely disclosure of information about events, problems and actions	Uses deception and distortion to bias follower perceptions about problems and progress
Response to criticism and dissent by followers	Encourages critical evaluation to find better solutions	Discourages and suppresses criticism or dissent
Development of follower skills and self-confidence	Uses coaching, mentoring and training to develop followers	Deemphasizes development to keep followers weak and dependent on the leader

Source: Yukl and Yukl (2002:354)

At the end of my literature analysis, I present some measurement tools based on Chikeleze's work related to ethical leadership behaviour. Between 1998 and 2013, five types of scales/questionnaires were created which are suitable for this. These are given in Table 4 below.

Table 4. Ethical Leadership Measurements

Year	Instrument	Authors	Measurements
1998	Perceived Leader Integrity Scale (PLIS)	Craig and Gustafson	Trust, civility, self-centered, honest, evil
2005	Ethical Leadership Scale (ELS)	Brown, Treviño, and Harrison	Fairness, trust, "Do the right thing"
2010	Leadership Virtues Questionnaire (LVQ)	Riggio, Zhu and Reina	Prudence, fortitude, temperance and justice
2011	Ethical Leadership Work Questionnaire (ELWQ)	Kalshoven, Den Hartog, and De Hoogh	Fairness, integrity, ethical guidance, people orientation, power sharing, role clarification and concern for sustainability
2013	Ethical Leadership Questionnaire (ELQ)	Yukl, Mahsud, Hassan, and Prussia	Honesty, fairness, integrity, sets example, concern for values

Source: Chikeleze (2014:84)

Before turning to the results of the empirical research, I must point out an important research finding: managers' self-evaluation of their performance is not related to the ratings of their managers or subordinates (Harris and Schaubroeck, 1988; Hogan et al., 1994). It is therefore unlikely that managers can give a real, unbiased assessment of their ethical leadership style. Rather, the evaluation of subordinates gives the most accurate estimate of the ethical leadership of their superiors, especially when the subordinates work closely with the leader and have an insight into how the leader treats others and makes decisions (Brown and Treviño, 2006:610).

3. Methodology

Having presented the theoretical literature, here I will review the methodological background of my own research.

The idea of my research is based upon the Ethical Leadership Scale (ELS) published by Brown, Treviño and Harrison in 2005. This scale ultimately includes 10 statements about how respondents judge the ethical leader. In my present study, I asked the respondents to evaluate every item on a 7-grade Likert scale, according to their opinions about an ethical leader. I would like to emphasize that this did not involve an evaluation of an actual leader (for example their boss), but the expectations held by the participants emerged during the filling of the questionnaire

(i.e. I believe this gives us a picture of ideal ethical leadership behaviour). The questionnaires were filled in anonymously on paper and the answers were digitized. The questionnaires were completed in February and March 2019 by students at the Faculty of Economics at the University of Debrecen. The full sample element number is 271, and two of the questionnaires were unusable. Consequently, I was able to analyse 269 students' questionnaires, of which 96 were from men (35.7%) and 172 from women (63.9%); 1 student did not respond to this question. Regarding types of education, 232 of the respondents (85.6%) were full-time students, the others were attending correspondence courses. In terms of their year, 230 were first year students (85.5%), 18 were second year students (6.7%), and 20 were third year students (7.4%); 1 student did not respond to this question. Our students attend the following programs: the tertiary education vocational course in Business Administration and Management, the Bachelor's course in Business Administration and Management and the same level courses in the field of International Business, Finance and Accounting. The Master's programmes were the MA in Human Resource Counselling, the MSc in Management and Leadership and the MSc in Business Administration. In addition to the above, in the interest of further analysis, I asked whether our students smoked, had taken a course in ethics during their studies, and whether they had work experience. On the basis of these last three questions, I made comparisons in order to explore the students' ethical attitudes related to ethical leadership.

Considering the number of elements involved, the examined sample is adequate but not representative. This in itself restricts the ability to generalize the conclusions drawn from the analysis of the data, but provides the opportunity to analyse the data obtained through simple calculations. During the analyses, I analysed means and standard deviations, and tried to find significant differences, using independent two sample t-tests, between different variables (gender, the existence or lack of previous ethical studies and the existence or lack of work experience). Furthermore, considering the whole sample, I used the Pearson's correlation indicator to illustrate the relationship between individual issues. The value of the correlation coefficient can be interpreted by Evans (1996), as follows:

- 0.00 - 0.19 : "very weak"
- 0.20 - 0.39 : "weak"
- 0.40 - 0.59 : "moderate"
- 0.60 - 0.79 : "strong"
- 0.80 - 1.0 : "very strong" connection between the examined factors.

In the next section I present the results of my empirical research.

4. Results

Based on the analysis of my empirical database, I can state that according to the opinion of the students of the Faculty of Economics, the most important characteristic of an ethical leader is trustworthiness, because this statement has the highest average. That is to say, in this question students' views are quite homogeneous, as the standard deviation of the answers is the lowest. Based on

average values, the next most important characteristic is fair and equitable decision-making, and listening if your colleagues want to say something; the average value for both these answers is over 6. The majority of the questions examined are found in the “mid-range” with means between 5.4 and 5.9, with a slightly higher standard deviation which indicates the division of respondents’ opinions on this issue. Our students were least likely to associate an ethical leader with the ability to punish those workers who violate ethical standards: here the average value was only 4.06, although the standard deviation was the highest, at 1.40. This means that the opinions of the respondents are most divided on this issue. Means and standard deviations of the total sample responses are shown in Table 5.

Based on the points included in the evaluated statements, our students have relatively high expectations of ethical leaders, as the averages on the Likert scale were above 4 in every case.

Table 5: Respondents' opinion on the ethical leader

Statements	Mean	Std. deviation
Can be trusted.	6.61	0.68
Makes fair and balanced decisions.	6.23	0.95
Listens to what employees have to say.	6.21	0.92
Has the best interests of employees in mind.	5.91	0.95
When making decisions, asks “What is the right thing to do?”	5.67	1.27
Defines success not just by results, but also the way that they are obtained.	5.62	1.23
Sets an example of how to do things the right way in terms of ethics.	5.51	1.23
Conducts his/her personal life in an ethical manner.	5.45	1.28
Discusses business ethics or values with employees.	5.38	1.18
Disciplines employees who violate ethical standards.	4.06	1.40

Source: Author’s own research results or Primary data?

I try to investigate the potential correlations between the results in my data base. The results are presented below.

I found a medium correlation between the following statements:

- Between “Listens to what employees have to say” and “Makes fair and balanced decisions” ($r=0.419$ is significant at the 0.01 level).
- Between “Has the best interests of employees in mind” and “Makes fair and balanced decisions” ($r=0.489$ is significant at the 0.01 level).
- Between “Has the best interests of employees in mind” and “Can be trusted” ($r=0.403$ is significant at the 0.01 level).
- Between “Makes fair and balanced decisions” and “Can be trusted” ($r=0.460$ is significant at the 0.01 level).

- Between “Discusses business ethics or values with employees” and “Sets an example of how to do things the right way in terms of ethics”(r=0.468 is significant at the 0.01 level).
- Between “Defines success not just by results but also the way that they are obtained” and “When making decisions, asks “What is the right thing to do?” (r=0.451 is significant at the 0.01 level).

In the analysis of the data, I tried to find significant differences in terms of gender, smoking, previous ethical studies and work experience. The results are:

Analysing averages by an independent-sample T test (5% significance level), women consider “Listens to what employees have to say” and “Defines success not just by results but also the way that they are obtained” more important (question 1, average for women: 6.39; for men: 5.91). Women also consider it more important that success matters not only in itself but also in terms of how it is achieved (question 9, average for women: 5.78; for men: 5.30).

Investigating my data base non-smokers think “Listens to what employees have to say” is more important than smokers do, based on the independent-sample T test at a 5% significance level (question 1, average for non-smoking students: 6.30; for smoking students:5.83). Non-smoking students also consider it more important that success matters not only in itself but also in terms of how it is achieved (question 9, average for non-smoking respondents: 5.70; for smoking respondents: 5.23). In other words, smoking seems to make people more tolerant of the ethical behaviour of managers in these two issues.

Based on previous ethical studies, I found only one case of stricter expectations of the ethical behaviour of managers: those who have participated in an ethics course think that it is not only success that matters but the way it is achieved. The average response of those who had taken this type of course is significantly higher (5.81) than the average of those who had not (5.52) – based on an independent-sample T test at a 5% significance level.

In the case of work experience, there is only one significant difference in the opinions of the respondents: those who have had no work experience said that “Listens to what employees have to say” is more important (average 6.43) than those who have had work experience, who found it less important (average 6.15) – based on an independent-sample T test at a 5% significance level. The explanation for this is probably the negative personal impressions of those who have work experiences, or simply that they believe other aspects of ethical leadership are more essential.

However, there is no significant difference among the means of the answers given to the questions between respondents who are full-time and those who are part-time students.

5. In conclusion

In my study I examined the topic of ethical leadership. First I reviewed what differences there are between ethical and unethical leaders, according to the related literature. The second part of my article presented the results of empirical research

conducted among business students. Students at the Faculty of Economics and Business of the University of Debrecen believe that the most important feature of an ethical leader is trustworthiness, and the least important feature is punishing those who violate ethical standards. Based on the points evaluated in the statements, our students have relatively high expectations of ethical leaders, as the averages on the Likert scale were above 4 in every case. Although our research was not based on a representative sample, it may be a good antecedent for a larger overall research study. In the future I am also planning further research on this topic, using a more detailed questionnaire with more complex questions in order to gain a more precise picture of student's opinions about ethical leadership.

6. Acknowledgements

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A QUALITATIVE STUDY ON PASSIVE – AGGRESSIVE BEHAVIOUR AT WORKPLACE

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Abstract: *The current study focuses on the characterization and perception of passive – aggressive behavior at workplace. We interviewed 12 employees, who work in large companies in Bihor county, on the position of base and middle-level managers. Three of the themes that emerged from the analyzed interviews, have a particular importance in the workplace. First, majority of the participants claimed that the PA behavior is present in their organizations and there is a tendency to spread throughout the organization. Second, most participants viewed the PA behaviour as being tolerated in their organizations. Third, most interviewees claimed that the PA behaviour has negative effects in the organization. The PA behaviour was deeply analysed by many researchers over the time and it has a wide variety of definitions. We could summarily define the concept as including behaviors that convey aggressive feelings through passive means. One of the dark side is that these passive means could be confusing many times. While other forms of aggression like mobbing, bullying, bossing appear as evident, the PA behavior could be misinterpreted. This destructive behaviour could initially appear at several members and then quickly spread throughout all the organisation. This way, the company could become a toxic environment where the valuable employees do not want to remain anymore. The PA behavior must be discovered in good time and stopped, before to penetrate the whole organization. The three main themes emerged from the analyzed interviews led us to interesting discussions and conclusions. We pointed out the main possible ways to prevent and stop the occurrence and spreading of the PA behavior, taking into account the causes of this type of behavior. We also outlined several ways to deal with PA behavior at workplace.*

Keywords: *passive–aggressive behavior; workplace; negative effects; destructive; aggressive feelings; passive means.*

JEL Classification: *M10; M12; M14.*

1. Introduction

Passive – aggressive behavior was first used clinically in the World War II to describe soldiers who refused to comply with officers' demands. (Millon, 1981) The concept has been in the spotlight of clinical theory since then for nearly a century and clinical theorists continue to value the concept. The psychiatrists and theorists from other fields have been variously explained the concept. However there are three widely accepted theories conceptualized in: the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.) (American Psychiatric Association, 1994) categorical construct,

Millon and Davis's (1996) multidimensional traits, and McCrae and Costa's (1987) five-factor taxonomic trait model.

First, the *Diagnostic and Statistical Manual of Mental Disorders* requires that „a person with PA (negativistic) personality disorder exhibit four or more of the following seven criteria beginning in early adulthood and in a variety of contexts (American Psychiatric Association, 1994, pp. 734-735):

1. passively resists fulfilling routine social and occupational tasks;
2. complains of being misunderstood and unappreciated by others;
3. is sullen and argumentative;
4. unreasonably criticizes and scorns authority;
5. expresses envy and resentment toward those apparently more fortunate;
6. voices exaggerated and persistent complaints of personal misfortune; and
7. alternates between hostile defiance and contrition”.

Second, Millon and Davis (1996) proposed that their negativistic descriptor is broader, encompassing the “total pattern” (Millon, Davis, Millon, Escovar, & Meagher, 2000, p. 472). They specified four types of negativists: „vacillating (which adds borderline components to PA behavior), discontented (which adds depressive components to PA behavior), abrasive (which adds sadistic components to PA behavior), and circuitous (which adds passive-dependent components to PA behavior)”.

Third, the five-factor model has assumed many forms since its inception in 1932 by McDougall and its subsequent validating factor analysis by Thurstone (Digman, 2002, p. 17). By 1994, Costa and Widiger characterized the current five factors (or dimensions) „as extraversion or surgency, agreeableness, conscientiousness, emotional stability or neuroticism, and openness to experience or intellect” (Digman, 2002).

We did not focus on the personality disorder, but on PA behavior at workplace that could be shortly defined (Johnson N. J., Klee T., 2007) as the behavior „that convey aggressive feelings through passive means”.

We defined the organizational passiveaggressiveness by describing a passive-aggressive person as being someone who:

- apparently is agreeable and supportive, but behind the scene they turn their back and sabotage
- claims that you can trust them, but their actions show the contrary
- makes promises that remain only promises
- blames “out of their control” things for not complying with their promises
- agrees with you to your face, but behind your back disagree or even sabotage things
- places blame on someone else rather than admitting their own lack of support for a certain matter
- gives you a positive feedback directly, but then a negative one to coworkers and management
- gathers important information from other employees in order them to appear more powerful compare to others around them
- makes fun of someone around them pretending they were just kidding

- refuses to express their true feelings, wants everyone to believe that they are big supporters

2. Why the workplace is a perfect place for passive-aggressive behavior?

Here are the reasons why the workplace is the perfect place for passive – aggressive behavior:

- Most of the adults spend more time at work than anywhere else. Even if mathematically, the adults could spend more time at home, much of their time is spent mostly sleeping. Passive-aggressive behavior could appear wherever a person spends a lot of time; so, this behavior is more likely to appear where the adults spend more time than anywhere else, in other words, at work.
- An employee usually does not work alone, but mostly in a team. The team is the place where inevitably the relationships appear. In these relationships passive-aggression behavior can occur.
- The individuals have personal emotions that must be expressed. In a formal workplace with a professional atmosphere is more difficult for the employees to express them; consequently, PA behavior is more likely to appear where is no place for heartfelt and personal emotions.
- Some employees feel that their boss insult them by treating or speaking of them without proper respect or attention, but they do not have the courage to tell the boss how they really feel; they consider would risk their career being sincere. So, the employees must be very careful when they choose their words. A place where an employee cannot be sincere, direct, honest, is an ideal place for passive aggression.
- A child who has no chance to express the anger in the childhood, will probably seek to express it later on, when he/she must comply with an hierarchy. A passive aggressive employee will see the boss or other persons around him/her as being the abusive adult from their childhood and will act consequently.
- Electronic communication encourages a passive aggressive behavior; it is easier for an employee to transmit passive aggressive messages electronically than face-to-face; in addition, the initial message can be altered or lost.
- In a teamwork the employees work together, many times the accountability do not go till every single employee. A passive aggressive team member can sabotage the entire work without being found guilty.
- Human resources policies make dismissal difficult many times. They are designed to protect the employees, they do not take deeply into account the passive aggressive behavior. When confronted, a passive aggressive employee is always ready to find explanations for his/her behavior, even put himself/herself in a role of victim. However he/she meets the minimum standards making the dismissal quite difficult.

3. Research Methodology

Participants

10 base and middle-level managers, working in large companies in Bihor county were initially contacted by telephone. 7 out of 10 agreed to the interview process. At the end of each interview, the interviewees were asked if they could recommend similarly qualified and potentially interested persons for the same interview. This way, another 5 persons joined the group. So, using the snowball sampling technique we obtained a group of 12 persons who was interviewed.

Instrument

The qualitative study was performed conducting individual interviews using semi-structured questions with each consenting participant. The interviews were face-to-face, ranging from 45 to 60 minutes in length. All interviews used the same 10 questions. Firstly, the participants received a handout containing our description of a passive aggressive behavior (presentated in the last part of the introduction), then they received step by step the questions listed below.

1. Do you agree with the perception of passive-aggressive behavior described in the manual? How would you alter the description of a passive aggressive person?
2. Have you witnessed, experienced, or worked with passive-aggressive behavior in your workplace? Could you describe your experience using examples?
3. Were your experience with passive-aggressive behavior negligible, moderate or significant?
4. Do you believe that the pasive aggressive behavior could spread in the organisation? Could the entire organization be dominated by the passive aggressive behavior?
5. Is this type of behavior tolerated in the organization? If yes, could you tell us why?
6. What are the effects of passive-aggressive behavior at work and how it is reflected in the recipients' behavior? Do you consider them positive or negative? Do you have some examples?
7. Do you consider there are effects of passive-aggressive behavior to the perpetrator? If "yes", are they positive or negative? Could you give us examples?
8. What are, in your opinion, the main causes of passive-aggressive behavior at work? Could you explain us how have you came to this conclusion?
9. Could you suggest some ways to stop the occurrence and spreading of passive aggressive behavior?
10. What is your opinion regarding the way the company must deal with passive aggressive behavior at work?

After the interviews, there was a debriefing session. We sent copies of the transcribed interviews to each participant and asked for their feedback.

Data analyses

The data were analyzed in five steps. The first step consisted in reading of the transcribed interviews a few times in order the researcher to have an overall view. Each participant has received a number that was used further on in analyses instead of the name. The second step was identifying the key responses for each question.

The third step involved creating a Microsoft Excel spreadsheet for each questions. The participants' numbers were entered vertically and the key responses, horizontally. The fourth step was the identifying of the emergent themes. For this purpose we counted the situations when the respondents had the same answer. When 7 out of 12 respondents had the same opinion related to a certain theme, we called that theme an emergent one. The fifth step supposed sending the themes results to the participants and asking for changes if necessary, but no change was necessary.

4. Results

Participants in this research are base or middle - level managers. They all claimed they have had experience either moderate or significant with passive-aggressive behavior both at their previous workplaces and the current job. The majority of the participants claimed that the PA behavior has the tendency to spread throughout organization, being possible even to dominate the entire organization.

The passive aggressive behavior is tolerated in the most of the organization, sometimes even encouraged. In this situation, it is normal for the other employees to copy an appreciated behavior. Passive aggressive behavior could spread in the entire organization and has a destructive effect on it.

Passive aggressive behavior has a negative effect on the organization, this behavior *impacting the ability to accomplish tasks and achieve* goals. It also has negative effects on staff morale. The work environment becomes a toxic one; the valuable employees become depressed and want to escape from this toxic environment, looking for employment opportunities elsewhere. The effects on the perpetrators could be positive, as long as they are not only tolerated, but rewarded, as a consequence of their behavior.

5. Discussions

The passive aggressive behavior occurs as a consequence of both exogenous and endogenous factors, as we discussed in part 2 of this paper, endogenous factors making the workplace a perfect place for passive-aggressive behavior. In addition, some changes also contribute to passive-aggressive responses in the workplace; the changes could refer to:

- the number of women in the workplace;
- the position of women in the workplace;
- the number of employees;
- the number of workers in the workplace;
- the communication styles;
- the type of organizational structure (formal or informal);

No matter the causes are, the passive aggressive behavior must be stopped before spreading throughout the organization. Here are some ways to stop PA behaviour:

- Respond determined, and trust your own feelings
- Communicate that the messages you receive are confusing in your opinion

- Ask questions about what really their behavior means
- Notice the difference between what they do and what they say
- Pay attention to the results, not to the promises.
- Maintain a positive view
- Show that you are steady and aware of the meaning of the message
- If you disagree, politely dismiss their suggestions underlining that it is normal to disagree sometimes.

However, once it is present into an organization ways must be found to deal with it.

Here are a few suggestions:

- Check if an "yes" answer means always "yes"! The passive aggressive persons say "yes" even when they mean "no"
- Use face-to-face communication instead of indirect communication! There are times when short notes are acceptable, but not always!
- Confront a passive-aggressive person with the facts! He /she must know that you understand what is happening.
- Transmit to the passive-aggressive colleague the fact that you have observed his/her behavior and discuss why it is problematic
- Encourage your subordinates to give you a feedback! Give the employees the opportunity to express their opinions!
- Do not punish the employees who disagree with you, because you will encourage the subordinates to become passive-aggressive persons.
- Make sure that the employees clearly understood your expectations! An ambiguous message leaves room for an aggressive passive behavior.
- Be consistent! Do not easily change your mind!
- Evaluate the culture of your organization from time to time and make sure that one or two passive-aggressive employees do not negatively influence other employees, or even the entire organization.
- Eliminate the persons having a passive-aggressive behavior! This way you send the message that this behavior will not be tolerated in your organization.
- Make place for integrity, honesty, loyalty, and respect, in your organization! The culture you work in must a culture you can be proud of.

6. Conclusions

The aspect we theoretically and practically analyzed in this paper is a negative one and it has critical consequences on both the organization and recipients.

The preponderance of participant-expressed views held that passive-aggressive behavior is present in their organizations. However, we came to the conclusion that generally, the organization is the perfect place for this behavior to occur. The organization is the place where the actions provoke reactions encouraging the spreading of this behavior throughout the organization.

The participants also held that this behavior is often tolerated and the perpetrators even rewarded. We underline that it must be discovered in good time and the organization must be preoccupied in finding ways to stop it; under no circumstances

should this behavior be tolerated, but it could be. Unfortunately, this thing happens quite often. The managers are many times busy and far from the reality or the executives are passive-aggressive and what they report are different from reality. In this situation, the managers must carefully observe the actions of the people reporting to them and allow all the employees to share their possible worries without any fear of reprisal.

Related to this issue, the respondents claimed that sometimes this behavior is not discovered and discouraged, but reworded, so that it has positive effects on the perpetrator. However, they all claimed that the effects of this dishonest behavior is negative and it could distroy the entire organization.

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PERCEPTION AND ACCEPTANCE OF GOAT CHEESE IN COMPARISON WITH SHEEP AND COW CHEESE – AN EMPIRICAL STUDY

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Abstract: Goat milk production is a dynamic and continuously expanding branch, which determines the life of millions of people, as well as constitutes an important part of the national economies of many countries (SILANIKOVE et al., 2010). Goat milk and the cheese made from it, was venerated in ancient Egypt, with some Pharaohs supposedly placing these foods among the other treasures in their burial tombs (SMITH, 2006). Across the globe, goats can be kept almost everywhere, even poor surroundings. Goats can play an important role in the human nutrition of the continuously increasing human population. Goats are able to provide high quality products under diverse climate conditions and in extreme environments. Globally, more people drink milk from goats than from any other animal (SILANIKOVE, 1994). Goat milk plays a decisive role in feeding starving and malnourished people in developing countries. At the same time in developed countries and also in Hungary these products are “luxury” consumer goods. Due to its favourable effects on human health, goat milk has found a niche for itself in the trend towards healthy nutrition, as well in developed countries. The main objective of our empirical research was to analyse the respondents’ perception and acceptance towards goat milk cheese in Debrecen, Hungary through blinded testing of cow, sheep and goat cheese. The empirical research has been carried out in the autumn, 2018 and beginning of 2019 with a sample of 202. Based on the results it can be stated, that respondents had almost the same opinion on the tested cheeses made from cow, sheep and goat milk, which is in contrary with the findings of some previous studies that goat milk products have a “special smell or flavour. Based on the correlation test it can be stated, that there is no significant correlation between the age of respondents and the affordable cheese price, (how much respondents would pay for it) and between the income and the cheese price. The affordable price proved to be the highest for the goat cheese which may reflect its perceived high quality.

Keywords: cheese; goat; sheep; cow; consumption; marketing.

JEL Classification: M31.

1. Literature Review

1.1. Goat keeping and goat milk production in Hungary

Until the end of the 1990s, goat breeding in Hungary was relatively unimportant. However, new demand for so-called alternative products meeting the requirements of healthy nutritional programmes began to appear in the country, as well. Initially, this new demand was met with imported products, since the national goat population and goat dairy products could not compete with imported products (MARTICSEK et al., 1999). Due to many efforts, today, local goat milk and manufactured goat milk products can meet any and all market requirements (SZIGETI, 2004).

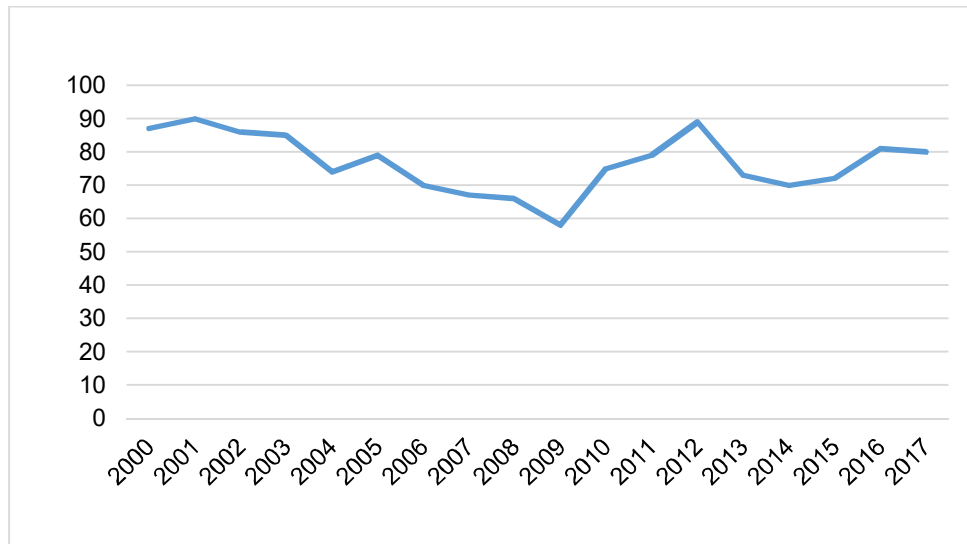


Figure 1. Goat population in Hungary between 2000 - 2017 (thousand heads)
Source: KSH, 2018a

Figure 1 shows the goat population in Hungary between 2000 - 2017. The number of individuals and companies keeping goats as a livelihood generated income or business reasons is probably a few hundred in Hungary. The number of farmers keeping some goats as a hobby or providing the family with goat milk is probably a few thousand (KUKOVICS, 2007a). There are around 3-5,000 goat keepers in Hungary (the exact number is not known) and less than 80% keeps less than 10 goats. The breeds mainly belongs to Hungarian breeds, but 10% stem from imported breeds, such as Saanen, Alpine, Boer or Anglo-Nubian (KUKOVICS, 2008a). Many poor people keep goats in Hungary, in mainly underprivileged regions (KUKOVICS, 2007b). The production level (and number of animals), as well as keeping conditions are lagging behind the data for France, Spain, Italy, Greece and the Netherlands (KUKOVICS, 2008b). Production level of the sector is weak and has been struggling with several problems for many years. The number of goat breeders and goats

continuously fluctuates and the data are patchy. With the growing importance of healthy nutrition and lifestyle, growing demand is expected for goat milk and goat milk products that could contribute to the development of the goat sector (KOCSISNÉ GRÁF, 2011).

The main product of the goat sector is milk. The estimated goat milk production is around 3-5 million litre per year, but only 0.6 million litres are manufactured by milk factories. The main income of milk producing farmers comes from milk and manufactured goat milk products. It is common in the sector that goat breeders sell the produced goat milk and self-made dairy goat products directly (HUNGARIAN CHAMBER OF AGRICULTURE, 2017). Figure 2 shows the goat milk production in Hungary between 2000 - 2016.

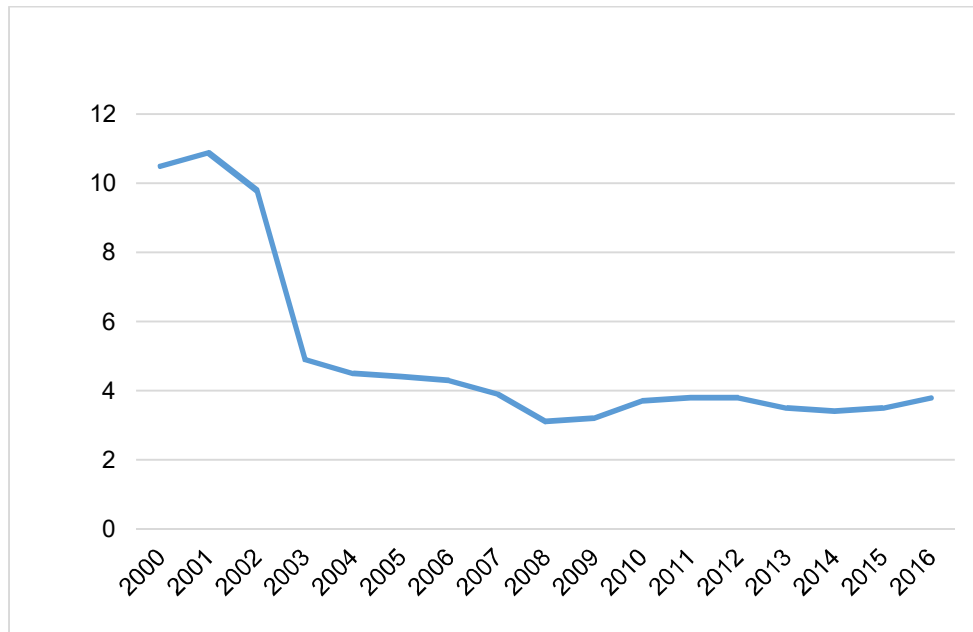


Figure 2. Goat milk production in Hungary between 2000-2016 (million litres)
Source: KSH, 2018b

SZIGETI (2004) and SZIGETI (2005) report on the results of an empirical research study carried out in Hungary. Only a small ratio of respondents reported only very rarely buying and consuming goat dairy products. The most often purchased product was cheese. The main reason for refusing goat dairy products were: they did not like the taste of goat dairy products, they did not even know these products, these products are not easy to find and buy. The main reasons for buying these products are: healthiness, taste and quality. The respondents were concerned that goat dairy products were expensive. Another empirical research study (SZIGETI et al., 2014) revealed that the opinion of Hungarian respondents had not changed much since the time of the previous studies.

1.2. Nutritional value of goat, sheep and cow milk

The use of goat milk as an excellent food source is undeniable. It has beneficial effects for health maintenance, physiological functions, in the nutrition of children and elderly people (BILLION, 2003; ALBENZO et al., 2006; DOMONKOS and GEINER, 2009; YANGILAR, 2013).

Goat milk differs from cow or human milk in having better digestibility, alkalinity, buffering capacity and certain therapeutic values in human nutrition and medicine (HAENLEIN and CACCESE, 1984; PARK and CHUKWU, 1989; PARK, 1994).

Goat milk is important for prevention of cardiovascular disease, cancer, allergy and microorganism and used for stimulation of immunity. Goat milk is recommended for infants, old and convalescent people (HAENLEIN, 2004; ZENEBE et al., 2014).

Comparing the biological value of goat, sheep and cow milk protein, FENYVESSY (2009) stated that the protein of goat milk was the most valuable, followed by the protein of sheep and cow milk. The ratio of essential amino acids was 46.7% in cow milk, 48.0% in sheep milk and 52.5% in goat milk (AGNITHORI et al., 1993 and FENYVESSY et al., 2001 in FENYVESSY 2009).

Goat milk has predominantly smaller fat globules compared to cow milk and is easier to digest (FEVRIER et al., 1993; JANDAL, 1996; LÓPEZ et al., 2003; RAMOS et al., 2005; OLALLA et al., 2009; YANGILAR, 2013). Thus, goat milk is a valuable alternative for babies, adults and nursing mothers, also (BALDO, 1984; HOST et al., 1988).

Goat milk has been recommended as a substitute for patients allergic to cow milk (TAITZ and ARMITAGE, 1984; PARK, 1994; GUO et al., 2004; YANGILAR, 2013). 40-100% of patients allergic to cow milk proteins tolerate goat milk (ZEMAN, 1982; PARK, 1994). The uniqueness of goat milk, yoghurt and cheese in human nutrition has several aspects: goat milk can be used for the treatment of direct or indirect cow milk allergy (GREZESIAK, 1989 in ANAETO et al., 2010).

When analysing the characteristics of goat milk, JANDAL (1996) reports on its several aspects:

Physicochemical aspects: Goat and sheep milk is white in colour compared with cow milk, which is yellowish because of the presence of carotene. Goat milk has a stronger flavour than sheep milk, and is alkaline in nature, which is very useful for people with stomach acid problems.

Medical aspects: Goat milk is prescribed by many doctors for children who are sensitive to cow milk, and is an alternative for people who are allergic to cow milk.

Nutrition aspects: The fat of goat milk is more digestible than milk, and the fat molecules are smaller and have a greater surface area.

Biological aspects: Goat milk is easier to digest because of its natural homogenization, which is superior to the mechanical homogenization of cow milk.

Immunological aspects: The non-allergenic properties of goat milk are due to the fact that most of the milk proteins are unable to pass through the walls of the digestive tract in their original, undigested, allergenic states.

Goat milk and manufactured goat milk products have a three-fold significance in human nutrition, as HAENLEIN (2004) summarises:

- feeding more starving and malnourished people in the developing world than from cow milk;
- treating people afflicted with cow milk allergies and gastrointestinal disorders, which is a significant segment in many populations of developed countries;
- meeting the gastronomic needs of connoisseur consumers, which is a growing market share in many developed countries.

Although PARK (2010) and MOWLEM (2005) mention two formidable barriers in marketing goat milk products: negative public perception of “goaty” flavour, and seasonal milk production, which prevents year-around uniform marketing.

1.3. Nutritional value of manufactured goat dairy products: cheese

Cheese is a fermented dairy product, which has hundreds of varieties. It is probably the most popular and well known value added dairy product (PAL, 2014 in PAL et al., 2017). The proportion of goat milk processed into cheese and yoghurt is higher in comparison to cow milk (MORAND-FEHR et al., 2007; RIBEIRO – RIBEIRO, 2010). The high fat-content of goat's milk makes it very suitable for cheese-making, and some delicious cheeses can be made (PEACOCK, 1996).

Cheeses hold the greatest economic value among all manufactured goat milk products. Agricultural Handbook No. 54 of the USDA describes over 400 varieties of goat cheese and lists over 800 names of cheeses, many of which are made from goat milk or combinations of goat with cow, ewe, or buffalo milk (PARK, 1990 and SANDERS, 1969 in PARK, 2010).

There are goat cheeses made from raw and pasteurized milk. In many countries, the manufacture of goat cheese from raw milk is prohibited due to food safety issues (e.g. brucellosis). The type of milk used significantly influences the finished cheese (LOEWENSTEIN et al., 1980).

Hundreds of types of cheese are made around the world. Northern and Southern European countries have developed many types of goat's milk cheese, and the recipes for some have spread outside Europe. Few countries in the tropics traditionally make cheese, and even fewer make cheese from goat's milk. This reflects local traditions and the small quantities of milk produced by most goats in the tropics, rather than any lack of potential. India and Central and South America are the main areas in which goat's cheeses are produced. About 7.5 litres of milk are needed to produce one kilo of fresh cheese, but over 10 litres are needed to make a kilo of hard cheese. The harder cheeses often become popular with urban residents as they become richer and are able to afford them. It is good for poorer farmers to take advantage of the increase in wealth of urban dwellers and sell them valuable products, provided that the farmers get a fair price for their products. (PEACOCK, 1996).

Soft and semi hard varieties of cheeses are made from goat milk. In European countries, these cheeses are marketed as premium cheese. Greece and France are the most important goat milk cheese producing countries in Europe. In India, goat milk has been used for making hard cheese. Goat cheese is easier on the human digestive system and lower in calories, cholesterol and fat than its bovine

counterpart. Goat milk cheese is rich in calcium, protein, vitamin A, vitamin K, phosphorus, niacin and thiamin (ANON, 2012 in BHATTARAI, 2012). In some cheeses a relatively strong „goat like” flavour is preferred but for other products the absence of characterising flavour is favourable (YANGILAR, 2013). The specific „goat flavour” may be undesirable in milk for direct consumption but for cheese production its presence can be much sought-after (MORGAN – GABORIT, 2001).

2. The Applied Research method

For analysing the perception and acceptance cheese made from goat, sheep and cow milk, blinded test was used, as a primary research method. Respondents were asked to test the 3 different cheese.

The three cheeses have been purchased directly from local producers, so they are handmade quality products. Respondents did not know what kind of cheeses they tested. Cheeses were numbered (No.1: cheese made from cow milk, No.2: cheese made from sheep milk and No.3: cheese made from goat milk).

Table 1. Characteristics of the sample n=202

Gender	%
Male	34
Female	66
Age groups	
15-24 years	33
25-35 years	15
36-45 years	24
46-54 years	14
55-64 years	6
65- years	8
Place of residence	
Capital city	1
City of county	36.6
Town	50.5
Village	8.9
Educational level	
Elementary school	13
Secondary school	59
University degree	28
Perceived income level	
Significantly under the average	3
Under the average	17.8
Average	68.3
Above the average	5
Significantly above the average	5.9

Source: own research, 2018, 2019

Characteristics (outside- and inside look, smell, taste, fatness and colour) of the 3 cheeses were tested by the respondents using Likert scale 1-10 (1 meaning the worst and 10 meaning the best). The affordable price of 100 gr of the 3 different cheese were also asked, as well as the preferred way of consumption.

The survey was conducted in the autumn 2018 and the beginning of 2019 with the involvement of 202 respondents. Location of data collection was a postsecondary school and companies in Debrecen, Hungary. Paper based data collection was carried out during the blinded test. Data were processed in SPSS. Regarding statistical methods, mean, median, standard deviation coefficient (H) and coefficient of variation (H2) were calculated. The coefficient of variation is the ratio of standard deviation to the mean expressed as percentage. Coefficient of variation can be defined as the coefficient of standard deviation with respect to mean which is generally expressed in terms of percentage. Coefficient of variation is used to compare the variability of two or more series. Standard deviation coefficient (H) is the square root of the coefficient of variation.

The introduction of the sample is shown in Table 1. It shows that the proportion of female to male in the sample is almost two times higher. Regarding the age distribution of the sample, the proportion of age group 15-24 is the highest. The place of residence is mainly city of county and town (36.6% and 50.5% respectively). The highest level of school respondents have completed is secondary school (59%). The perceived income level of respondents was average for most respondents (68.3%).

3. Results

Respondents had to evaluate the three different cheeses using Likert scale 1-10 (1 is the worst and 10 is the best). Five different characteristics were evaluated by the respondents like outlook, smell, fatness, taste and colour. The cheeses to be tested were marked with numbers and were offered on separate plates. Cheese No 1.: cheese made from cow milk, Cheese No 2.: cheese made from sheep milk and Cheese No. 3.: cheese made from goat milk. When tasting the cheeses respondents were asked to fill in a questionnaire.

Evaluation of cheese No 1 (cheese made from cow milk) can be seen in Table 2.

Table 2. Evaluation of cheese No. 1 n=202

Value	Characteristics				
	Outlook	Smell	Fatness	Taste	Colour
Mean	8,39	7,99	8,28	8,04	8,55
Median	9,00	8,00	8,00	8,00	9,00
Standard deviation	1,703	1,938	1,578	2,030	1,911

Source: own research, 2018, 2019

Regarding cheese No. 2 (made from sheep milk) the same evaluation system was applied, results are shown in Table 3.

Table 3. Evaluation of cheese No. 2 n=202

Value	Characteristics				
	Outlook	Smell	Fatness	Taste	Colour
Mean	8,32	8,27	7,00	7,68	8,21
Median	9,00	8,00	7,00	8,00	8,00
Standard deviation	1,837	1,679	2,021	2,218	1,802

Source: own research, 2018, 2019

Results for cheese No. 3 (made from goat milk) can be seen in Table 4.

Table 4. Evaluation of cheese No. 3 n=202

Value	Characteristics				
	Outlook	Smell	Fatness	Taste	Colour
Mean	8,12	8,03	7,89	7,46	8,24
Median	8,00	8,00	8,00	8,00	9,00
Standard deviation	1,838	1,923	1,943	2,422	1,910

Source: own research, 2018, 2019

Results of the empirical research show in all cases, that the mean is relatively high, around 8 in case of each characteristics with only slight differences. The median is the value separating the higher half from the lower half of a data sample. In case of our research, the median is around the mean. Regarding standard deviation, a low standard deviation indicates that the data points tend to be close to the mean of the set, while a high standard deviation indicates that the data points are spread out over a wider range of values. The standard deviation shows in all three cases that our data are not homogenous. The results show that the perceived characteristics of the tested cheese were rather similar for respondents, however the data were heterogeneous. This results is in contrary with the findings of some previous studies (PARK, 2010 and MOWLEM, 2005), that goat milk products have a “special smell or flavour”.

We asked our respondents how much they would pay for 100 gr cheese? The mean was 200 HUF for cheese No. 1, 240 HUF for cheese No. 2 and 250 HUF for cheese No. 3. It shows, that respondents would pay the highest amount for goat cheese. We can suppose that this high price is connected to the perceived best quality.

We asked our respondents how they would eat the tested cheese. They had to consider the following options: alone, grilled and use as a kitchen row material. They had to rate these option on a scale 1-3, where 3: the most and 1: the least. Answers can be seen in Table 5, 6 and 7.

For the cow cheese we can state that the preferred way of consumption is alone (mean=2,40), followed by as a kitchen row material (mean=2,35), while the grilled version (mean=2,09) is the least preferred way of consumption. For the sheep cheese we got the same order, but the means for the first two versions (mean=2,16 and 2,14 respectively) were much lower. In case of the goat cheese the most preferred way of consumption is as a kitchen row material (mean=2,30) followed by

alone (mean=2,24) and the grilled version is the least preferred way of consumption (mean=2,07).

Table 5. How would you eat cheese No. 1? (made from cow milk) n=202

Value	How to eat it		
	Alone	Grilled	Use as kitchen row material (to pizza, soup, etc.)
Mean	2,40	2,09	2,35
Median	3,00	2,00	3,09
Standard deviation	0,910	0,871	0,837

Source: own research, 2018, 2019

Table 6. How would you eat cheese No. 2? (made from sheep milk) n=202

Value	How to eat it		
	Alone	Grilled	Use as kitchen row material (to pizza, soup, etc.)
Mean	2,16	2,08	2,14
Median	2,00	2,00	2,00
Standard deviation	0,961	0,929	0,885

Source: own research, 2018, 2019

Table 7. How would you eat cheese No. 3? (made from goat milk) n=202

Value	How to eat it		
	Alone	Grilled	Use as kitchen row material (to pizza, soup, etc.)
Mean	2,24	2,07	2,30
Median	3,00	2,00	2,00
Standard deviation	0,958	0,884	0,827

Source: own research, 2018, 2019

It can be stated, that in all cases the mean and median are quite close to each other. The standard deviation is low, thus the data are homogenous. It can be stated, that respondents would like to eat in the same way all the three cheeses.

The coefficient of variation (H2) calculated by the division of the external variance and the total variance, shows how the salary category determines the amount to be paid for cheese. This value is 0,493%. The standard deviation coefficient (H) defines the strengthness of the relationship between the above mentioned two criteria. It is 0,07%. This means that the amount to be paid for the cheese does not depend on the income level of respondents.

The coefficient of variation (H2) calculated by the division of the external variance and the total variance, shows how the age category determines the amount to be paid for cheese. This value is 3,289%. The standard deviation coefficient (H) defines the strengthness of the relationship between the above mentioned two

criteria. It is 0,18%. This means that the amount to be paid for the cheese does not depend on the age of respondents.

5. Conclusion

Goat milk products are not among the everyday consumed dairy products in Hungary due to several reasons. Among these reasons we have to point out that these products are not easy to purchase, since they can be purchased mainly directly from the farmers or at large supermarkets. The price of these products is relatively high and last but not least they said to have (or at least believed to have) a special "goaty" flavour and smell. Our empirical research with a sample of 202 in Debrecen region, Hungary explored the perception of goat cheese regarding its outlook, smell, fatness, taste and colour is almost the same as in case of the tested cow and sheep cheese. The price our respondents would be willing to pay was the highest for the goat cheese. Regarding the preferred way of consumption, it is rather similar for all the three tested cheese (cow, sheep, and goat). They would consume it alone as a cheese plate, grilled or even as an ingredient to other meals, such as pizza, soup, etc. Based on these results we can state that the perception of goat cheese was not worse than of the tested cow and sheep cheese. Even its smell was not perceived as a negative feature. However further investigation is needed to study the perception of smell of goat cheese. As it is known from empirical studies, the "goaty" flavour of goat milk products is mainly undesirable, but in case of goat cheese it is highly favoured and sought. Our respondents were willing to pay the highest price for the goat cheese (250 HUF/100 grams). We can suppose that this price is connected to the highest perceived quality, however this price is still much lower than the current market price of goat cheese in Hungary. The goat milk as an excellent food source is undeniable. When marketing Hungarian goat cheese, its taste, ways of consumption (recipes) and local handmade nature should be emphasised.

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DROPPING OUT OF VOCATIONAL TRAINING – HUNGARIAN EXPERIENCES

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Abstract: *Despite the improving level of education in Hungary, the proportion of people with low school qualification who are permanently excluded from the labour market is still significant. For them – even under current labour market circumstances – the supply of jobs is very limited, hence, their employment rate is decreasing, while their unemployment and inactivity are rising. The study focuses on the issue of secondary school dropout in international and Hungarian, theoretical and empirical contexts. The importance of the subject is due to the fact that early school leaving is a complex phenomenon that affects a range of areas outside the educational and training system, therefore the management of the problem is a priority. Using the methodology of questionnaire surveys and semi-structured conversations, the study aimed at the exploration of the school life of people who dropped out of vocational training, the conditions of dropping out and the applied compensatory measures. The sole solution for the people concerned is public employment and the various types of aid that further increase their marginalization. Results of the study pointed out the impact of family background, the positive experience of school reintegration, and the role of career choice based on misinformation or compulsion. Conclusions of the study provide an adequate framework for the development of an action plan that may serve as a basis for future prevention, intervention and compensation developments. The conclusion of the research is that due to the strong family ties of the dropped out people it would have been rational for the school to focus on preventive measures in the form of closer contact with parents. Increasing the role of homeroom teachers might also be a key factor in preventing early school leaving. The results point to the conclusion that the presence of career guidance sessions is not sufficiently emphasized in educational institutions. As a suggestion, it could be argued that higher level teaching of learning techniques and the elimination of skill deficits could be a key element of education not only in the field of adult education but already in ninth grade, trying to prevent dropping out before it is realized.*

Keywords: *drop out; Hungary; labour market; return to education; vocational training.*

JEL Classification: *I26; J29.*

1. Theoretical background: risk factors

Summing up publications by overseas authors, Freeman and Simonsen (2015) classified the risk factors of early school leaving into two categories: social status

factors (qualification level and employment of parents, gender, age, social disadvantage, native language, mobility, family structure, etc.) and alterable risk factors (failures in learning, retention, attendance and absence, misbehaviour, early aggression).

From among the risk factors of early school leaving, others also emphasize the impact of family. Hickman, Greenwood and Miller (1995), Knesting (2008), Terry (2008), Kroon et al. (2016), Stratton et al. (2017) and Dommers et al. (2017) found that completion of vocational training is strongly influenced by family-specific impacts.

According to Hungarian experts (Liskó, 2004, 2005, 2008; Kertesi and Kézdi 2008, 2010, 2011, 2013; Szanyi-F, 2013; Hegedűs and Podráczky J, 2013), one of the properties influencing the schooling prospects of children is the residence of families: above average amount of high school students live in big cities, while the majority of students of vocational institutions live in small towns and villages. The second characteristic is the existence/nonexistence of an intact family (the lower the level of training children are participating, the more likely their parents are divorced or one of the parents has deceased). Further links have been pointed out by other research (Budavári-Takács and Szalma, 2009, Czech-Papp, 2010, Czech-Papp and Hajós, 2014) concerning later dropout, the earnings of parents, income status of families, age of the child by the time the parents lose their job and ethnic composition of families.

Relating to alterable risk factors, research findings of Lee and Breen (2007) and Suh, Suh and Houston (2007) have shown that not only poor school achievements lead to high school dropping out – 43% of underachieving students involved in the study have successfully completed high school. Students who were absent multiple times and had a pessimistic look towards the future were exposed to the greatest danger. In the scope of her research involving Dutch students, Elffers (2013) found differences in terms of the so-called behavioural engagement in the case of groups of students threatened and not threatened by dropping out. Definition of the concept can be described by active engagement in school activities, such as regular attendance of the classes, timely arrival, attention towards the teacher, and execution of the work assigned to them. Insurmountable challenges were reported by involved students in the scope of the research of Frederick and Goddard (2010), and Van Caudenberg and his associates (2017).

The starting point for Kigon and Boekaerts (2005) was that the high dropout rates in secondary vocational training can also be explained by the fact that the students concerned do not really identify with their school (they do not really fit in). In the course of the study, self-regulation ability of students, their internal motivations and the willingness to meet external expectations were analysed. As a result, the first three key factors were identified as the judgment from teachers and fellow students, the usefulness of school subjects and the degree of alienation from the school.

High school failures are closely related to the serious shortcomings of basic skills acquired in primary school, so the success of high school depends considerably on primary school (Livingston, 1959) and on the preceding years (kindergarten years). The findings of Hungarian researchers are in line with international results (Kertesi

and Kézdi, 2010, 2011, 2013). One of the main causes of dropout is the failure to pass, retention, weak mid-semester achievements. Absences show a significant correlation with the occurrence of primary school failures (Fehérvári, 2008; 2012; Mártonfi, 2008). Almost 40% of all young people in vocational schools have failed to pass in primary school at the end of at least one of the years (Mártonfi, 2004). Also the ones who had to repeat some of their primary school years due to failure to pass, usually enrolled in a vocational school due to compulsory schooling but there is a 70% chance that they do not reach the final examination to become a skilled worker (Mártonfi, 2014). Dropout from vocational training occurs mainly in the first and second grades before the actual professional training begins.

According to the findings of Bodacz-Nagy (2011), 38% of those who were compelled to choose a professional training failed at the end of the year, while only 22% of those who desired to learn the selected profession. Initially, the majority of those who dropped out did not want to study a profession, they intended to acquire a secondary school graduation (Fehérvári, 2012), or they originally did not intend to study that particular profession but for some reason they were forced to (Czech-Papp, 2006; Bodacz-Nagy, 2011; Domokos, 2000). Compelled choices lead to dropping out at a significantly higher rate than choices based on own interests or intentions.

As for the further fate of secondary school dropouts (Liskó, 2003; Fehérvári, 2008; Köpeczi-Bócz, 2013; Cockx and Picchio, 2013; Fehérvári, 2015; Iannelli, Duta, 2018), it is expectable that: one-quarter of them succeed to stay in another school; one-third find some work (mainly occasional ones, illegally employed, paid in cash); 40% of them will be unemployed, but they will have intention for further education.

2. Material and method

The aim of the research is to determine how to reduce dropping out from vocational schools.

Consequently, the study focuses on family circumstances, school career and current job market status of vocational education dropout students

The abductive nature of the research does not require the establishment of hypotheses, but the exact formulation of research questions is of paramount importance. The research questions of present study are related to the family, career choice and school conditions characterizing dropout students; how the involved students were affected by the period following the dropout, and how the returning opportunity of learning influenced them. Such abductive research is particularly well suited to topics where only limited knowledge is available and the researcher is able to rely on the mental models of those involved.

3. Results of the questionnaire survey

The questionnaire part of the empirical research work was based on a paper-and-pencil survey of 103 individuals who dropped out of vocational training; the questionnaire mostly contained closed questions and 5-point Likert scale. The questionnaire survey was aimed at exploring the socio-demographic characteristics,

school life, dropout circumstances of dropped out individuals as well as the taken compensatory measures. The survey was conducted in four counties of Hungary with average economic (labour market) indexes in the spring of 2017. Data was processed by means of descriptive statistics and crosstab methodology.

3.1. Demographic data

The surveyed sample is not representative ($n = 100$), considering that it is based on a group of individuals, which is relatively difficult to reach. Gender distribution is almost equal: 47% of the respondents are male and 53% are women. The participants are young people, the average age is 27 years, one-third (33%) is under the age of 25 years, the youngest respondent is 16 years old, the oldest is 52. As for their place of residence, smaller settlements are typical: 51% live in villages, 46% in small towns, while 3% on remote farms.

Three-quarter of the respondents (75%) dropped out of vocational schools (ISCED 2/3 C) – currently known as vocational secondary schools – one-quarter (25%) of vocational secondary schools (ISCED 3 A) – currently referred to as specialised secondary schools. More than one-third (39%) dropped out of first grade of the secondary school, nearly half of them (45%) from second grade and 16% from the third grade. 21% of the respondents continued their studies after dropping out (13% learned a profession, 8% passed the final examination).

School qualification of parents is low; almost half of the parents (58% of mothers, 46% of fathers) attended primary school only. There is no fundamental difference between the school qualification of mothers and fathers. In the case of the majority of respondents (56%), the parents live together; the number of those who were raised in a one-parent family is slightly less (44%).

More than half of the respondents (52%) are unemployed.

Early school leavers included in the examined sample are young people living in small settlements who are characterized by parents with low school qualification and unemployment status. The education level of the involved respondents is usually higher than that of their parents.

3.2. Circumstances of dropping out

Most of the individuals surveyed in the scope of the study (53%) left school due to an excessive amount of absences (14% of them left due to pregnancy), one-fifth (21%) left because of failure, 19% left to pursue other professions (three-quarter of them have successfully finished that), and 7% were dismissed for behavioural problems (Figure 1). Of those who dropped out of secondary school because of failing classes, only 2% have previously failed in primary school.

The surveyed respondents – based on their replies – were not bad students. By their own admission, their average grades were the weakest in mathematics: 2.43, followed by literature: 3.01, followed by history: 3.02 (Hungarian education system uses a classification of grades ranging from 1 to 5, where 1 means failure and 5 is the best grade). All of the respondents received the highest grades in the case of their professional subjects with an average of 3.23.

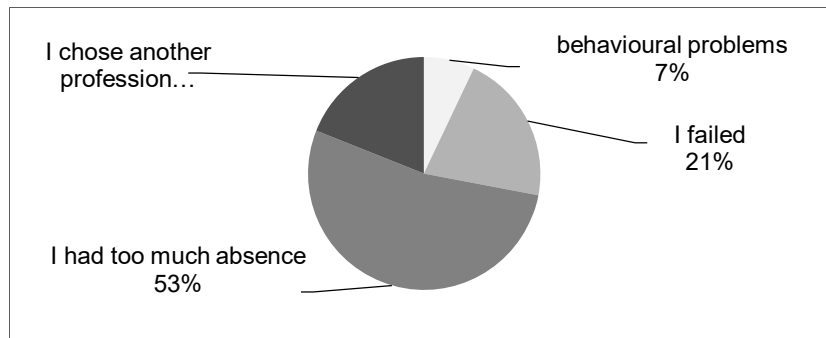


Figure 1. Distribution of the reasons of dropping out
Source: own examination

Concerning the observations, there is no fundamental difference between theoretical and practical subjects (Figure 2).

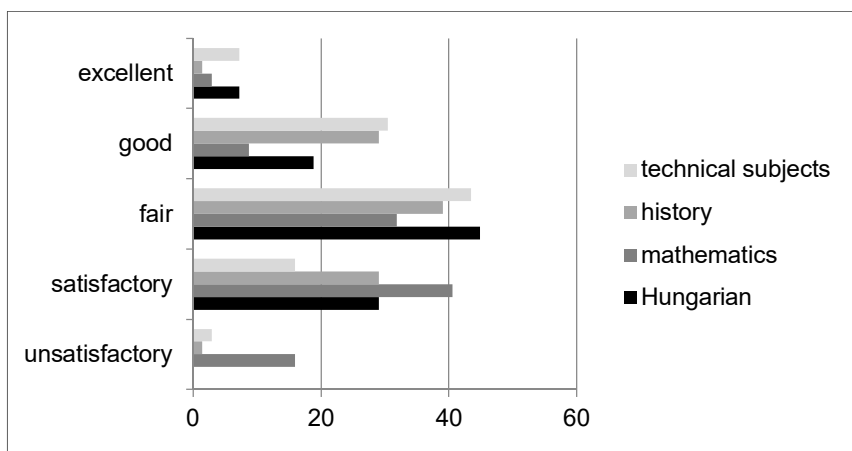


Figure 2. Distribution of the grades of respondents
Source: own examination

However, the replies concerning the importance of learning theoretical and practical subjects showed a greater difference (Figure 3). Dropped out individuals clearly considered practical training more important than theoretical education. The significance of activities in the school educational workshop was 3.83; practical training at companies was rated at 3.50, while theoretical education received a score of 3.23. Some inconsistency is detectable between the average of received grades of respondents in the case of professional subjects (3.23) and the mean score (3.53) assessing the importance of practical training.

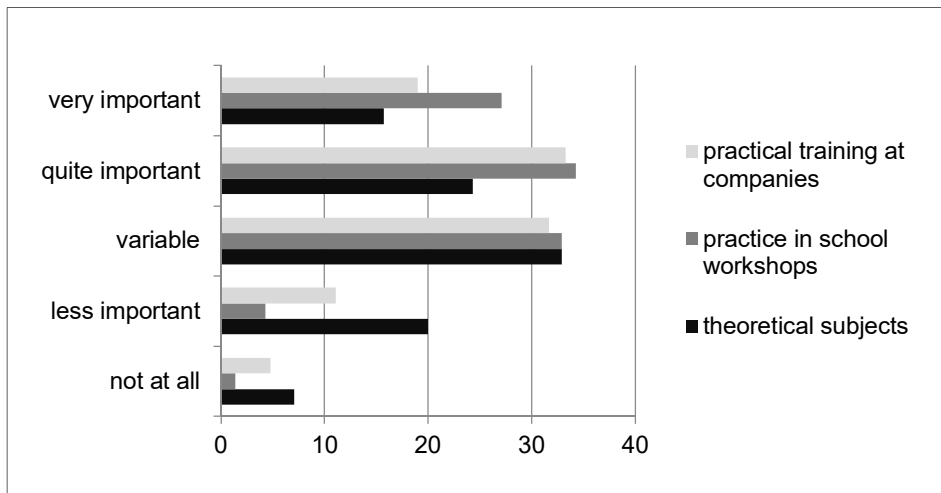


Figure 3. Distribution of the opinions of respondents concerning the importance of theoretical and practical subjects
Source: own examination

The mean value of educational help received in secondary school is much lower than it was in the case of primary school (Figure 4).

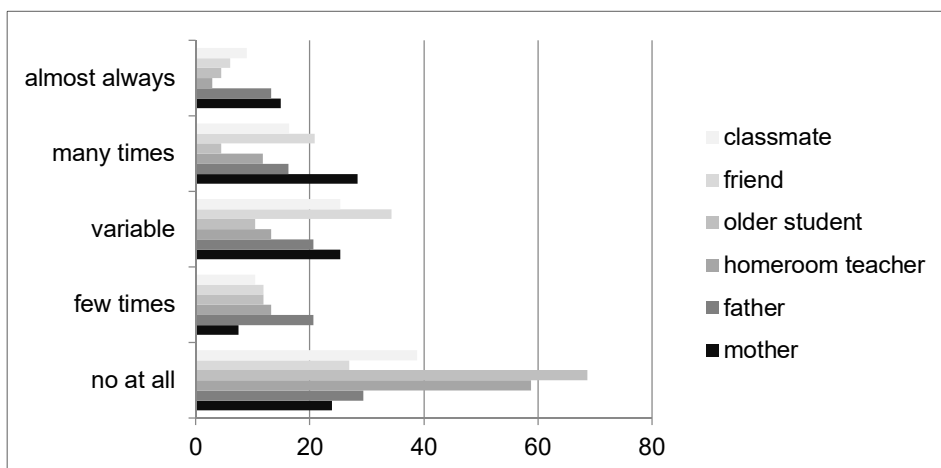


Figure 4. Help received by respondents for their education in secondary school (%)
Source: own examination

Students received the most help from their mothers in this case as well (3.01), followed by the role of the father (2.71) and then the homeroom teacher (2.5). Respondents assessed the received help from older/senior students only with a mean score of 1.63. The largest decline in terms of mean value was found in the

case of the homeroom teacher: while in primary school this value was 3.32 (equivalent to the father), it was only 2.5 in secondary school (Figure 5),

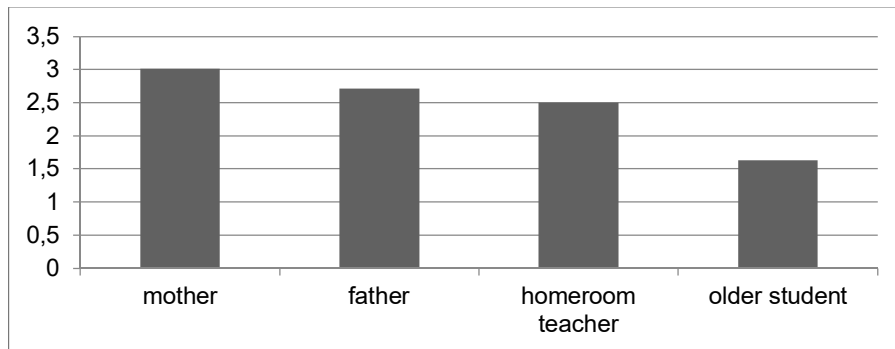


Figure 5. Assessment of the amount of help received by respondents during secondary school

Source: own examination

Thus, the amount of received support for learning in secondary school is considerably lower and decreases the most in the case of the homeroom teacher. One-quarter of respondents (27%) did not ask for any sort of contribution from their homeroom teacher. One-third (35%) of the respondents did not ask for any help from anyone, while 24% considered their demand for support medium-level.

As for the discussion of non-education related problems, the score of mothers is the highest: 2.9, followed by the role of the father with 2.65, then followed by the role of friends (not schoolmates) with 2.6. The influence of the father and the group of students at the same age are almost the same. Considerably less help was used by the participants of the sample for their non-school related problems. The role of the homeroom teacher in solving non-school problems was very low (1.84). 57% of the respondents did not ask any private help from their homeroom teachers.

Focusing on the family background, in the case of more than half of the respondents (56%) their families did not agree with or explicitly opposed early school leaving. One-fourth of the sample (24%) experienced indifferent attitude, while one-fifth (20%) of the respondents received supportive reactions (Figure 6).

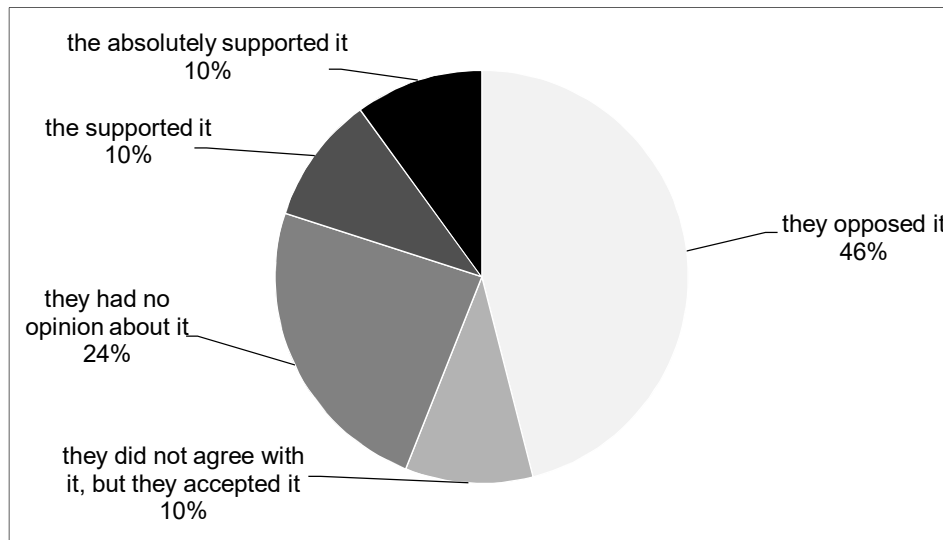


Figure 6. Distribution of the attitude of family members towards early school leaving
Source: own examination

Dropped out individuals clearly consider practical training more important than theoretical education, however this is not reflected in their grades and achievements. The extent of learning support in secondary school is significantly lower than in primary school and the largest decline is observed in the case of the homeroom teacher. Nearly half of the respondents (40%) do not discuss their personal problems with anyone. Almost half of the respondents had someone else in their families who dropped out of school as well. The majority of the parents of those who had dropouts in their families did not agree with early school leaving (91%).

4. Conclusions

Life-path of young people involved in the study can be a starting point for training reforms. Findings at the end of the analysis - due to the low sample size - are mostly thought experiments, but we hope that we might also contribute to the scientific and everyday discussion on early school leaving.

Findings relevant to complex research are the following:

Due to the strong family ties of the dropped out people (significant learning and other problem-solving assistance from the mother; most of them intend to establish a family in the future), it would have been rational for the school to focus on preventive measures in the form of closer contact with parents. Family influence can help prevent early school leaving.

Increasing the role of homeroom teachers might also be a key factor in preventing early school leaving, because their frequent presence and the covered topics of their lessons might draw attention to the context of training and labour market, that learning is necessary for student to be able to be employed later.

The results point to the conclusion that the presence of career guidance sessions is not sufficiently emphasized in educational institutions. These sessions are often led by homeroom teachers due to funding reasons or in the absence of a qualified professional. It is therefore proposed to increase the presence of career guidance within the education system. Respondents are not aware of their employment opportunities either; the lack of knowledge concerning the labour market is common. Currently, career counsellors or employment advisors work in all major settlements, schools, child welfare services, employment offices; their help is available for students. Intensive inter-sectoral cooperation is also of importance.

Excessive number of subjects taught in ninth and tenth grade not directly relating to the given profession was mentioned in the questionnaires and in the course of the conversations as one of the reasons of dropping out of school. Therefore, it would be worthwhile to apply a practice-oriented "learning by doing" type of education in vocational schools. Students should develop a sense of usefulness towards learning. As a suggestion, it could be argued that higher level teaching of learning techniques and the elimination of skill deficits could be a key element of education not only in the field of adult education but already in ninth grade, trying to prevent dropping out before it is realized. During their training, students need to be able to resolve their frustrations and inhibitions caused by their existing or earlier school conflicts. Re-thinking and changing educational methods might helpful for that.

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EXAMINING ORGANIZATIONAL CULTURE WITH OCAI AMONG EMPLOYEES OF A SERVICE COMPANY

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Abstract: *The issue of organizational culture is a much researched area; several related models have been created over the previous decades and it is still a current topic. In this paper, following a brief theoretical overview of the topic, I have measured the organizational culture of a service company with the Organizational Culture Assessment Instrument (OCAI) questionnaire developed by Cameron and Quinn. The questionnaire contains a set of 4 statements, to be considered in 6 dimensions (dominant characteristics, organizational leadership, management of employees, organization glue, strategic emphases and criteria of success), each corresponding to 1 culture type (clan, adhocracy, market, hierarchy). In recent years, many research studies have been written using the OCAI questionnaire among different kinds of organisations, including logistics enterprises, family firms and universities. We have the ability with OCAI to determine the values that are perceived and considered ideal by employees, both for the individual units and for the whole of the organization. I have used descriptive statistics, and one-sample and paired t-tests to obtain answers to my research questions. As regards hierarchy-adhocracy, employees perceive the culture they currently experience and the one they consider ideal to be the same. With the exception of the organisational leadership (2) dimension, they feel the culture to be close to a hierarchical one, and distant from an adhocracy. The need for change appeared in the market-clan cultures; the culture that was perceived to be dominant was more of a market culture than the others, but respondents considered a clan culture was the ideal, a finding which was similar to a previous research study on logistics companies. The direction that was considered desirable is not necessarily an ideal direction of intervention for a profit-oriented, service organization; however, it may be worth taking into account the results of the decisions affecting the culture of the managers of the company examined, and managers of other companies that achieve similar results.*

Keywords: *organizational culture; person-culture fit; OCAI.*

JEL Classification: *M14; J24.*

1. Introduction

I present my empirical research among employees of a service organization in this paper, which was designed to assess the organizational culture that was currently perceived and considered ideal by the staff, without specifically referring to the company name; I use the name "service organization" to guarantee anonymity. Following a brief theoretical overview of the topic, I have evaluated the

questionnaires completed by 24 employees of the service organization examined. I used the Organizational Culture Assessment (OCAI) questionnaire developed by Cameron and Quinn, which is based on the Competing Values Framework (Cameron and Quinn, 2006). The following research questions (Q1, Q2) were formulated:

Q1: Which of the four cultural types of the Competing Values Framework includes the organizational culture perceived or considered ideal by employees?

Q2: Is there a difference between perceived and ideal cultures?

2. Theoretical Background

The issue of organizational culture is a much researched area; several related models have been created in the previous decades and it is still a current topic. Covin and Slevin (1990) distinguished between technical and organic culture. According to the typology of Handy (1993), the culture of every organization can be classified into one of the following: power, role, task and person cultures. Marcoulides and Heck (1993) developed a model and examined how the visible features of culture can influence the performance of an organization. According to Sein (2010), the role of culture has a dual, stabilizing function, but it is also capable of learning so it also has an innovation role. Based on empirical research involving companies in different industries (Baetge et al., 2007), the organizational culture, performance and success of companies co-exist. Ogbonna and Harris (2000) also used empirical research to show the relationship between leadership, culture and performance.

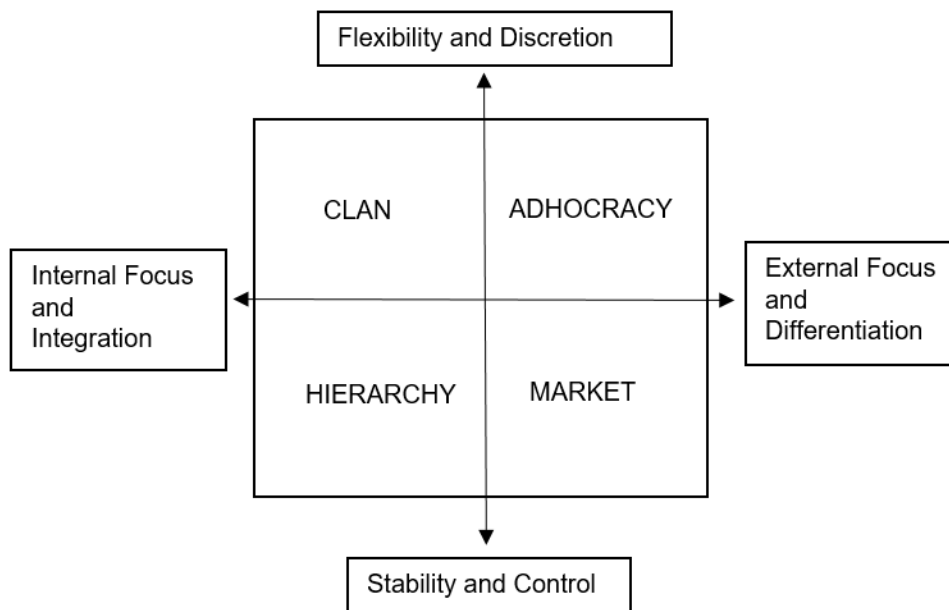


Figure 1: The Competing Values Framework
Source: Cameron and Quinn, 2016: 35

Cameron and Quinn (2006) created the Organizational Culture Assessment Instrument (OCAI) questionnaire, based on the Competing Values Framework. This has led to the development of a tool for measuring culture, which enables the culture of business enterprises to be measured, too. In their organizational culture model, four different types of culture were distinguished in two dimensions, where the two dimensions represented internal or external focus, and flexibility or stability (Figure 1).

In recent years, many research studies have been written using the OCAI questionnaire. Ujhelyi and Kun (2016) conducted research with university students, Ližbetinová and her research associates (2016) examined logistics enterprises, and Zhang and Li (2013) examined the culture of family firms. Using OCAI we have the ability to determine the values that are perceived and considered ideal by employees, both for the individual units and for the whole of the organization (Ujhelyi and Kun, 2016).

Below, I describe the culture types shown in Figure 1 above, based on Cameron and Quinn's model (2006).

For a hierarchy, formal rules and policies hold the organization together. Strong formalization and structuring are characteristic, and efficient and well-coordinated leaders control employees with various rules and regulations. The organization is committed to efficiency, stability and predictability over the long term.

In the culture of the market, the cohesive force is the constant emphasis on victory, and a strong results orientation. Leaders are rigorous and tough competitors. In the long term, their goal is to set and achieve challenging goals to increase market share. An organization with a clan culture focuses on loyalty and tradition, and the commitment of the employees to the organization is high. The workplace provides a friendly environment, and people share many things, like a large family. Leaders act as mentors, characterized by teamwork and consensual decision-making, and emphasize that the development of individuals is a long-term benefit of the organization.

In the case of adhocracy, commitment to experimentation and innovation is the "glue" between members. Leaders and employees are risk takers in a dynamic, ever-changing environment. The long-term goal of the organization is to achieve rapid growth and to acquire new resources. The creation of new products and services represents success for the organization, so it is important to adapt to change and to be open to new challenges.

3. Methodology

After the theoretical review I present my own empirical research below. My culture survey questionnaire, following Cameron and Quinn's (2006) original, contained 4 statements to be considered in 6 dimensions, which I supplemented with some demographic detail. The 4 statements (A, B, C, D) in each of the 6 dimensions each correspond to 1 culture type (clan (A), adhocracy (B), market (C), hierarchy (D)). It was necessary to allocate 100 points per dimension to the respondents among the

4 statements, where the higher score was the one that was considered more characteristic of their organization. In the questionnaires, the respondents had to evaluate the culture they perceived to be ideal. 24 questionnaires were collected in total by the service organization on a paper basis in a voluntary and anonymous form. The gender breakdown by age is shown in Table 1 below.

Table 1. Distribution of sample by gender and age (capita)

No	age					
	19-25	26-35	36-45	46-65	Over 65	All
Men	0	5	1	1	0	7
Women	2	7	6	2	0	17
All	2	12	7	3	0	24

Source: Author's own research results

4. Results

I present my results below, in a structure similar to Ujhelyi and Kun's (2016) work. The first part of Table 2 contains 4 statements per dimension. In cases of accidental response, a value of 25 is expected per statement. In the case of the 24 statements (6 dimensions x 4 questions = 24), the average respondent values for the current culture differed from the expected value of 25 in 18 cases. These t-test values indicating the deviations are marked with "***" in column "t". The statistical significance of the deviation was checked by a one-sample t-test at the 5% significance level.

Compared to a random distribution (taking into account the results of the t- test), a higher value was added to the current culture for 1C, 2C , 3C, 4C, 5C, 6C, and lower one for 1A, 1B, 2A, 2D, 3A, 3B, 4B, 5A, 5B, 5D, 6A, and 6B. In relation to the ideal culture, the evaluation of 3A, 4A, 5A, 5C, and 6C increased compared to a random result, and the evaluation of 1B, 1C, 2B, 3B, 3C, 4B, 4C, 5B, 5D, and 6B decreased. The results show that the culture of the service organization is perceived by workers in all dimensions as a market culture, and much less a clan culture, and that, with the exception of the organizational leadership (2) dimension, they are close to a hierarchy culture and perceived to be far from an adhocratic one.

When defining the ideal culture, dominant features were significantly above average for the clan (true, the market was above average, too), and below average for adhocracy and hierarchy. As regards the desired leadership (2), strategic emphases (5) and the criteria of success (6), the respondents' expectations were that the organisation is characterised by a culture which is close to a market and to a hierarchy; however, they expect a below average level of market like culture in terms of the operational style (3), and the organisational glue (4).

The difference between the present and the ideal culture was examined with paired samples t-tests, and I found it significant in the case of the statements "A" and "C" for all dimensions. In the case of organizational leadership (2), statements "B" and "D, and in the case of Management of Employees (3) "B", and Organization Glue (4) "D" were also significant; in the Strategic emphases (5) section, in the case of the

statement marked by a “C” there appeared the greatest difference between the currently experienced and the ideal cultures.

Table 2. Values of OCAI Dimensions

Dimension		Current			Ideal			Difference
Name	T	Mean	Std. Deviation	t	Mean	Std. Deviation	t	t
1. Dominant Characteristics	A	21.58	6.31	-2.65**	28.21	7.75	2.03	-3.55**
	B	21.88	6.22	-2.46**	22.92	4.64	-2.20**	-1.15
	C	32.63	8.13	4.59**	21.88	6.89	-2.22**	5.73**
	D	23.92	9.29	-0.57	27.00	7.19	1.36	-1.80
2. Organizational Leadership	A	13.88	7.74	-7.04**	27.08	8.33	1.23	-5.32**
	B	24.75	7.41	-0.17	21.46	7.87	-2.21**	2.44**
	C	40.17	11.64	6.38**	27.58	11.33	1.12	5.39**
	D	20.79	9.51	-2.17**	23.88	9.82	-0.56	-2.80**
3. Management of Employees	A	10.83	6.02	-11.53**	33.13	8.82	4.51**	-9.33**
	B	15.63	3.93	-11.68**	21.67	5.45	-3.00**	-5.80**
	C	50.75	14.64	8.62**	17.08	4.40	-8.81**	9.98**
	D	22.79	12.46	-0.87	28.13	7.49	2.04	-1.98
4. Organization Glue	A	25.63	5.58	0.55	32.29	6.08	5.88**	-10.25**
	B	22.29	6.08	-2.18**	21.88	5.67	-2.70**	1.00
	C	27.29	5.31	2.11**	22.29	5.10	-2.60**	7.43**
	D	24.79	6.99	-0.15	23.54	7.29	-0.98	2.76**
5. Strategic Emphases	A	17.33	6.57	-5.72**	29.17	7.76	2.63**	-6.03**
	B	16.75	6.56	-6.16**	17.92	6.06	-5.72**	-2.03
	C	48.04	9.48	11.91**	33.71	8.90	4.79**	6.94**
	D	18.50	7.68	-4.14**	19.21	6.07	-4.67**	-0.61
6. Criteria of Success	A	15.33	6.77	-7.00**	26.88	6.22	1.48	-5.60**
	B	17.33	5.31	-7.08**	18.58	5.79	-5.43**	-1.66
	C	44.38	11.82	8.03**	32.75	8.02	4.73**	5.53**
	D	22.96	9.29	-1.08	21.79	7.77	-2.02	1.16
(A) Mean of clan		17.43	8.09	-6.98**	29.46	7.81	5.99**	-9.95**
(B) Mean of adhocracy		19.77	6.80	-5.23**	20.74	6.16	-4.80**	-1.79
(C) Mean of market		40.54	13.33	13.53**	25.88	9.75	0.99	12.84**
(D) Mean of hierarchy		22.29	9.43	-2.03	23.92	8.1	-1.10	-2.67

Explanation: Under current and ideal values, t is the one-sample t -statistic, while the difference column represents paired t -statistics. The character "*" indicates a significant value at the 5% level.

Source: Author's own research results

3.C: "Tough competition, high expectations and result orientation." According to the employees, for this statement an ideal value would be both significantly lower than the current situation, and also lower than the average value.

In terms of the average of the 6 dimensions, I discovered (see the last four rows of Table 2) that the culture of the service organization's employees was perceived as more market-oriented and less clan-like. The ideal culture would be considered clan-like and hierarchical, and with fewer market and adhocracy characteristics. The current and ideal value of the clan and the market differed significantly. A more clan-like culture than the current one, and a less market-like one would be ideal; this finding was similar to previous research (Ližbetinová, L. at all, 2016) carried out on logistics companies.

The results of the OCAI survey are illustrated with a radar-diagram (Figure 2).

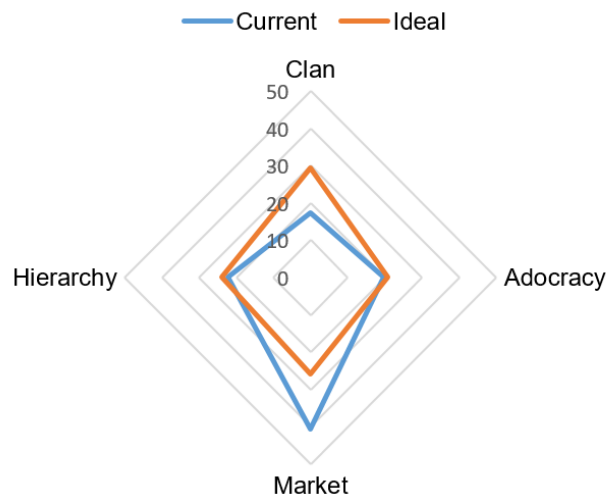


Figure 2: The current and ideal organizational culture among employees of the service company

Source: Author's own research results

The current culture perceived by employees can be described in the following terms:

- Dominant characteristics: performance and task-oriented to an average degree, but it is less direct, more family-friendly and less innovative.
- Leadership: Leaders are perceived as more pro-active and aggressive, and less helpful and supportive and more innovative than static.

- Management of Employees: competition and performance are significantly higher than average; however, teamwork and participation are less typical than average.
- Organization Glue: Rather a market and hierarchy culture.
- Strategic Emphasis: Performance and competition are also strong here.
- Criteria of Success: The market and the hierarchy play a bigger role.

The culture considered ideal by the respondents is different:

- Dominant Characteristics: Characterized by a more direct, family-like spirit, with lower performance orientation; control and structuring are even more powerful.
- Leadership: Efficient operation comes to the fore against innovation; performance orientation is lower, but still higher than in the clan
- Management of Employees: not characterized by tough competition and performance expectations.
- Organization Glue: An above-average commitment to the team and little focus on performance and goal achievement.
- Strategic Emphasis: Strong emphasis on performance and competition, albeit to a lesser extent.
- Criteria of Success: The market and the hierarchy play a bigger role, just like in the current culture, although the proportions change.

5. In conclusion

Based on the above, I obtained answers to my research questions (Q1, Q2). According to the employees of the service organization I investigated, the present culture is more market-like than the others (Q1), while the culture considered ideal by the respondents would change to a clan-like one and would remain hierarchical (Q2).

The divergence from the market is marked; respondents think the organization should move towards the clan. As for the details, the responses suggest that the move from market to clan would be desirable in each of the first, third and fourth divisions; the proportions in the third and the last two divisions have changed significantly, but the market is still stronger, and in terms of hierarchy-adhocracy, only the proportions change in the second division, where the current culture is considered less smooth, and the more efficient organization is the ideal.

The fact that respondents want, for example, a lower result orientation is not necessarily an ideal intervention, as we are dealing with a profit-oriented, service organization. It may even mean that the values of the employees are not in harmony with the basic values of the organization, and an attempt must be made to change the former. What can be deduced as a conclusion is that there seems to be a difference between employee perceptions and desires, something that the organization's management may want to consider when making decisions about culture.

Within the framework of this research, or research into other organizations with similar results, it may be worth examining in a separate research study, whether the values that are considered dominant are in line with the values the management wants to develop, and whether the values considered ideal are in line with the values required by the management. Depending on the needs of the organisation's leaders, it may be worth examining in the framework of comparative research carried out in several organizations whether there is a statistical link between organizational culture and performance as is described in the literature.

6. Acknowledgements

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THE INCREASING SIGNIFICANCE OF WORKPLACE EXPERIENCES

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Abstract: *Talented employees appear to be one of the most necessary groups of human resources from a corporate perspective; however, the general shortage of workforce significantly affects this area as well. In order to ensure their own development, organizations need to introduce methods that differ from their previously applied practices, as this transition is required by rising shortage of workforce and changing employee preferences. One of the novel approaches of HR, which an increasing number of managers tend to agree with, is the importance of providing positive experiences for employees. Workplace experiences largely determine attachment and loyalty to the organization and thus they might have a direct impact on organizational retention and the reduction of fluctuation. From amongst experiences provided by a workplace, the flow experience might be of paramount importance, which might depend on optimal harmonization of individual skills and job responsibilities. Therefore, the needs of existing and potential employees should be taken into account with intensifying emphasis. The study includes a summary of the aspects that represent the needs and changing preferences of labour market entrants (career starters) and employees in Hungary. The two target groups constitute the potential employee stock from an organizational point of view, therefore being aware of their needs might be crucial for ensuring the necessary human resources. There is a parallel between the demands of career starters and employees, but there are differentiating factors that point to the diverse ways of thinking of each age group. Different ways of thinking postulate different needs. Although the presence of financial factors is important for both groups, it can be said that in the case of young labour market entrants, flexibility is more important than financial aspects, which can be decisive in terms of working hours and working environment as well. In the case of already experienced employees, objective aspects are mostly predominant in terms of their expressed expectations, such as salary, stable job and financial stability. Overall, the study also shows the factors that are the least important in the light of the surveyed aspects. According to these findings, it can be concluded that for the attraction of labour market entrants, less emphasis is necessary on company name, corporate vision and social responsibility, and the focus should be shifted towards the local circumstances within the company such as the scope of direct colleagues, and availability and open communication of the management. In the case of already experienced employees, applied technology, reputation of the company and the quality of provided services and products are less important than workplace atmosphere and the balance of work and private life. Based on the study, it is possible to provide targeted experiences by emphasizing the areas that are the most relevant to each group.*

Keywords: *flow; experience; talent; HR; employee expectation; labour management.*

JEL Classification: *J24; J81; M51; M54.*

1. Introduction

From the standpoint of organisational efficiency it is not a negligible fact that corporations need to have the best work force to stay successful, competitive and profitable in the long run in the global economy which operates in a more complex way. The employment, keeping and development of talented people with great knowledge and qualities make it necessary to deal with talents consciously and when it comes to confident management the talented employees appear as critical resource in the organisational operation in case we want to achieve the best results. It is not enough to have the most talented experts we need to manage them the right way since they mean the most critical segment of labour shortage. The forming of talent management systems is not an easy task the source of management difficulties is most often to be found at the leadership level which stems from the lack of change of attitude. The question arises that in case we form a conscious talent management system whether we will have the possibility to achieve greater results by acquiring less resource? The answer is – yes. That is the reason why we have to make a strategic emphasis on finding, reaching and attracting talents and retaining them for the long-run since the right recruitment could be the answer to various development questions. One of the most obvious tools of retaining them is to fulfil the employee needs within a realistic framework which induces that because of the caring operation a certain devotion can be created towards the organisation which through the strengthening of loyalty supports the organisational retaining force. One of the typical employee expectations of the 21st century is to experience and reach a higher level of work-related experiences. If the organisation can give a meaningful answer to this growing demand then it is expected to receive a rather positive feedback in the employee environment. To live through employment experiences ideally can be connected to the perfect experience that is to live the flow. If organizations find methods to provide employees knowingly with a possibility of having a perfect work experience, they will be able to largely improve their attractiveness, enhance employee loyalty, and thereby contribute to the explicit increase of workforce retention. The objective of the study is to – by means of secondary analyses – highlight the possibility of creating a flow experience within the workplace environment and thus of a potential retention strategy for talented employees. To this end, the article presents a comprehensive analysis of how the most recent relevant surveys in Hungary summarize employee preferences and what sort of employment programmes exist to support this approach.

2. The possible connection of talent management and workplace experiences

The latest researches prove (Manpower, 2018) that the ability to attract talents is one of the biggest differentiating factor among the competing companies. There is a growing market for those tools and services which can help the organisations survey their internal system and find the employee who can fit into this corporate culture and strategy and what is most important to the given position. The latest talent analysis tools and strategies not only help to define the right employee but also to find and support retaining the person who fits there.

Based on the definition of one of the theoretical experts of the field (Czeizel, 1997) the talent is a certain amount of potential and promise that the individual would achieve outstanding results in one particular profession, which is on the hand socially useful and on the other hand it fills the individual with satisfaction and a sense of achievement. Connected to the final part of this definition the significance of experiences comes to the centre as a possible tool connected to the talents. If we think of gaining experiences and strive to reach the perfect experience then we must mention Csíkszentmihályi's flow theory. Based on his theory the flow experience is an area of our lives that we can achieve even during our everyday activities we do not need an extremely regulated environment for that. A typical feature of this feeling is such an extent of joy which causes our concentration to reach such a high level during the activity that we can only focus on what we are doing and we shut out the outside world totally. A natural concomitant of this is the distortion of the sense of time as well as the loss of me consciousness since we totally identify with the activity we are doing. The reward value of an activity providing such experience can be so high that people tend to do this kind of activities only because of this – so a well-thought out reward system is not necessarily more efficient in motivation (Csikszentmihalyi 1990).). A natural concomitant of this process is that in the case of such activities we feel in accordance our existing competencies with the tasks to make as well as rule the process wholly. (Figure 1). The figure clearly demonstrates the significance of a harmonized balance between optimal challenges and existing skills. The knowledge of individual skills and proper calibration of ideal difficulty levels for tasks might determine the emotional state of the subject in the course of certain activities, namely what impressions or in other words what experiences determine their particular action.

From the point of view of work activities, the most effective performance is expectable if the level of difficulty of the task is medium or high for the given employee, and the relevant individual skills are at least on medium or high level. Along this theory, boredom and anxiety, as well as transient states between these two emotions can be avoided. When being in the state of flow, the individual operates by exploiting his/her maximum capacity, providing the highest possible performance (Charms, 1968; Deci, 1975).

The primary research subject of flow research is the relationship between the environment and the individual (Oláh - Kapitány-Fövény, 2012), while from the aspect of HR, this can mean the synchronization of the employee and his/her job.

The central idea of the theory is that the challenge offered by the task to be accomplished and the existing skills of the individual abilities are in harmony (Csikszentmihályi, 1997), so that the workload is optimal, which is one of the main objectives of HR activities (Lengnick-Hall - Moritz, 2003). In the course of another related survey, it was also found that the experience and description of the perfect sensation is almost the same regardless of culture, degree of modernization, age, gender, and social situation (Delle-Fave et al, 2011), which suggests that the flow experience can be reached in a work environment regardless of the position and social background.

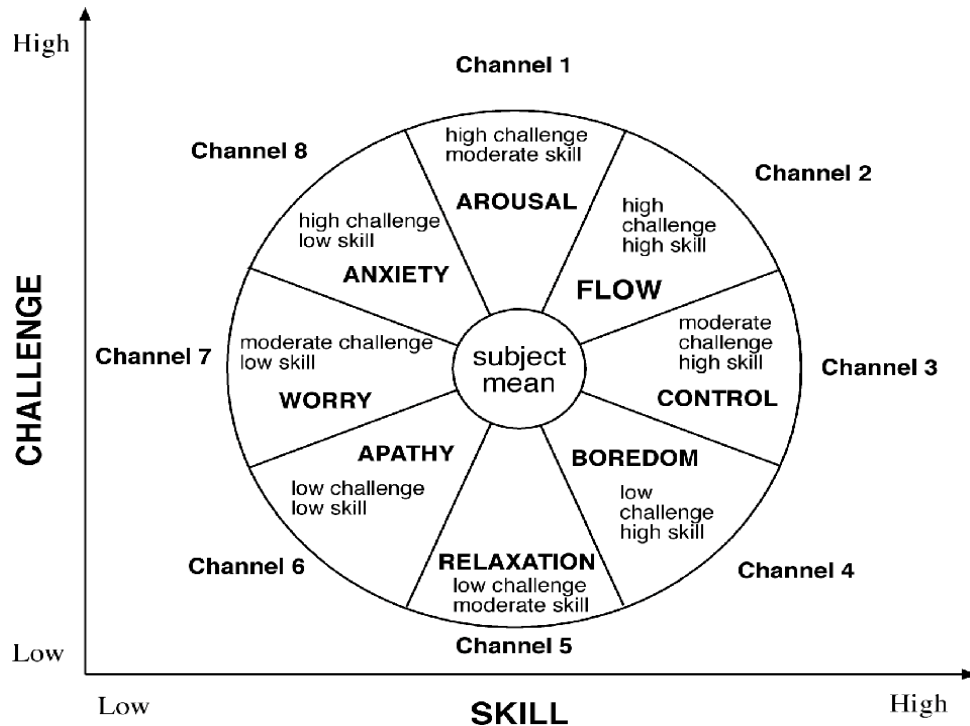


Figure 1. 8-channel model of flow
Source: Massimini – Carli, 1988

When we draw the conclusions we can say that we can have outstanding performance that is talented, most probably in those areas which we can do with joy and commitment. Due to the well-operating HR processes we can achieve this not just during our free-time activities but at the level of work. Ambitions towards the above are primarily based on management considerations from the corporate side, because the shortage of professionals is currently one of the greatest threats to the achievement of corporate goals. Competent professionals typically belong to the group of talented employees, but the complex problem that is due to their absence,

cannot be resolved with a quick solution, which the management team is also aware of (PWC, 2019).

3. Deliberate formation of work experience

A possibility which simultaneously supports attraction and retaining is to form consciously the employee experiences and within this flow experience connected to the workplace and to the organisational strategy (AON, 2018). Although work experience management is not among the basic, traditional HR functions but by applying it corporations can achieve high-level employee satisfaction – which can induces loyalty and higher level productivity as well, which is ultimately the general goal of most organisations – it should be considered to include it and use it in practice among the already existing HR functions (Héder et al, 2018).

For the conscious formation of workplace experience acquisition the corporation has to be clear how people relate to work in a general sense and in contrast what kind of attitude formation is the goal in terms of workplace relation. Typically, one third of our lives is made up of work. Still we have a strange attitude to this: sometimes we receive the most absorbing or most satisfying minutes, pride and identity still this is what most people try to avoid (Csíkszentmihályi, 2010). Considering that work is general and still different it means a great difference in our lives whether our work brings us joy or not. If somebody finds the flow in his/her work and in his/her relationships with people then his/her whole life could take a favourable direction. Although a lot of people think that work is necessarily unpleasant there are a lot of evidence that work is a joyous activity and often it can be the most enjoyable part of our lives. We must call attention to the fact the level of joy and complexity is directly proportional so it means that we will not get happy by the work which can be done in a very simple way but by the tasks which pose a challenge because of their complexity and still we are able to overcome those (Csíkszentmihályi, 2001). It was known in older times as well that the work which we live as a flow activity is one of the best methods to develop human abilities. According to Marx (1956) men and women build themselves up through the production activity, that is “human nature” in itself does not exist we create it only through work to the effect of which we can become from instinct-driven beings to conscious humans with goals and skills.

The turning point is caused by the labour market change that is from the point of view of those who had the power to change the working environment did not care about whether the work gives any joy or not – but nowadays we can recognise a significant change in this area. While before the top leaders kept in mind only the productivity however if the employees do work which gives them joy they would live it not just as an individual profit but sooner or later it would guarantee higher efficiency which could lead to a faster achievement of corporate goals. Nowadays this point of view seems to gain a foothold in the corporate operation – primarily because of the lack of talented employees – especially in connection with those employees who are in key positions and because of their outstanding talent play a vital role in maintaining the successfulness and competitiveness of the corporation. It is because the employee preferences have changed personal needs tend to

appear more frequently which include among others that the work should be attractive, result oriented and enjoyable (Deloitte, 2017).

4. Employee experience in the light of practical expectations

Employee experiences can be interpreted as a certain part of workplace-related experiences, which comprise the entire corporate life path from applying to a position to keeping in touch following termination of employment. Applicant experiences belong here, which are the experiences gained during the selection process, the impressions gained during integration, and the day-to-day work within the organization. These experiences establish the development of a commitment towards the organization and thus the ability for the company to retain the most outstanding talent (AON, 2018).

Thus, impressions gained by employees day by day, namely the experiences along which they are connected to the company, might play a decisive role in the attractiveness and retention ability of the workplace and in the management of fluctuation as well. According to a recent survey, a large proportion of HR managers agree with the significance of the research field and they consider it to be of utmost importance (PWC, 2018b). Due to the novelty of the topic, there are relatively few previous studies, but in Hungary, some studies of larger volume (PWC, 2018a; AON, 2018; Randstad, 2018, PWC, 2019) have become available in recent years. Implementation of the above-mentioned research activities is primarily related to labour market service-providers, and thus the findings of these studies are particularly focused on business life. The main objective of these analyses is to identify the most recent preferences and trends on the employee and carrier starters side in order to find out the aspects along which it is worth to develop such corporate activities, if an organization becomes open to novel HR approaches. The importance of examining the two target groups is confirmed by the fact that other research has also focused on analysing the expectations of career starters and employees, which also supports the emergence of different preferences (Pierog et al, 2018).

Between November 2016 and March 2017, PWC Hungary (2018a) revealed the job selection preferences of nearly 13,000 students and young graduates aged 16-26 years, who studied in secondary and higher education. Survey findings were not representative and were conducted in the form of an online questionnaire. Consequently, it is not possible to treat the findings as a generally acceptable truth, but they may be suitable to draw approximate conclusions from the perspective of the examined generation. The questionnaire asked the respondents about 36 factors, relating to the aspects young people are planning to take into account upon finding employment. Analyses were carried out by means of relative reference analysis, which means that researchers compared the elements to each other instead of comparing them to predetermined values. The research revealed that the most important aspect for young people is flexible work, which means flexibility in terms of space and time, so that the given job can be carried out anywhere and anytime. The second most important factor is basic salary and remuneration, while the third factor in the overall order of importance are the actual colleagues, namely

the nature and composition of the working group. Cafeteria took the fourth place, followed by open and honest communication from the management as an employee expectation. It may also be useful to examine all the factors that are located on the external edge of the preference field. Based on the opinion of respondents entering the labour market or still being in the education system, company name, vision, strategy and social responsibility activities of the future employer are the least important factors in terms of relative importance. These factors have the lowest impact on the career choices of young people entering the labour market based on the examined sample.

Research findings published by Randstad revealed the opinion of labour market actors in a similar way in 2018, but in this survey, expectations of employees were identified. The analysed age group is between 18 and 65 years of age, where the sample is representative in terms of gender, although it is over-represented for the 25-44 age group. The results of this survey reflect the main aspects along which job selection is carried out for employees who already possess work experience. It is interesting that similarly to previous years, financial aspects were identified as the most important factor, followed by workplace atmosphere and a secure employment. Overall, based on the opinion of the target group, workplace atmosphere and flexible options have gained popularity compared to previous years, although the latter is only in the sixth place of the list. According to the survey, the least important aspect in terms of employment are the reputation of the company, state-of-the-art technology, high quality service and social responsibility. It is also a surprising finding that the interesting nature of job-related tasks is only important for 15% of the respondents, which appears to be decreasing over the last two years. This factor was important for 23% of the respondents in 2017 and 35% of the respondents in 2016.

Comparing the findings of the two surveys, we can see an interesting result in terms of overlaps and differences between the potential employee opinions of labour market entrants in many cases without experience, and the opinion of already experienced employees (Table 1).

Table 1. Factors determining job choices of carrier starters and employees

Factors most determining choices	Job choice preferences of carrier starters	Job choice preferences of employees
1	Flexible work	Financial aspects
2	Basic salary	Workplace atmosphere
3	Colleagues	Workplace stability
4	Extra payments	Financial stability
5	Honest open communications	work/private life balance
Factors least determining choices	Job choice preferences of carrier starters	Job choice preferences of employees
1	Company name	Good repute
2	Vision and strategy	Modern technology
3	Corporate social responsibility	Quality of products and services

Source: Own editing based on PWC, 2018a; Randstad, 2018

The conscious exploration and shaping of the research field is crucial, because when the company wishes to attract talented employees it is an important aspect that the messages of the company are consistent with the real, everyday work experience of employees working for another company. This also means that employee experience must be in line with employer branding, that is, in order to successfully attract and retain employees the needs and preferences of the target group must be known, the requirements of the existing workforce must be understood and the employee experience must be consciously managed (PWC, 2017).

5. Conclusions

According to the surveys, the opinion of labour market entrants and already working employees is well comparable, even though the results of the survey of the two target groups were carried out with different methods there are similarities in terms of the final findings. This suggests that responses of career starters are thoughtful and realistic, as there are parallel answers in the case of several factors. However, the dissimilarities are due to differences in the expectations of each target group of various age. Based on the summary, it can be stated that financial aspects are an important factor for both employees and career starters. Although financial factors continue to play an important role, there is a noticeable tendency of change between the opinions of the two groups. According to the data of career starters, the importance of salary may even be overruled by potential flexible work, which may indicate the changing needs of the younger generation, and the demand for freedom and autonomy. Although the aspect of work/private life balance has been mentioned in the case of employees within the first five most determining factors, it is preceded by objective factors such as financial aspects and predictability, the latter appearing as secure employment. In terms of career starters, honest, open communication also plays an important role, and when it is interpreted together with flexible work, a parallel can be found with the flow theory. According to flow theory, one of the prerequisites for achieving this state is full immersion and commitment in work, which might be supported by flexible working hours, as this can be done through individually set time schedules. As an additional linking point, honest open communication can also be interpreted as the aspect of regular feedback. Factors that are least relevant in terms of job selection have been indicated by both career starters and employees. This information is useful for employers to develop their communication by considering it, since their attractiveness is not supposed to depend primarily on these factors.

In summary, it can be stated that if organizations are aware of the preferences of their own employees and their potential target groups, they are able to shape their internal and external processes consciously and efficiently, they can aim for a positive work experience and in an optimal case, implement measures that support the achievement of the flow experience. By considering these aspects, they are able to retain their outstanding employees and achieve new ones more successfully,

which in long-term might contribute to corporate efficiency and performance growth, thus conscious provision of employee experience can also be interpreted as a strategic issue.

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SERVICE: FROM GENERAL VALIDITY IN ECONOMICS, TO DOMINANT LOGIC IN MARKETING

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Abstract: *The paper aims at revealing certain core service elements and features of the nowadays economy that come from services' economics but have general validity. The approach is purely theoretical and we make no mathematical or empirical propositions or developments. The roots from the classical economic thought and from the services literature concerning the service feature are also underlined as characterizing the whole economy developed to the level of a generalized market. The capital role of the business literature (and especially of the marketing developments) in the field of service and services is evoked, but the concern of the paper is for the economics approach, underlining that the most common approaches of this last one are scanty in involving the issue of serving and of service immaterial marks in its very substance. Certain details describing the characteristics of immaterial activities brought by the services economy literature are also evoked, in the purpose of seeing that their validity is not limited to the only most immaterial economic activities, but it is general, at least in the immaterializing nowadays economy. Thus the necessity of including their approach in the scientific theoretical perception of economic phenomena can be revealed, and the importance of capturing such marks in general economics is shown. Therefore, the presentation is focused just on those traits that are not particular (neither for material production, nor for immaterial), but consistent with all the economic activities, no matter their degree of materiality or immateriality. The paper concludes that such elements and approaches should be more profoundly included in economic analyses and more accurately described in theoretical plotting of nowadays economy. Such a research will be of use to scholars and generalists, in improving their approaches and in directing their researches on attempts to take into account widened (and thus more realistic) horizons, if compared with the most usual (rather particular) ones.*

Keywords: *services economy; service economics; generalized service; Bastiat.*

JEL Classification: *L80; D49; E23; O14.*

1. Generally Introduction

We live in a world where the number of services was very much growing in the last half of century, and it still is. Moreover, certain services have high shares, mainly in the most developed economies. It is mainly the case of the services capturing the highest technical level.

The immaterial component of all “productions” or economic activities and of all human activities is growing, having as consequence the modifying of practically the whole economy and society.

In such conditions of nowadays, economics remain grounded on the industrial bases, as it was built beginning with the industrialization periods – when “a kind of «production crowning» (during the period of industrial take off) [and thus] a censoring of judgements started” (Jivan, 1993, p. 21). As a result, in the most usual economic approaches, important parts of the economic reality are still remaining marginal if compared with the characteristics, features and approaches set during that periods of dominance of the growing industrial production. Such common materialistic and industrialist approaches are still defining mainstream economics, in despite of the growing complexity and immaterial character of nowadays economy, in the knowledge based society.

Our paper proposes an unorthodox approach, grounding an inquiry after service economics and also possible developments for general economics. It is a part of a larger research (please see our bibliographical list), by which certain orthodox approaches are put under question and openings to widened horizons are brought in economics.

As expected, the main background of our paper is from the literature concerning service and services, but also from the general economics. In fact, our stress is not on the business literature (mostly developed in the marketing field): but we focus mainly on the general economics, we adopt an economics' approach.

The background of our research is not shortly presented in the introduction – as usually in a research paper – but it (and certain content of it) represents the very matter of our presentation and, therefore, it comes in the next sections of the paper. Thus the conceptual elements concerned – that can usually be ignored by common economics literature – are pointed out in the suitable sections and their most important literature sources as well.

We also explanatorily note from the very beginning that our paper is a theoretical one, and we do not develop mathematical models and operate no empirical developments.

We focus on certain features defining the nowadays economy that were seen in services economy, and the core one is the defining *service* mark. Those specialists (theoreticians of service and of services economy) have firstly perceived such characteristics, noted and pointed them out, and developed a suitable economic literature, in service economics and in business literature; the specialists in market were the first ones who understood the importance for their science of developing the suitable approach for services. Thus the marketing literature became very rich in the field of services.

Such treats of the nowadays economy are very important. It is true: they were revealed by service' economics mainly as features of services and of services' economy; but their general relevancy and their validity for the whole actual market – at least in the case of the most important of them – cannot be denied. We observe that they should no longer be kept in just a marginal approach of it. The fact that certain such marks are generally significant and that their importance for the whole

economy – *i.e.* including the material goods' production and market too – is, in our opinion, either underestimated, or not well understood. Thus, such service characteristics are taken into account just at lower levels, levels that are not consistent with their spread and general significance. O perhaps they are not enough seen and, therefore, adequate developments are not enough involved in the most usual analyses of general economics approach.

2. Approaches, definitions, conceptions and the generalization of 1993

In this section and in the next one, we focus on certain important developments concerning the service mark, or connected, in the purpose of noticing main roots of it, even if certain of them are forgotten or less known.

As Romanian author, the discussing concerning the literature on the service issue is appropriate to start with referring to the fact that, around the year 1930, *Mihail Manoilescu* employed, in his analyses on the differences between countries (concerning mainly the productivity of those economies), the criterion of capital level, *i.e.* of the technical level of the industries developed in such economies, but not the criterion of *materiality* of such industries. We notice such view of the Romanian author, because it is relevant against the classical approach in economics, which was – and still is – very much focused on material-immaterial distinction.

In the sixty years of the XX-th century, *William J. Baumol* (Baumol, 1968) provided his famous researches concerning the cost disease. Thanks to the developments brought by the service economy, we can today (in nowadays) better understand realities linked to the *service* issue and, thus, we can already show up that such approach was fundamentally made on materialist (industrialist) perceptions on the economic realities. We can have now a better understanding in what can be suitable for the immaterial activities that characterize our nowadays economy inside the knowledge society.

Very important contributions are brought by *Jacques De Bandt* (see De Bandt, 1991 and other many papers) and *Jean Gadrey* (see references concerning Gadrey, 1992, 1996 and other many researches could be referred). Gadrey better defined services, designing the representation of a service activity by a triangle taking into account (1) the supplier, provider or, better said, performer, (2) the client and (3) the reality transformed (that represents the result of the activity concerned).

One of the most important contributions to analysing the services economy is that concerning the issue of productivity (De Bandt, 1991; Gadrey, 1996), consistent with the particularities revealed by those authors and by other researches in the field.

Such researches may ground important approaches, like, for instance, the generalized manner in understanding the economic activities (Jivan, 1993). “Considering the economic phenomenon from the market point of view and not only from the production point of view, [...] the whole system of economics is centred on exchange. The economic model is one-sided and imbalanced if it is centred on production, because it ventures to perceive, to conceive and to analyse all other aspects of reality under a distorting angle. [...] If we really accept exchange as being

the centre of economic life (and not the production), and if we approach the economic activity by starting from its functionality, then we can see that all human activities are made to be supplied to our fellows. In a market economy the necessities are covered through the indirect way of exchange.” (quotations from Jivan, 1993)

The quoted paper comes as a synthesis of the service economy that was already well developed in the beginnings of the last decade of the XX-th century, as a qualitative further step, scientifically stimulated by the Services World Forum.

The core point of this research is *the general scheme of an economic activity*. The components detailed in this scheme are: (a) the conception/conceiving and organising the activity; (b) obtaining the resources (materials, information etc.); (c) realising other works (manipulating or/and modifying the resources, manufacturing objects etc.); (d) delivering or to fulfilling the command. “The functions fulfilled by each economic agent in the economic and social mechanism exist under the form of services that are done to the beneficiaries, to the business partners and to the society as a whole. [...] We live in a world with some economic phenomenon of great amplitude which demonstrates another type of economic growth than that classical one based on productivity and quantitative measures: it’s about a functional growth, a service-type growth.” (Jivan, 1993)

The representation of a service activity made by Gadrey (1992) by his well-known *triangle* (see *supra*) may be taken as a starting and inspiration point of the “generalized scheme of an economic activity” (Jivan, 1993), but in the more recent paper here quoted, the *general* character was seen and pointed out: the stress is especially on the general validity of such scheme (design). That scheme is representing, either the case of services, or that of the material productions. It reveals the service character of economic activities developed in a generalized market economy. Such an approach is consistent with the invisible hand of Adam Smith (defining for the market economy), being valid not just for the most immaterial performances, but actually for all “productions” and business (and even for non-market services): it represents (in a unique scheme) the core spirit of serving. Therefore it was later called the scheme of the *general service* (Jivan, 2000).

The characteristic traits of services are based on their immateriality, supposing a defining human inter-relation (between diverse categories of economic actors); the orthodox “production” (performance) and “consume” (benefit) are not distinct processes, but just a single unique one. Each performance is also unique, even personalized, defining the variability of services, which amplifies the defining heterogeneity of the tertiary sector. Such features are described in the already well set theory of services (see, for instance, Gadrey, 1996, Jivan, 1998).

In the new theory issued by Jivan (1993) and developed afterwards, such marks are not just certain particularities of some part of the economy (*i.e.* valid particularly for the case of immaterial activities): but they become characteristic for the material production too.

More generally speaking, such features are shown (Jivan and Năchescu, 2017) as being more and more valid for the whole economy: in the conditions when nowadays economy is growingly immaterial. The servicity theory (Jivan, 1993 and 2000) also shown that the marks here reminded generate capturing the characteristics of a

monopolistic kind of competition and other features of the market that make it being “untypical”, *i.e.* very different against the orthodox type of competition; and such competition being more and more valid for the whole economy. In other papers (see our references from the bibliographical list) we detail also other important teachings coming from service economics, such developments being much contributively in the important matter of productivity, which can be generous in developing economics, here included the problem of putting under question the valences of marginal calculations in the conditions of the growing immateriality of the economic activities in nowadays.

After all, the main element to be pointed out – as ground for all features of services and even of all nowadays economy – emerges from the *service* defining element itself.

3. Forerunners and followers

Pierre de Boisguillebert considered the material goods and the services as having the same position against the final consumption (according to Jivan 2016, p. 21); in this respect he deserves to be considered a forerunner of the conception of the generalized service (Jivan, 1993, 2000).

The physiocrat *François Quesnay* was taking into account the destination of the activities, despite the “*form of productions*” (the form remains the criterion still employed in the modern times for defining the difference between the first two economic sectors, on one side, and the tertiary sector on the other): he included in his famous “sterile class” either activities like that of handicraftsmen, or trade, transport and other services (Jivan, 2016, p. 115).

The approach of *Theodore Levitt* (1974) is considered by *Christian Grönroos* as meaning that “people do not buy goods and services for basically different purposes” (Grönroos, 2008, p. 301). The same researcher Grönroos quotes also a paper of himself from 1979 (in Swedish), adding that: “The citations from 1979 [...] imply that goods and services are consumed in essentially the same type of process.” (Grönroos, 2008, p. 301).

It may be right that certain such possible forerunners are just in terms of *meaning* and *implications*, but it is fair to mention them, as we founded them as having a logical connection.

In any case, no matter what other possible forerunner could be considered as valid, but it is sure that the fundamental forerunner was and remains *Frédéric Bastiat*: from the classical economics he generated the idea of the general service: economic activities are all services. It was not important for him if the concrete form was that of material goods or of services (immaterial), but the importance was given by the fact that a work (effort) of an individual brings satisfaction to another: this is the way human activities develop (Bastiat, 1982, p. 118). The researches we mentioned (and also those that follow) can be considered as having the value-service as their conceptual base.

It can be seen that certain contributions brought by service economics after 1993 are valid not strictly for the immaterial activities, but for the entire nowadays

economy. We refer, for instance (as made in Jivan, 2014), to *circular economy*, *functional economics* (Stahel, 1997), "economics of experience" (Pine and Gilmore, 1999). In the same way it may also be seen the representation of *product and innovation in terms of characteristics*, in a Lancasterian perspective (Gallouj and Weinstein, 1997; see also Djellal and Gallouj, 2008, where the *characteristics-based perspective* is referred). For all the quotations in this paragraph, please see Djellal and Gallouj, 2008.

More recently, the service character of economic activities is also seen as unitary in diverse ways. For instance, Gadrey and Gallouj (Eds., 2002, p. 225) say that a *continuum* is seen between goods and services (by Pim den Hertog), rather than a distinction. It can be mentioned that another way of retaking the concerned idea is approaching the general service as a logic of marketing: e.g., even more recently, service was approached as a "dominant" logic; Vargo and Lusch (2004, 2008) developed very much the issue, making it famous in business (for the particular case of marketing: it is about the well-known SDL – *service dominant logic*). Another famous manner in which the service concept arrived to be developed (re-orientated) in marketing is that of CDL (customer dominant logic). It was initiated by the Northern School, and evolutionary developments are well shown /set in Grönroos, 2008. The conception of Grönroos (2008) is from the aria of the customer dominant logic adopted by the Northern School where Grönroos is a most important representative. We just mention it and we do not develop the ideas of such approach, but it should be underlined that it is also in a marketing approach, bringing another further approach, after SDL. Those most recent developments are the most well-known angles of approach: on the business line.

It is true that the marketing specialists were the first interested by the reality of services that was very obviously growing in the seventh, eighth and ninth decades of the previous century: they saw that there is about selling and promoting another kind of "products": immaterial ones; and from such reality, their researches emerged and were very much developed. In such a perspective – *i.e.* on the marketing line – it is normally to reach important degrees of detailing and of considering thoroughly and, as a consequence, it was successful to get fame (as we already said that is the case of *service dominant logic* and others).

But, in a historical rigorous view, we remind that the approach of *the generalized service in the market economy* was arisen basically in a general approach (*as an economics' development*), many years before the famous developments for the business aria that we just mentioned: *i.e.* the general scheme of an economic activity (Jivan, 1993; and moreover, if we go much backwards in time, the basis of such approaches was put by Frédéric Bastiat, in the classic period of economics; going even more back, certain roots can be considered to be find at François Quesnay – or even at Pierre de Boisguillebert, as previously shown; see *supra* in this section).

4. Resulting requirements (synthetically)

We conclude and underline that, in despite of the fact that the issue of the generalized service was conceived and firstly concerned in the general *economics*,

the area where it gets the most important developments is mainly marketing: such an idea next developed in a distinct way. The *business* specialists took and very much developed the matter, even bringing certain famous concepts.

We consider that certain scientific contributions of the researches concerning services economy must be better taken into account in actual economics, as representing marks for nowadays economy, *i.e.* including for the “material” part of it, not just for the already relatively immaterialized.

Synthesizing, the main aspects revealed by such contributions refer to certain characteristics pointed out by the researchers in the field with respect to services' and services' market characteristics. Among such characteristics, the relative immateriality (rather than the usual agricultural or industrial stressed materiality) is included on the first place, followed by many others coming out from it or connected. We remind as exemplificative: the non-discrete character of the “productions” (the volume of quantities rather cannot be commonly measured in quantitative units or counted), the growing importance of the psycho-emotional, “image” and subjective elements (if compared with the very concrete and objective ones), the determination existing from diverse and complex factors, generating various conditions and variable complexity, here including education, culture, diverse trends and general attitudes in the societal context, and also the growing and complex information and challenges and incentives (advertising, publicity and promotion here included, but not alone) and the complex structure of the offers. The regulations – diversely issued and become manifest – are other important factors. In the same respect, we may add the existence of activities “exterior” to the market (that influence the market performance), the rather rigidity of the offer on the market, in connection with the variability of the demand, the subjective character of the market and the modified role of the price (tariff) on the market too (this last one is a large specific issue that may be developed as a distinct matter). Let's mention also the growing role of qualitative aspects (rather than those of volume and quantity of the elder times), the amplified inter-connectivity on the market and in the society as a whole; the tendency for personalizing performances and experiences as well as possible and, thus, their character rather unique, and the frequently oligopoly situations come to enrich this picture.

“When a higher quality product is offered, a service to the client is made in the same way as when a supplementary service is offered or when the price of the offer is lowered (on the same offer).” (Jivan, 1993).

Despite the small interest of general economics in better capturing and involving the contributions brought by services economy and service economics (Jivan and Năchescu, 2017), we remain convinced that nowadays' realities require such approaches, in the intention of making economics better revealing the actual economic facts, being more realistic, on the new horizons allowed by certain developments got in the services' economy literature. Business represents particular domains (specific areas of acting in the market) and, comparatively, the generality represented by economics offers a more widened perspective for development, containing much reserve for such a generous scientific issue.

But unfortunately, the mainstream economics remains billeted, in certain respects, as like it was set up in the period of the industrialization (centuries ago) and keeps forms and settings that are no longer very adapted all of them to nowadays knowledge society and economy based on the most recent advanced knowledge. We refer mainly to the material-centred (or production-centred) approach. In this respect, we admire the business aria, which, as already said, keeps better in touch with the last decades' developments in the economic life (we refer mainly to the growing immateriality of the economic activities).

All such features are much weightier and influential if compared with how they were when the theoretical conception concerning competition (pure and perfect) and the general equilibrium model (of Leon Walras) were set up. Their impacts are actually much more important and therefore cannot anymore be perceived as marginal. Their conceptual analysis and functional interpretation must not remain as marginal to the former model: they even tend to become the core of the dominant economic mechanism in the economy we have in nowadays knowledge society.

Such realities are not simple accidental facts that are just influencing the model kept by the common economic science as being in the core of the logic of market mechanisms' functioning (orthodox model set up a few centuries ago, in the period of industrialization); but, in nowadays, it can be seen that the mentioned traits and features define themselves as being main important aspects of the actual economy. Therefore, seeing properly their role is a need of actualizing and developing the economic sciences – such task being very difficult in the conditions of their growing complexity.

5. In conclusion

In the previous sections, certain important elements and traits of services, revealed by the services literature developments, were mentioned or pointed out. In that what concerns the *service* conception itself, presented by Jivan (1993), the classical economics role in issuing it was also shown, and a short suggestive inventory of certain important recent contributions too.

The elements and traits of services we revealed have not just specific validity – particularly for the most immaterial activities –, but are actually defining for nowadays economy as a whole and, therefore, they are suitable for general economics' development as well.

In despite of the arising of the issue inside the *economics* literature, in the nowadays dominant economics, such issue remains in a relative marginal place and paradoxically was assumed and developed rather in the *business* literature, evolving from its *general* validity (*i.e.* for all the economic activities) to the role of a *logic* or optics of approaching the marketing work.

We underline that, the contributions we evoked from the literature concerning service and services, elder or more recent, have not a validity limited to only the services, but they are characteristic also for the material productions: because (1) all economic activities involve services, because (2) they all economic acts are connected to such immaterial activities, because (3) they become growingly complex (getting traits

formerly described as particular for services) and, over all, (4) they have the spirit of serving as core and defining mark in the generalized market economy. Such features, elements or marks are consistent with the general scheme of an economic activity (the general service), as described in Jivan (1993) and, therefore, they deserve being taken into account as core in the general economic science too. We mean that the most important developments brought, on the matter, in the marketing literature (namely specially as a dominant logic) represent an important, but insufficient turning to account of the mentioned contributions from the service and services literature: it should be said that the scientific capitalization of such developments is not enough; they deserve a turning to the best account in economics approaches too.

In sustaining our opinion, we quote from Mihail Manoilescu (our translations): „[...] the conclusions that are unilateral in a forced way, which are commanded by calculating produced values, must be adapted in every moment to the structured multilateral frame of reality [...]” (Manoilescu, 1986, p. 78.) “The theorists [...] are merely disputing the facts if such facts do not meet certain theories [...]” (*idem*, p. 123), and the quoted author speaks about “the necessity to crush the false buildings of the [...] economists” (*idem*, p. 138).

By its approach, our paper makes openings and, in the same time, requires developments in the direction concerned: *i.e.* in enriching and reviewing certain main issues of the common economics in the view created and provided by service economics (in the field of market, productivity and others; see also our papers Jivan and Năchescu 2017; Jivan, 2018; Jivan and Năchescu, 2018 a; Jivan and Năchescu, 2018 b; Jivan, Curea-Pitorac and Tînjălă, 2018).

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THE ANALYSIS OF THE EUROPEAN COMPETITION POLICY BASED ON STAKEHOLDERS' INFLUENCE

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Abstract: *This paper analyses the importance of stakeholders' actions on the effectiveness of the European competition policy. The national governments, European decision-makers, advisory institutions and civil society take the form of interest groups that have expectations, invest resources and advocate on competition policy. The paper follows the process of adopting a specific strategy (insider/outsider), depending on the type of the interest group and it divides the organizations in those with "strong ties" and "weak ties". The goal of each interest group is to arrive at the main European competition law authority, the European Commission. As it has the full power to investigate cases and manage the process, as well as implementing decisions based on proposals, influencing this institution represents a real challenge for the stakeholders. In this process, some relevant aspects are the perfect timing for lobby, the dimension of the lobbying coalitions and also the capacity of attracting supporters of the cause. Interest groups do not have equal amount of influence power nor the resources but they do change the policy, according to their particular interests, by choosing the right strategies, partnerships and means to influence the decision-makers.*

Keywords: *European Union; Competition Policy; stakeholders; interest groups; citizens; trade unions; business / employers' associations; consumer organizations; regional authorities; governments; European Commission; European Parliament; European Council; EU Council; Economic and Social Committee.*

JEL Classification: *F13; F15; F42; J58; K21; K33; L44.*

1. Interest groups – approaches and strategies

National governments, European decision-making and advisory institutions, companies, employers, citizens, employees, and trade unions that organize them, including civil society as well, take the form of interest groups that have expectations, exert different levels of pressure on competition policy, and determine to rethink its design. The study of interest groups represents the analysis of the organization, aggregation, articulation and intermediation of the societal interests within the definition of public policies (Beyers et al., 2008). As Tatham (2015) points out, as states concede elements of their sovereignty to the supranational level of their international organizations, as in the case with the 28 EU Member States, sub-national interest groups (e.g. local/regional authorities, citizens' organizations, trade unions, or employers' unions) mobilize at the supranational level of the state in an attempt to influence European policies. Superior effects on the influencing process

are held by the most representative players, as well as the most endowed regions that institutionally are well-developed or that have a numerous population (the cumulative effect applicable not only to regions but also to other interest groups). In the literature that addresses this, we find research papers that analyses the way and the circumstances in which the interest groups are mobilizing. As Beyers and Kerremans (2012) demonstrates, naturally, regardless of the sector of activity or of the country, local/regional/national interest groups tend to lobby particularly (or at least first) around close to the decision makers. Yet, when they are missing or they are weak, the possibility that the group interests to call on to others levels of government increases, the decision being usually made according to the policy in question (and obviously its national or common nature), using a cost-benefits analysis. Regarding the channels through which they have access to influencing European policies, as I have explained before, belonging to European network or to an influential network among decision-making institutions can be a solution. Eising (2007a, 2007b) affirms that European officials are discussing among them as much as they discuss with the representatives of the organizations that have various interests. The access is defined as the frequency of connections/meetings and is determined by four aspects:

- the European institutional context (this means the allocation of power between the European institutions and the favourable circumstances of contacting and accessing the European decision-makers);
- the dependence of the state resources/business environment (The business environment bears the costs or benefits of the advantages of the European legislation issued by the European institutions, so it is important for it to be in touch with the representatives of the institutions. On the other hand, the European institutions needs qualitative and accurate information because based on them, there are taken the best and acceptable decisions that can be implemented. Additionally, the business environment could be a good source of information and becomes useful and approachable especially if it has a large economic and/or a European dimension);
- the organization of the interest group (the access to the financial resources and the specialization are advantages; e.g. EU institutions generally consult a multitude of stakeholders; instead, taking into account the multi-level governance structure, political leaders prefers technical expertise, the economic influence and the capacity of organization to be able to represent as many interests as possible and to build a common platform at European level, ahead of national interests; also, they prefer as discussion partners big firms to the detriment of business associations);
- its strategy regarding the way how they decide to represent the interests (three types: insider – through direct and close relations with European officials and parliamentarians; outsider – pressure through media or public's assistance; nationalist – the selection of dialogue partners using language or nationality criteria.

From a strategic point of view, as Beyers (2004) advocates, the interest/aim pursued could be gaining access and, implicitly, gaining a favourable decision and/or

creating a “voice” for calling attention or for creating a political/institutional conflict. Depending on these and on various institutional variables, they have a particular influence in deciding either to adopt a specific strategy or combining more strategies (the most popular mix being “go public”/insider with outsider).

The decision of following a certain strategy also depends on the type of interest group. Professional associations and organizations that represents citizens' interests are more prone to adopt outsider/“go public” strategies; even they have access to generous resources. Inside strategies (access) prove to be more useful when the decisions are taken at Commission level (e.g. implementation of competition policy or the legislative proposals on this topic), while outsider strategies under public support would be most likely be the best option for the case of the Council, the Parliament, and generally the political or party representatives, who are more sensitive to the subject related to the public perception.

Chalmers (2013) supports and develops the idea discussed by Eising (2007a): lobbying is based mainly on providing information by interest groups. Due to the time passing pressure faced by European decision-makers and due to the lack of sufficient human resources made available to have access to all categories of information in all sectors of activity, the informational network of interest groups allow them easy access to influence the policies. These networks are divided in two groups. The first are those with “strong ties” built on mutual trust, inside them circulating usually redundant information. The second are those with “weak ties” composed of known players with diffuse connections from various expertise groups, inside this group the flow of new ideas and information being more vivid and intense. Several factors determine the way and the moment in which interest groups influence the various policies. First of all, if the influence activity takes place as a part of an organized campaign and, especially, a funded one: the balance tips in the favour of business interests that have more financial resources. Klüver (2011) emphasizes that as long as decision-makers are usually approached about the same policy by several interest groups that simultaneously want to influence it, the success of lobbying is somewhat independent of the type of interest group brought into discussion, but the success rises as the number of lobbyists involved increases, and especially if it is carried out within lobbying coalitions composed of interest groups that pursue the same interest and push political decision-makers in the same direction.

The success of lobbying/the power of influencing a policy depends on to a significant degree on the relationship between the importance/prominence of the policy under discussion and the dimension of the lobbying coalitions/interest groups that wants to influence the policy. In the case of an interest group being part of the largest coalition, the importance of policy for the European space has a positive effect. Thus, emphasizing the importance of the policy that the interest group want to influence in order to attract attention and implicitly attract supporters of the cause is one of the successful approaches.

The European Commission ensures the implementation of European competition law. As Lowe (2008) mentions, it is important to underline that the main European competition law authority is the European Commission that has delegated to DG

COMP the full power to investigate cases and manage the process, as well as implementing decisions of the competent Committee/Commissioner. The Commission takes final decisions on proposal and political documents (e.g. directives, communications) and on various cases based on proposals made by Commissioner for Competition, makes legislative proposals to the Council's attention.

2. The main interest groups

Citizens represents the main beneficiaries of competition policy. For a better understanding, it is necessary to clarify the meaning of citizens that have to be understood as consumers even the large majority of them are in the position of workers/employees. Generally, although this policy has an undeniable direct impact on citizens, the influence on the policy by them can be exercised in a more tangible and effective way only through the elected deputies in the European Parliament but it is limited, as the competition policy is not the subject of the co-decision procedure like about 75% of the European Union policies. Competition policy is rather the aptitude of technocrats involved in an apolitical decision-making process based more on expertise, in which the democratic aspect of some debates is preferred to be present as little as possible. The most significant and powerful moment for the European Parliament is voting, together with the European Council, the Commissioner responsible for coordinating this policy, nominated by the Commission's President among the proposals of the national governments. Although the European Competition Commissioner has implemented a structured dialogue with Parliament as a form of implementation of the consultation provided in the Treaty on the Functioning of the European Union, Parliament considers it important but not sufficiently consistent with regard to its democratic control function over the Commission.

A larger possibility for citizens to influence the policy is through National Governments representatives in the EU Council, competition policies issues being addressed within the Competitiveness Council. In addition, the citizens' view could be endorsed by the Heads of State/Heads of Governments that participate at the European Council summits. Taking into account the increasing transnational/global profile of companies and national tensions that are particularly sensitive to availability of employment matters or unemployment rate, Member States, at group level, have been more focused on precise matters related to State aid contributions. Yet, both in State aid rules and merger control, making concessions to satisfy the national interest can influence the proper functioning of the markets. In the report from 2010, Mario Monti asserted that in the case of mergers there is the need of removing the "2/3 rules" which gives jurisdiction to national competition authorities where more than two-thirds of turnover of companies which merge take place in a single Member State. In order to encourage the emergence of some "European champions", this situation is proposed to be eliminated (inherently, this implies the relocation of the central European administration – European "one-stop shop" – and the cooperation between national competition authorities needs to be increased),

because it favours the support of states national companies by using national veto rights. As regards to State aid, the proportional and European-directed control is still considered a condition for a possible allocation of resources to non-performing public investments and therefore, their depletion.

In the design of various European policies, the European Union (just like the rest of the Member States) uses social dialogue formula since 1985. It involves discussions on social and labour issues, consultations, round of negotiations, as well as common actions of social partners (particularly associations of employers and trade unions). These initiatives can be bipartite (when it refers to those two categories of partners mentioned above) or tripartite (when the three parts of the dialogue are trade unions, the associations of employers and the representatives of the European Union institutions).

As the trade unions represent an important stakeholder in the design of the European competition policy, the influence of the employees consolidates in a regulatory framework by the appearance of the European Works Council in 1994 as a result of Council Directive no. 45 on September 22, 1994. Another factor is the procedure for information and consultation of employees of “community-scale companies”. The directive clarifies the notion of “community-scale” of a company and it also clarifies a “community-scale group of companies”. In the two types of organizations, a European Works Council may be set up or it may be applied the procedure for information and consultation at the request of at least 100 employees or at request of their representatives from at least two companies in at least two Member States. This can be achieved through the dialogue between a special negotiating committee (purposely composed of employees and elected by them, with a minimum membership of 3 representatives and a maximum of members equal to the number of Member States, respecting a balanced activities and gender distribution) and the central management of the company with the support and at its expense, under a written agreement.

Because of the trade union pressure from European Trade Union Confederation – ETUC and the European Trade Union Federations, new European Directives that regulates the efficiency of European Works Councils update the previous normative version. The concept of “consultation” of employees is linked to the elements of time and procedure optimization that allow expression in a dialogue and take into consideration employee representatives’ opinions in the company decision-making process. On this occasion it is officially recognized the important role that social dialogue partners can play, both representative and competent trade unions organizations, the employees’ representatives and employers’ organizations. The latter have to be informed during the negotiation stages in order to proper supervise the process of creation of European Works Councils and to encourage best national and transnational practices. European Works Councils, whose transnational role is better highlighted, can have a small committee to ensure daily performance of the activity.

Trade unions have required to be informed by the Commission when companies submit notifications for a merger of acquisition. At the same time, they have requested the Commission’s trade unions consultations not to be limited to an

ordinary meeting, but to create a real dialogue space and to maintain employees' representation structures during the actual merger or acquisition for not putting in order not to endanger interests of employees. This proves a great interest in politics, but the two categories of social partners generally have a low influence power. The consultations with them are limited to art. 153 of the Treaty, to elements related to the social rights of workers: promotion of employment, improvement of working conditions, social protection, representation, and human resources development. Companies and associations consider that competition policy helps eliminate cartels and seeks to avoid the abuses of dominant position and to settle various agreements between companies, having effects on the efficiency of companies and markets and contributing to economic growth in the European Union. However, companies believe that politics is a problematic instrument with many rules that has led to a very complex and complicated economic system, far too restrictive and inflexible. These generally have little interaction with the Commission and with DG COMP, with the frequency of contacts being higher only if they must interact because of economic interests or are under investigations. They are generally skeptical about the decisions taken by the Commission, about how the Commission decides and invokes the legal arguments, some of them questioning whether their points of view are taken into account.

Employers' organizations have begun to take on an increasingly important European dimension (BUSNESSEUROPE is relevant and active at EU level) compared to other non-business groups (e.g. trade unions, professional associations, and various citizens' organizations). One of the reasons previously invoked is the material resources that their member can mobilize in their desire to influence the policies that directly affect them.

Most of the business associations are regularly consulted (including online) by DG COMP on the development of new guidelines. The vast majority of them have regular interactions with authority, which resulted in satisfaction. In the case of financing/acquisitions/mergers/surveys, a dissatisfaction of associations is about the burden of reporting information on their business (the reporting format, some requested information is considered redundant, the need to allocate human resource for this activity) and the short response time that makes their activity difficult.

Consumer organizations, environment organizations etc., civil society in general, because of the diversity of their profiles have, as Dür & De Bièvre (2007) points out, diffuse benefits and costs in relation to competition policy. Their interests are punctual (graphically recorded as limited), and generally have limited resources and little ability to influence regulatory design. The European Consumers' Bureau (Bureau Européen des Unions de Consommateurs - BEUC) is based in Brussels and represents 41 national profile organizations from 31 European countries. BEUC monitors the decisions of the European institutions and has assumed as an important goal to protect the interests of European consumers. A second European consumer institution recognized as a dialogue partner of the European Commission is ANEC. This organization advocated for standardization by promoting the creation of technical standards for the implementations of European policies and regulations.

The European Commission carries out consultations in the field of consumer protection and their interests with national organizations and the two European-level organizations within the European Consumer Consultative Group – ECCG). This consultative group meets three times a year and represents a source of information. It offers consultancy for the Commission, promotes community actions and provides opinions (upon Commission's request or with its' agreement). The Commission shall appoint the members of the Group, one full member and one alternate member per Member State, based on three proposals made by the Group. Given the Commission's recent concerns, inside the Group functions two groups: one for energy and one for the Single Digital Market.

The main consultative body of the European Union institutions (Council, Commission, Parliament) is the European Economic and Social Committee (EESC). Since 1957 (Part Five "Institutions of the Community", Title I, Chapter III, art. 193-198, The Treaty of Rome) it is divided in a tripartite structure. The three groups include employers, employees, and other interest groups from civil society; the third category consists of organizations that protect the common interests of consumers, farmers' associations, environment associations, NGOs, representatives of economic, civic, professional and cultural field. The Committee is composed of 350 members in the present appointed by the EU Council based on nominations by each government of the Member States up to proportionate shares to the population of the given country, which have a renewable five-year term. The task of the Council, which meets annually in 9 (nine) plenary sessions is to provide opinions (for clarity, it is essential to underline the fact that they are not mandatory) to legislative proposals. Moreover, it also provides recommendations on topics considered to be newsworthy and important, being from a functional point of view a civil society consultation mechanism (including consultation of national and regional Economic and Social Councils), and opinions gathering, structuring and response mechanisms.

The three constituent groups are distinguished by various public positions on topics such as industrial policy, the competitiveness of European industry, European innovation and good practices, employees' rights, the development of alternative solutions such as collaborative economics, social innovation, SMEs access to credit.

Competition policy issues catches EESC's general interest, particularly when the Commission's Competition Policy Report is discussed. In the first round is discussed in groups, then is discussed in the EESC section entitled "The Single Market, Production and Consumption" (INT) and at the end is put to the plenary vote.

There have been plenary opinions, both requested and on their own initiative. They contain recommendations on State aid (more transparent allocation of resources and the implementation of ex-ante and ex-post assessment tools); merger control; the transition to an ethical European market based on the holistic concept of the economy of common good serving the citizens; the effects of digitalization on the service sector and industrial changes; supporting creative and cultural industries.

Regional authorities (local/regional governments) as Öner (2004) underlines, even if at the beginning they opposed the process of European integration (due to fear of

losing democratic control and the benefit of market principles), after the 1980s they started to accept and then support it (the integration being perceived as a new platform for affirmation of identity and extension of autonomy), and have turned into institutions supporting the growth of European Union law, the structural funds having a consistent contribution to this particular evolution. Although, they rather act on the implementation side of legislation than on the participation in the decision-making process.

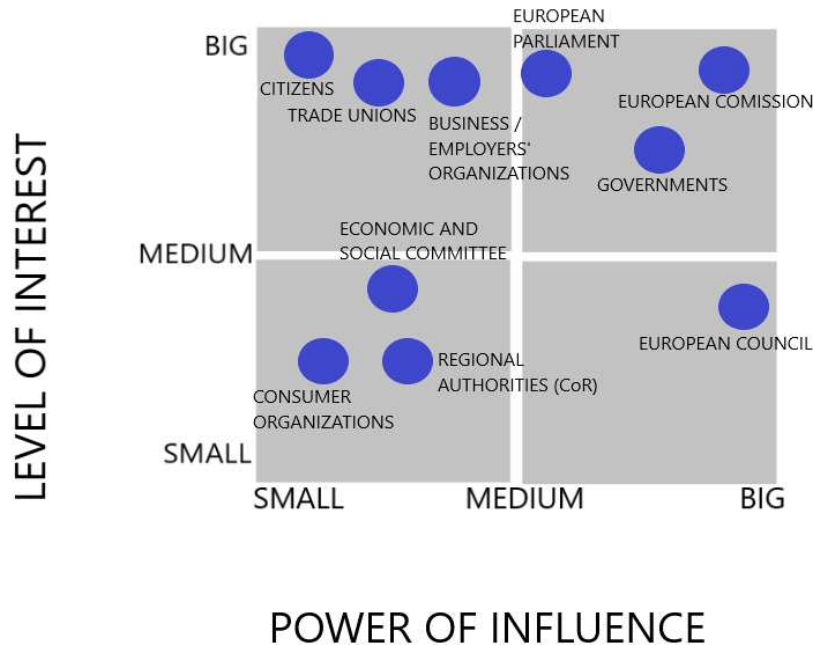


Figure 1. Stakeholders matrix (of interest groups)
Source: personal working and analysis process

The Committee of the Regions (CoR), created in 1994, according to the Treaty (art. 305 – 307 of TFEU) is the second consultative body alongside the Parliament, the Council, and the Commission. It is composed of maximum 350 members (appointed for a five-year term by the Council based on proposals made by Member States within the certain quotas limits depending on the number of population) that are local and regional elected representatives of the 28 Member States (e.g. local/county councillors, mayors, presidents of county councils, members of regional parliaments). Their role is to transmit the views of local/regional authorities in order to be included in the European decision-making process. The three European institutions mentioned above are obliged to consult the Committee of the Regions in areas such as economic and social cohesion, employment, health, educations, youth and culture, transport, energy, the environment and climate change, otherwise it can submit a complaint to the European Court of Justice. Just as EESC,

the Committee of the Regions can issue their own-initiative opinions. The CoR meets annually in 6 (six) plenary sessions in which it discusses and decides on the opinions prepared/adopted within the specialized committees. Competition policy and State aid are handled by the Committee on Economic Policy of the Committee (ECON), alongside industrial policy, economic and monetary policy, the internal market, economic governance and the European Semester, trade policy. Depending on the coordinates analysed above, in Figure 1 we can find the most relevant interest groups associated to the European common competition policy, positioned according to their vision of this policy, being scaled the interest and power of each to influence it.

3. Conclusions

Resources endowment of interest groups increases the possibility of this group to mobilize and then to carry out influencing activities on the policy, and the richer the organization is it has a more privileged access to European and national decision-makers (e.g. the European Commission, the governments of the Member States) (Dür and Mateo, 2012). This is also demonstrated by Klüver (2012), which emphasizes that information transmitted by a stakeholder group to the Commission is an important tool for influencing the political decision. And even interest groups do not have equal access to decision-makers, nor the same amount of influence power, the volume of information to which they have access and which they deliver to the Commission increases according to the group's resources endowment level. The Commission's proposal for an Interinstitutional Agreement to simplify legislation and ensure a better/efficient/transparent law-making process at EU level highlights the willingness to extend European models of governance, implying all levels ("shortening" the national-European inter-levels communication channels and the use of "direct lines" through the REFIT platform: the governments group for national government – the Commission, respectively, the Interest Groups for European citizen – European legislator). This proposal is made in order to extend the direct consultation of citizens and interest groups when drafting European legislation, including the use of online procedure, and the use tools to assess the impact of various policy measures on citizens and employees in particular, an ex-ante and ex-post policies assessment type.

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MANAGING CIVIL ORGANISATIONS: CIVIL MANAGEMENT MODEL

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Abstract: *The presence of civil organizations in modern societies has become commonplace. A well-functioning economy and society cannot be imagined without civil organizations. The role of non-governmental organisations has been appreciated over the past decades, as there are social and economic problems that neither the state nor the economic sector can do or undertake, which are taken over by the civil sphere. I examined the activities and management features of civil organizations (associations, foundations). Based on the results, it can be concluded that there exist management tasks in these types of organisations that do not appear in the activities of the managers operating in economic sector organisations. Moreover, these tasks appear to differ significantly from those of an economic organisation. These differences have been summarized in a civil management model.*

Keywords: *association; foundation; management tasks; activity; operation.*

JEL Classification: L39.

1. Introduction

The Civil Code, which came into force in 2011, clearly defines the scope of civil organisations operating in Hungary. The law states which organizations can be considered to be non-governmental organisations, and these are classified as either associations or foundations.

Accurate data on the number and operation of organisations is still lacking. There are several reasons for this. Official sources often provide different data. The Central Statistical Office (CSO) has been conducting various surveys since 1993, including non-profit organizations. Non-profit Organisations are a large category that includes non-profit business organizations as well as classic civil organisations. As a result, the HCSO can only provide approximate data on their number, activity, and aggregation with the non-profit sector. For this reason, it is still difficult to find statistics on civil organisations. While the publication of the civil law provided us however with an exact description of what we mean by civil organisations, statistics still do not apply them. Another source is the General Court since associations and foundations are required to register with a court of law. However, the areas of activity appearing on the court's website and the scope of activities in the CSO surveys are different, so comparability is not possible.

The CSO data for 2017 is the most recent for organizations, activities, and other statistical data. On the basis of these, it can be stated that there are still the most important NGOs (association, foundation) within the non-profit sector. Of the 61.1

thousand organizations, nearly 54,000 belong to this category (Statisztikai Tükör, 2019).

As every organisation needs to be registered with a court of law, it would be possible to find out exactly how many organizations are currently active via the Court's website. However, because statistical reporting is optional, one cannot rely on these records. In addition, the court's search engine is far from optimal, as it does not even allow their exact number to be determined.

Research on civil organisations has expanded in recent times. While studies were primarily concerned with their activities and social impacts, more and more disciplines are focussing on the subject of civil organisations. Nevertheless, it can be said that there are still a small number of empirical studies. It would be worthwhile to deal with the topic, because organisational activity is changing and from time to time there are tasks in society that would require a higher level of insight (e.g., the subject of migration).

Research on the management of civil organisations is also known in small numbers. There is no real literary data that can be used to compare knowledge with other organisational types. The available literature draws parallels between the management of civil and profit-oriented organisations, which is why books and descriptions for their organisational development and management are based on what can be used in business organisations.

From 2009, I have been dealing with the management of civil society organisations. My assumptions were that the nature of these organizations was different, their operational features greatly influenced management methods and management tasks. This assumption has also been confirmed, which makes it possible to set up a model that specifically describes the management of civil organisations. The model is based on test results for management tasks.

2. Management tasks

Over the past hundred years, the responsibilities of leaders have been defined differently by various authors. Basically, the current social approach of the age was determined in the first 50 years. After that, not only the social norms but also the results of the research carried out in different types of organizations had an impact on what management tasks came to the fore. A grouping summarizes the changes in management tasks over the past 100 years (Figure1).

In addition, management tasks can be further grouped according to different approaches. On the basis of research published by Bába and Berde (2010), management tasks can be divided into two groups: process and content tasks. Process tasks include those that are primarily related to organizational processes: information acquisition, communication, planning, decision, provision, organization. Content drop-outs are those that cannot be clearly placed in the logical order of the previous group. This is because they can be linked to multiple functions at the same time. These include motivation, formation of organizational culture, change management, quality management, organizational development, human resource management. These tasks are linked to the driving process by their content.

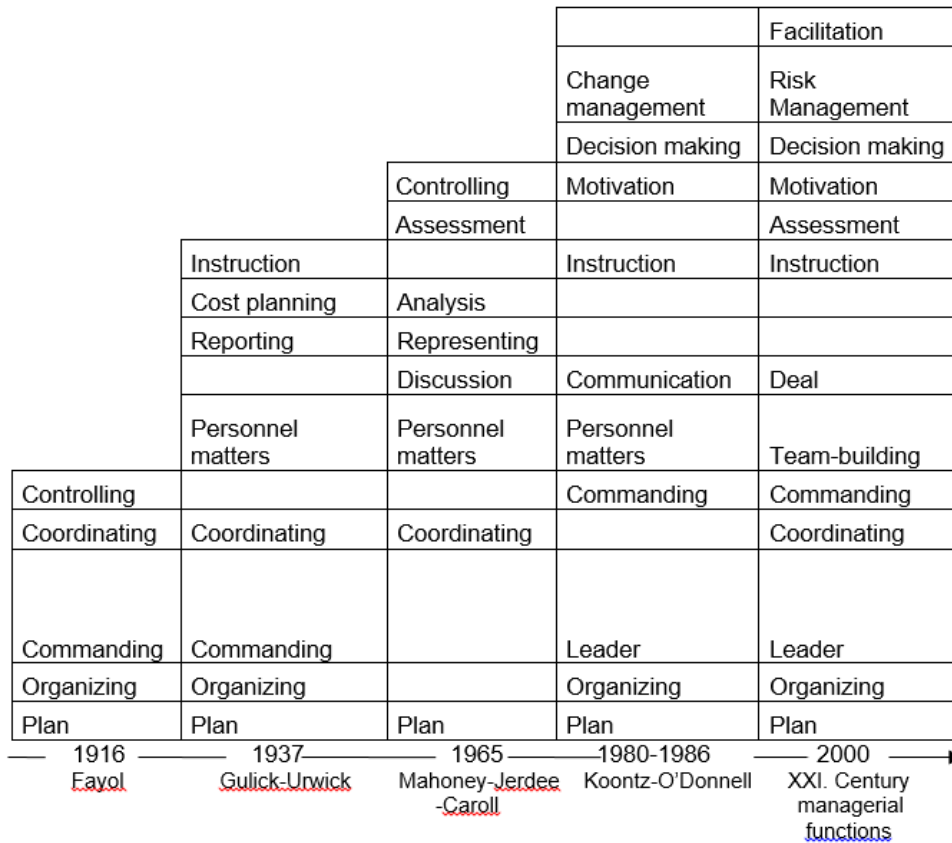


Figure1: The change in leadership functions
Source: Own construction following Very (2009)

In 1994, the University of Debrecen, Institute of Management and Organisational Sciences, created a specific leadership task grouping based on the work of Donnelly et al (1992) (Table1). Compared to its first release, its focus is now expanding, thanks to new research. Different driving task groups can be classified into four main categories.

In the original list, organizational forms and management tasks belonged to the main group of organization management: organisational development, organisational communication, information management, organisational culture, group management, change management, and organizational structure. In 2012, civil management was included. The human resources management main group includes all tasks related to HR (motivation, conflict, etc.). This group was expanded in 2007 by Equal Opportunities Human Resources Management, which deals with the management of people with disabilities from organizations and individuals themselves (Berde and Dajnoki, 2007). The 4EM area can be linked to several

human resource management or organization management topics (Dajnoki, 2012; Dajnoki, 2010). Management has also undergone significant changes over the past decade. Increasingly, emphasis needs to be placed on the right workforce, resulting in new HR functions (Wiwczaroski and Richter, 2017). These include i.e. knowledge, retention, generation, competence, talent, and diversity management, and including health care and HR branding. (Dajnoki and Héder, 2017).

Table1: Functional study of management

Organizational Management Studies	Process management Studies	Human Resource Management Studies	Education and labour market Surveys
1.1 Organisational forms and management tasks	2.1. Planning as a managerial activity	3.1. Motivation, encouragement	4.1. Employment of young graduates in Hungary
1.2 Organisational development	2.2. Decision making	3.2. Conflict management	4.2. Labour market consequences of the mass graduation of graduate education
1.3. Organisational communication	2.3. Decision execution	3.3. Human resource planning, organization	4.3 Problems of educational sorting theory and empirical testing
1.4. Information management	2.4. Organizing	3.4. Labour force selection	4.4 Internationalization of higher education
1.5. Organisational culture	2.5. Controlling	3.5. Competency tests	
1.6. Group management	2.6. Quality management	3.6. Performance reviews	
1.7. Leadership, structure, and hierarchy	2.7. Time management	3.7. Human resource development	
1.8. Change management	2.8. Security management	3.8. Career management	
1.9. Innovation management		3.9. 4EM – Chance of Equality Human Resource Management	
1.10. Leadership style and change management		3.10. Talent management	

Source: Berde, 2018

In addition to maintaining health, worker expectations and satisfaction are also important (Deutsch and Gergely, 2015 Szondi and Gergely, 2018). Knowledge sharing and management have been emphasized in large companies and multinational organizations, but the SME sector is also beginning to recognise the

importance of this (Juhász, 2015). However, SMEs have to follow other models (Gályász et al., 2017). Due to the changes caused by globalization and the recent wave of migration, both future, and current employees are highly affected (Dajnoki et al. 2017; Wiwczaroski and Richter, 2018).

While higher education institutions also require special management tasks and thinking, civil organizations, which are specific structures, call for another set of tasks and a different mindset altogether. The reason for this is that the management of public and private institutions is very different in terms of regulation and opportunities, and globalization has had a big impact on them (Kőmíves et al, 2018). Other specific organizations include sports organizations, primarily sports companies (Bácsné Bába, 2015). They are different in both financing and accounting activities, they have special features and therefore require a different management attitude (Bács and Bácsné Bába, 2014; Bács et al., 2015). They are different in both financing and accounting activities, they have special features and therefore require a different management attitude. Response to Change, Lead to Change (Ujhelyi and Filep, 2018), ethical leadership behaviour (Barriz, 2016) has been the central issue of leadership for decades.

3. Methods

I conducted my examinations in Hajdú-Bihar county between 2010 and 2013. I have determined the results that established the summery model to be presented later. I compared my own results with other problems and results defined by the literature. During my research, I analysed various management tasks among civil organisations. I conducted surveys among civil society leaders and asked their opinions about the importance of each management function. In this case, the leader is the person entitled to make a decision, i.e. in the case of an association, the unnamed representatives, as defined in the statutes, in the case of foundations, the person named in the charter, representative, chairman or other senior executive. The questionnaire, compiled in 2011, was tested during a trial recording, which was conducted between December 2011 and May 2012. Based on my experience, I recast the questionnaire, and with the final questionnaire, I completed the research between December and September of 2012. During my research, the range of organizations to be assessed was determined by representative sampling. The sampling was based on the County Court website and its database. This is explained by the fact that the most up-to-date information on NGOs is available on the website of the County Court. Regarding the categories of earnings of the General Court, organizations in the categories that are registered, modified by the notification and modified by the final decision can be considered active. However, the complete representativeness of the difficult-to-meet expectation of the organizations remaining in the base population after the necessary constraints provided a good basis for systematic sampling. I selected the organizations surveyed from organizations in the category listed on the County Court's website with K systematic sampling. This means that all k members are selected from the base population. In addition to the headlines, I also determined how to select the additional addresses so that if a

selected address is unavailable for some reason, it could be replaced so that the specified sample size could be reached in any case. During the 2012 survey, 1407 registered organizations were registered in the county registry on the base day (7 October 2012). All of this was 5th in the base population, which was 282. The others were placed in a group of possible additional titles (1126). A total of 282 questionnaires were prepared during the survey, which I carried out with the help of interviewers. In the sample, the form of operation was mostly associations. The breakdown by operating form shows that the sample was 69.5% (196) association and 30.5% (86) foundation. Regarding the distribution of civil organizations of Hajdú-Bihar County by operation form, it can be said that several associations operate as foundations.

The civil society organizations in the sample perform the most cultural activities (41.1%). One-third of them are sport leisure and hobby activities (37.8- 29.8%), their management and operation even show many differences and peculiarities within civil organizations (Szabados, 2015), 33.7% of them do education. About one-tenth of the organizations deal with health care and 14.2% with environmental protection. Those who nominated the other category in each case were called religious activities as an occupation. The data I obtained show a similar picture to that of the HCSO.

A large number of respondents are men with tertiary education, mainly in voluntary organizations. The proportion of the 40s, 50s in the sample is almost the same, but the 30s are not negligible. The examined managers are 70% over 40 years old. It can be inferred from this that some kind of life experience is required to undertake such an activity. Most managers have less than 10 years of professional experience, 75% of them work with less than 10 people. More than half of the respondents spend more than 20 hours on the affairs of the organization every week, around 40% of those who have less than 10 hours.

The definition of civil organisations is the basis of my main findings and model. There is no clear definition in the law or in literature on non-profit theories. The reason for this may be that the range of civil organisations is much narrower than the non-profit definition.

Based on the literature, my research results and my experience, the NGO is a non-profit organization that is usually set up on a citizens' initiative to solve a specific task and performs its activities within a formalized framework.

4. Results

Based on the results of my research, I set up a civil management model, which I will present in the table below (Table2). In the case of civil organisations, the basis of leadership and management tasks is clearly the activity of the organisation. Based on the results, I also consider the "sleeping" organisations to be a meaningful structure, which are not active, they are kept alive only by program. They represent their assumed duties by their mere existence. The availability of organizations can be used to distinguish between operating and "sleeping" organisations, that is, addresses/phone numbers in official databases are current. In addition, the measure of activity may be the operating costs of organisations. More than half of civil

organisations operate with an annual income of less than \$ 500,000. This low level of resources does not cover an organisation's annual operating costs or allows for extremely low activity. This statement is reinforced by the low level of conflict in organisations, the low level of staff, members and volunteers, and the difficulty of accessing the data.

Table2: Civil management model

organisational/management characteristics	civil characteristics	parameters
activity	operating (active) not operating (inactive/"sleep")	availability, operational costs level of conflict
organisational management	task principle	
motivation	self-inspiration, psychological encouragement	manager/volunteer member/employee
communication	group communication tools informal communication	towards the external environment in organisation
plan	short-term	within a year action campaign
decision making	problem detection empirical internal values internal organizational interests compliance with external requirements	attachment to the organisation manager received grants
organizing	goal rational	task implementation efficiency
conflict	low	activity commitment

Source: Own construction, 2019

The second element of the model is a factor determined by grouping the management tasks of the organisations. According to the opinion of the respondents, the tasks related to the management of the organization are the most important ones. It can be concluded from this that primarily the realization of tasks is an important human resource management function not related to the participants.

In the case of motivation, I base the examination of two different factors on the characteristics and parameters of the model. One of the reasons why we take part in an organization's activity, why do we take a "civil role"? In the case of managers and volunteers, based on the examination of their own motivation, it can be stated that they are driven primarily by internal motivation. Commitment and altruism play a role in engaging in civic work as a second tertiary activity, providing a livelihood. In the case of employees and members working in the organisation, the psychological

incentives are clearly outstanding, according to the respondents. These are supposed to be associated with participation in the internal urge.

Communication and organizational communication can also be outlined on two sides. Group communication tools are primarily used for the outside world. The most important are events, exhibitions, conferences. While in the case of internal communication, communication is primarily informal. Discussions and meetings are not often used.

It can be said that planning related to the activities of the organisation is short-term, as they always focus on their actual, current actions. There are no long-term vision, primarily social goals and financial conditions have a prominent role.

The decision is of paramount importance for the management tasks. In decision-making, problem-finding depends on the person in charge. Accordingly, one's own intrinsic values, and the organisational values that these define will lay the foundations for problem perception. Clearly, the leader is the central person on this topic. In addition, the constraints on compliance with external factors play an important role in decision-making. Organisational tasks related to the activity, in accordance with the planning and the organisational management of the task is goal rational. The most important thing is to ensure coordination, financial conditions and personal conditions. The goal is to realize the specific tasks that the organisation itself or the "consumer" expect to take on the activity of civil organisations.

The amount of conflict and its frequency is low. This can be related to several factors. One of these is the activity of organisations. However, the implementation of tasks involves interactions in each type of organisation, and interactions generate conflicts. Thus, low levels of conflict can also refer to low activity. What is clear, however, is that if an organisation is not active, then there can be no conflict. Accordingly, project-like activities do not necessarily generate conflicts. In addition, the level of conflict is low for organizations operating within the normal framework. The explanation for this is that the participants participate in the operation from their own commitment and emotional attachment to the activity of the organisation. Because of this, the goal, values, beliefs are common, so conflicts can develop less easily.

5. In conclusion

Emphasizing the model's factors, it can be said that civil management, as a new management area, has specific features. These can be formulated as follows:

- strong internal motivation of the members of the organisation
- effectiveness of psychological motivation
- the appreciation of informal communication
- short term planning
- external influence of decisions
- value-based, empirical decision-making
- task-centered organization
- conflicts are primarily value-based and information-based.

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DECISION MAKING FACTORS IN PURCHASING THE ANALGESICS BRANDS ON ROMANIAN PHARMACEUTICAL MARKET

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Abstract: *Nowadays promotional activities play a very important role, especially in pharmaceutical sector. This statement is supported by the huge amount of marketing expenses of the top pharmaceutical companies (Olson, 2015). We were interested to investigate the way people choose the analgesic brand and to identify how powerful are advertising features, recommendations or previous experience in the decision making process. Taking into consideration that on the Romanian market are available a limited number of notorious brands and many local brands, we wanted to investigate the attributes of brands and products taking into account in the purchase decision of the pharmaceutical industry. This is a quantitative research of the romanian consumer. We used four focus groups as a research tehnique. The findings reveal that among the most important product features are the quality of the product which is reflected through its quick action (releasing the pain) and no side effects. Because of the fact that most of the analgesics are over the counter drugs (OTC) and they can be bought without prescription, the pharmacists' recommendation represent one of the key factor in choosing a brand, among previous positive experience and promotional strategies. A good brand is according to the respondents, one which is well promoted on the television. Therefore, the consumer is attracted to powerful brands, effective products and the pharmacist's recommendation may play an important role because of his authoruty in the field. Powerful brands are those that can afford to promote effectively and those that are notorious or very well known in the local market.*

Keywords: *promotional activity; decision making; analgesics; brand notoriety.*

JEL Classification: *M31; M37; M38.*

1. Introduction

In this paper, we were interested to explore consumer's opinion regarding promotional activity, to identify the main elements taken into account in the decision making process of an analgesic brand. Also, our interest was to determine what type of promotional message has a greater impact on the purchase decision. Based on the research aim, further investigations and research should complete the whole picture regarding the consumer's perception of analgesic brands.

The key argument of researching how and why customers choose a specific analgesic brand is that big companies allocate huge budgets in order to promote their products, in most cases, greater than the research-development budget. Our curiosity is to investigate how marketing activities interfere with the customer's choice, what are they looking for when choosing a brand and what marketing tools have a higher impact on their purchase decision. The hypotheses are that people are more sensitive to pharmacists' recommendations than other sources such as friends or relatives and this is in most cases the key factor in their brand decision; due to previous research, another hypothesis is that consumers trust a pharmaceutical brand mainly because of their previous positive experience Donohue et al. (2009).

A study of OZONE Foundation shows that 73% of the Romanians use self-medication, from which 22% use it once a month, most of them are women, half of them consider that they have the capability to do that and one of seven parents treats their baby without consulting a physician (Senciuc, 2012). The relevance of self-medication in pharmaceutical regulation is that on the one hand, intense promotion of drugs increases the demand and therefore, self-medication. On the other hand, significant differences are noticed between different people with degrees of education: the more educated people are, the less they use self-medication. In a global perspective, differences of education are common in almost every country and this is another reason why laws, regulations and codes of ethics or guidelines should be powerful instruments to secure the citizens. Another aspect taken into account by the consumer is the medical condition (problem): the consumer is predisposed to self-medicate only if he perceives the condition as a serious one, it is likely to go to a specialist.

Marketing activities are condemned in pharmaceutical market by many actors because of the fact that health is so important that should not be influenced by promotional activities. Taking into account ethical considerations in marketing activities, (Lege5.ro, 2015) shows the fact that on the Romanian market, promotional activities of the prescription drugs are forbidden. Also, it is forbidden any deceiving information regarding drugs, or any affirmation which can not be proved scientifically.

Communication, which includes marketing activities, is defined as the two-way process of reaching mutual understanding, in which participants not only exchange (encode and decode) information, news, ideas and feelings but also create and share meaning (Business dictionary, n.d.). This model in the pharmaceutical industry pictures the main actors: the sender may be the drug manufacturer, state, pharmaceutical wholesalers, physicians, pharmacists or other organisations, while the public who receive the message is made of patients, competitors, pharmaceutical wholesalers, physicians, pharmacists and other organisations. The message may include: drug properties and what makes it different from the others, side effects, dosage, application, to whom it is addressed and the media (means of communication) may be oral, virtual, personal and non-personal. Although marketing is part of the communication, these two concepts are separated by their aim: marketing activities are only those activities which are meant to promote something

(products, brands, ideas, services, organisations etc.) in order to obtain economic benefits.

The marketing mix appeared in 1964 due to Neil Borden, who was inspired by James Cullinton. They have discovered many elements of the marketing mix and succeeded to organize them in a coherent form, where each element has many sub-elements (Stanciu, 2002). The elements of the marketing mix are: product, promotional activities, prices and placement or distribution (Waterschoot and Van den Bulte, 1992). There is a promotional submix, which has specific elements such as: sales promotion, advertising, public relations, events and experiences, direct marketing and personal selling (Kotler et al., 2009). Nowadays, advertising means television commercials, brochures, banners and even commercials available on the internet. This method is an effective and expensive way to promote the product because it reaches to numerous people.

Another important element is sales promotion which has the role to push the products to consumer through special offers, price reduction, free products, merchandising, gifts etc. These techniques are used in order to increase sales which can be done in two ways: intensively by increasing the amount of the products bought or extensively, increasing the number of the clients due to promotional tools used. In the promotional activity of pharmaceuticals, there are many regulations which limit advertising over the counter drugs (OTC) to consumers and it is forbidden to advert prescription drugs (Rx) to patients.

Personal selling is part of the promotional submix and it implies that the pharmacist recommends a specific product to the customer. Taking into consideration that Romanians often go to the pharmacist before consulting a specialist such as a physician, the customers can be very quickly persuaded by the pharmacists advice because he is perceived as the specialist (Pilarczyk, 2011). Another instrument of promotion is rewarding prescriptors and people who have the power to increase demand. In communications, the source must be powerful, attractive and credible in order to get to the receptor (Popescu, 2003) because nowadays each person is daily in contact with 3000 up to 5000 promotional messages. In pharmaceutical industry powerful drug manufacturers are trying to persuade physicians, who have these characteristics, to recommend their products intensively, although global ethics limit very much such activities to little amount of money spent.

Beside promotional activities of the marketing submix, marketing is also about product, pricing and distribution techniques and these four elements represent the marketing mix, known as the 4Ps (product, price, placement and promotion). Using an integrated marketing communication system, a company can increase the brand equity. American Marketing Association (2017) defines brand equity being the value of a brand and it is based on consumer attitudes about positive brand attributes and favorable consequences of brand use. The term has evolved since 1960 when it was associated with a logo to a legal instrument meant to protect a brand capital through a trademark. Another association of brand is a shorthand which implies that in general, consumers who have limited time in order to decide what to buy, tend to buy from companies they know (Chevan, 1992). On the other hand, a well known brand may be perceived as something safer because knowing the company, their

values, the price-quality ratio, you have a psychic comfort. According to Kapferer (2004) cited in Maurya and Mishra (2012) perceived risk could be economic (linked to price); functional (linked to performance); psychological (linked to our self-concept); social (linked to our social image) and experiential. All these risks tend to diminish when it comes to well-known (trustful) brands.

Inevitable, a brand is correlated also with the attributes of positioning. Positioning refers to the place of your company in the consumer's mind or the perception of the public regarding the characteristics of your brand. These associations may refer to price, quality, name, packing, emotions, personalities who promote the brand, values, campaigns, previous experiences, places etc. Positioning in strategic marketing is the third step after segmentation of the market and targeting specific segments from the marketing to whom you will address.

The brand value of a pharmaceutical company initially came matter in order to inform people about the company's existence and about its products, therefore to increase awareness. Now, there are many companies who use the same active substances so each of them must differentiate from another in order to attract consumers. Branding pharmaceuticals is about expressing value, about expressing something else about the product that is valuable to either the patient, physician, or any relevant audience (Seget, 2006).

2. Research Methodology

We used the focus group method in this research in order to investigate the main factors taken into consideration by the consumer of the analgesic drugs. Four focus group sessions were conducted and recorded in Bucharest, Romania, in 2018. From a total of 24 participants, 75% were women and 25% were men. Their age varies between 20 and 65 years old and all of them were high school graduates or above.

The aim of this paper is to determine which are the key elements in decision making process of analgesics' purchasing. Other research objectives are: defining a successful analgesic brand, exploring the consumers' perception of advertising analgesic drugs and identifying the main elements of a persuasive advertising. We took into consideration various factors discovered in previous research such as advertising techniques, brand reputation and notoriety and recommendations. Further quantitative investigations are needed in order to measure the influence of each factor.

Based on previous research, the hypotheses of this study are:

1. The consumer is influenced by factors such as: recommendations, brand notoriety, advertisements.
2. The main element that influences the purchase decision of an analgesic is the pharmacist.
3. The consumer wants a qualitative product which means that the drug should have the promised effect.
4. A successful brand is well promoted.
5. The trust in a brand is proportional with previous positive experience.

3. Findings

The focus group recordings were transcribed, collected data was organized, synthesized and compared. The most important results were selected and are presented below.

Analysing nonverbal and paraverbal signs in communicating with the respondents, we observed that while they were talking about promotional activities of analgesics, some of the respondents' attitude was rather angry. Some of them even declared that they are annoyed by the great amount of drug commercials. On the other hand, they recognized the value of promotional activities and some of them agreed with the fact that a promoted brand gain costumers' confidence and it is probable to buy it because it is about their health. Other participants were completely against the promotional activities and stated that the more advertisements of a drug brand they see, the less are the chances to buy it.

3.1. Elements that influence the purchase of a specific brand

Most of the respondents were at first confused by this question and they have mentioned almost all the elements that may influence one's decision: previous experience, physician's recommendations, pharmacist's recommendations, family, friends, promotional activities. During the discussions, they had the time and the opportunity to prioritize the most influential elements.

Some of the participants stated that they use a brand because of *previous positive experience*. Also, they explained that they were taught by parents to take a specific brand and they prefer it because it successfully takes away the pain. In the same situation were respondents who are used with a substance such as Ibuprofen and they know it works. On the other hand, one of the participants said that Bayer was years ago, one of the greatest drug manufacturers, therefore, a long period of time she used their products. Recently, she discovered that Romanian products (Paracetamol) are better because they protect the stomach, unlike Bayer's Paracetamol.

A discussion regarding the trust in some of the most important influential factors emerged: two respondents from different focus groups said that they don't have the time to go to a physician for each of the health problems, therefore they ask the *pharmacist's recommendation*. The reaction of the other participants was negative towards pharmacists' intention: some of them stated that pharmacists will recommend you only the most expensive products because "They don't care about your health. They have a target to reach, therefore their recommendations are the least trustworthy". Some of them mentioned the *physician*, but another respondent said that even physicians are controversial and it is possible to have the same attitude towards patients, such as pharmacists "in order to get a free trip". Other participants said that only the physician has the power to tell you if there are side effects of substances that may put you in danger and he knows if you are allergic to a substance. Therefore, they trust the physician. One of the respondents said he believes both points of view, but physicians can present you more brands.

One of the respondents said he prefers *a well known brand which is promoted* on television because he doesn't have time to go to a physician nor the trust a pharmacist. Two respondents stated that *friends* are a trustful source of information because they are not interested to manipulate you like a pharmacist and also, they may have some experience using those products.

An important idea emerged is that they feel that promoted brands are in the spotlight, while the brands that are not promoted are fading. One of the respondents was very categorical and stated that every time he sees a commercial, he feels he is sent to buy that drug even if he doesn't need it.

3.2. The most important characteristics of the analgesics are: quick action and no side effects

"Certainly, to take away the pain as quickly as they say" was the response of the majority of the respondents. Some of them exemplified that there are cases when the pain does not disappear after 20 minutes or the time the manufacturer ensures it should have an effect. "The promoted effects do not exist. You can realize this after 2 hours of waiting to diminish the pain while on the prospect they say it should disappear after 5 minutes [...] and in most cases the pill is not the reason for the pain relief". Two respondents said that since they realized that these drugs don't have the promoted effect, they do not buy them anymore. The releasing pain time is perceived as a qualitative characteristic of a product which enhance the satisfaction of the customer.

Some of the respondents were very interested in the side effects and one of them was annoyed by the fact that "from those 30 seconds of advertisement, at most 10 are those in which a voice tells you in a quicker and offending manner that in order to see the side effects, you have to read the prospect or to ask for advice of a physician or a pharmacist". Other characteristics are: a low price, good taste, to avoid addictive substances, "as natural substances as they can", not to raise blood tension. Some of the respondents said that psychically is very convenient to have some pills bought just in case of a migrene or other type of pain. Also, they would recommend or even give to friends and known people the pills they use in order to take them if needed, if they are satisfied by with the quality of the product.

3.3. What is a successful brand?

"A good medicine that is adequately promoted"; "They really know how to promote their products"; "even when you go to the pharmacist or the physician, they will recommend you those brands". Most of the participants said that a powerful drug brand is *intensively promoted and recommended*. The respondents noticed that the red circle representing the pain moving in different parts of the body before taking the drug is the main way to express in advertising. And even if it is very common, the impact on the desire to buy that product is positively influenced.

Other element considered is the *history*: "I think Nurofen was one of the first foreign drugs entered on the Romanian market". Another respondent said that "old analgesics got to be known by most of the people and it doesn't matter if the manufacturer in romanian or not. People are now aware of their existence and they

have made a set of drugs used that can hardly be changed by anything new". The same person said "Aspirina and Paracetamol are universal drugs and can't be overwhelmed by anything new".

Also, analyzing why Nurofen is one of the most successful brands of analgesics a respondent said that it is because they have *different products for different types of pain*: "I think it was very important to see that there are multiple products which target a specific pain such as headache, shoulder pain, back pain, which acts in 5 minutes, in 10 minutes, made of jelly or syrup and you can choose whatever you want".

Another characteristic is the *brand name*. One of the participants said "there are some catchy brand names that make you think of an analgesic or of a specific substance: for instance, Nurofen makes you think of Ibuprofen (the active substance), Algocalmin makes you think that it has a calming effect or that Antineuralgic fights against neuralgias". A drug remembered by some participants was Advil which has the same substance as Nurofen, but the name is not so "catchy" compared to the market leader.

Moving forward to trustful brands, respondents discussed about the purchase decision between a cheap unknown drug brand and a powerful brand which have the same substance: "between a cheap no-name and Nurofen, I trust more Nurofen because I don't know...it is about promotional activities"; "some pharmacists recommend unknown brands because they use the same substance, but people don't want to buy them and ask for something better....you can't make experiments on your body"; "if the brand is always recommended it is clear in my mind that it is a good product". On the other hand, there were two participants who said that they use to buy new brands in order to test their action.

4. Conclusions

The findings of this paper represent the first step in researching this topic and may be of interest to consumers, pharmaceutical companies, marketers and also to institutions which are supervising the regulations. Further research should be considered on this topic in order to establish adequate ways of promoting pharmaceutical brands. The research limitations of this study are: the limited budget available, the reduced period of time and the fact that the researchers were conducting the focus groups, although it is recommended to involve a different person than the researchers to be the moderator of the discussions .

This study confirms the hypothesis that the consumer is influenced by factors such as: recommendations, brand notoriety, advertisements. There are also some of the hypothesis that were not confirmed by this piece of research: the main element that influence the purchase decision of an analgesic is not the pharmacist, but the previous positive experience. This means that consumers may take the risk to become immune to a substance if they use it intensively and during a long period of time. This also means that they may be skeptical about the pharmacists' recommendations. Another hypothesis that was not confirmed is that trust in a brand comes with previous experience. Respondents said that historical background has a greater influence on their choice because they are used to some brands (traditional

brands). On the other hand, there were respondents who said that they may test new brands. In order to get more information about this topic, we believe that further quantitative research is needed.

Other findings suggest that advertised analgesics have a positive impact over the consumer's perception, influencing trust in the brand, but there are too many drugs' commercials. The key factor in influencing the trust in an analgesic brand may be the historical background of the manufacturer. Regarding the product, the findings suggest that the most important characteristics of the analgesics are quick action and no side effects. The perfect analgesic is the one that targets the pain, but it is far more important to feel a quick relief of the pain and to have as few side effects as possible. Also, a successful brand is intensively promoted and recommended.

In the pharmaceutical sector another problem is that many clinical trials were bought or counterfieted and the side effects were not known until the drug entered on the market. This strategy is not just unethical, but also illegal and unfortunately, it is not eradicated. Therefore, we believe that the manufacturer should be punished severely if such fraud is proved.

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PAST, PRESENT AND FUTURES OF DISTRICT HEAT SUPPLIERS, WITH SPECIAL REGARD TO HUNGARIAN DISTRICT HEAT SUPPLIERS - LITERATURE REVIEW

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Abstract: *In recent years, many researchers displayed interest in the different types of social innovations. In the current research, the author does not aim at creating a new definition, but at examining the possibilities to generate social innovations in the case of district heat suppliers by accepting the previously created definitions. In the case of district heat suppliers, three levels of social innovations can be distinguished and the current research aims at presenting how they have been realized worldwide for almost 140 years. Its methodology includes bibliography research based on seconder research methods and its result is a summary which helps make the heat supplier systems of different generations from the 19th-21st centuries transparent. The purpose of the present study is to examine the changes in the district heating systems of the world by examining international literature with the methods of literature review. District heating systems are grouped based on the following aspects: the role of heating systems in the given country, price level / price regulation, the technical and technological characteristics of heating systems and the share of renewable energy sources. The study emphasizes several times the related current conditions and characteristics in Hungary. The results of this literature review prove to be an important tool for the author's further research.*

Keywords: *District heat supply; District heat producers; District heat suppliers; technological and ecological environment; social innovation.*

JEL Classification: *K32.*

1. Introduction

The roots and the first forms of central heating can be found in the ancient times. Karner (2003), however, points out that, contrary to the general belief that district heating could be linked to the Romans, this way of heating was known also in the capital city of Mesopotamia and similar procedures to central heating were used in ancient China as well. In ancient times and in the Middle Ages, many inventions came to be used independently by many different peoples and groups at almost the same time, so central heating is likely to be similar. In the Roman Empire, the ancestor of the today underfloor heating was used to ensure the temperature of the baths, but similar technical implementations were used to supply other buildings as well. In 13 BC Pallio Vitrovius, Roman architect, presented the heating system of the imperial palace.

Like many ancient discoveries, central heating was forgotten or played a minor role in the Middle Ages. However, some records from the 15th century mention the district heating of baths. Subsequently, the technical development of the industrial revolution provided the opportunity for this type of heating to spread.

In the 1790s, waste heat from English factories was transported via underground pipelines to heat public baths and since the middle of the 19th century "apartments heated from long distance" has been spread in several European (London, Paris, Hamburg, Dresden) and American (New York, Boston) cities.

"Social innovation provides new or original solutions to solve the problems of a community with the aim of improving its well-being" (Kocziszky, Veresné and Balaton, 2017). Through reaching the goals to improve the quality of life, heat suppliers implement social innovations by their products (heat and hot water supply), by the applied technologies and by implementing them in consumer-friendly services (Süveges, 2019). It was, however, realized in different ways during the centuries. The current study aims at describing the heating generations of the 19th-21st centuries by analyzing the international literature. The basis of the comparison as the possibilities to generate social innovations are the technical and technological characteristics of district heating.

2. Literature review

Based on the examination of the international literature, I classified the heat supply systems operating in different countries according to the following criteria:

- 1) Main reasons and historical roots of the development of heat supply
- 2) Prices of district heating
- 3) Generations of heating systems and their technical and technological characteristics
- 4) Proportion of renewable energy sources in the total heat supply capacity.

2.1. Main reasons and historical roots of the development of heat supply

Kádárné (2010) explained that in different parts of the world, district heating systems had developed from different motivations and with different technical and technological conditions. The Association of Hungarian District Heat Suppliers classifies the systems of European countries into four groups:

- 1) Northern Europe: Sweden, Finland, Denmark and Iceland, where the role of this heating method is constantly appreciated for its positive effects on the protection of the environment and climate. In these countries, it is also an important instrument of the energy policy and it is continuously improved. Accordingly, the proportion of district heating in apartment heating is extremely high. In Denmark, it is over 60% and up to 98% in some major cities. Denmark is considered to be a model country from several aspects due to the leading-edge technologies (Vanhoudt, Oevelen and Johanson, 2019; Nielsen, 2019) and to the high utilization rate of geothermal energy (Margaryan, Dyrelund and Hansen, 2019).

- 2) Austria and Germany, where gas and district heat suppliers are organized into holding companies owned by local municipalities and the development of heat suppliers is an integral part of urban environmental programs (Kádárné, 2010). The proportion of heat supply out of heating systems is much lower in this group than in the previous one.
- 3) The proportion of district heat in the group including France, Italy, the United Kingdom and certain parts of the Netherlands is low (5%) and there is no great tradition of this heating method. However, the governmental energy strategies of these countries also include district heating projects with low carbon dioxide emission, both for the general public and for other users (Webb and Bush, 2019). In the case of Italy, the use of water with lower temperatures can be observed in the heat supply (Kádárné, 2010), which is considered by many to be a significant way of future development of district heating (Jensen, 2019). The initial low share of district heating, of course, has the advantage of providing opportunity to increase the role of renewable energy sources. In France, for example, the share of this energy source has doubled in five years and is expected to increase to five times compared to its 2013 value by 2030 (Perrin, 2018). Especially in the northern and eastern metropolitan areas of the country, an increase in utilization is expected with the use of further synergies (Boysen, 2018). Ireland has similar conditions, where there is no historical tradition of large-scale district heating, the rate is only 1% like in much warmer countries in Europe like Greece, Cyprus and Malta, however, more and more countries consider district heating to be an opportunity to meet their energy policy and environmental goals (Gartland, 2018).
- 4) Newly acceded Member States of the European Union, all of which have experienced "a period of rapid and forced industrialization" (Kádárné, 2010, p.23). As these countries have a district heat ratio exceeding the EU-15 average, they are often of lower quality in technical implementation (like thermal insulation) and in technology due to the historical aspects of their construction and have considerable potential for development.

In the European Union, on average, district heating accounts for about 10% of heating, similarly to the world average, but significant differences can be observed among countries (Werner, 2016).

2.2. Classification based on the prices of heat supply

There are other options of grouping in addition to the above described one. One such research material of relevance, also conducted by Werner (2016) and being part of the research on the future role of district heating, compared the price levels of European heat suppliers and created the following groups based on prices:

- 1) Countries with high price: Denmark, Slovakia, Germany, Norway and Sweden,
- 2) Countries with low price: Iceland , Bulgaria, Switzerland, Poland and Hungary,

- 3) Countries with high district heating prices compared to the disposable income: Slovakia, Estonia, Latvia, Lithuania. (Interestingly, Hungarian district heating is generally associated with high prices in the mind of the individuals (Németh, 2008), but this statement cannot be justified either in absolute or relative terms based on the research results.)

In their study, Kácsor, Kerekes and Mezősi (2019) grouped European heat supply systems according to the type of district heating system in the country. Based on their summary research, two groups can be distinguished:

1. In most Western European countries, “there is no explicit price regulation system, any abuse of a dominant position is detected or sanctioned by the competition authorities through ex-post procedures... .. the pricing model used here leave it to the competition among heating modes and competition for consumers to determine district heating prices and district heat suppliers may not use their position improperly”(Kácsor, Kerekes and Mezősi, 2019 p. 8)

2. “Ex-ante price regulation” by regulators responsible for regulating and supervising energy markets is common in Eastern European countries (Kácsor, Kerekes and Mezősi, 2019, p. 9).

District heating used in Hungary can be classified into the price regulation systems of the Eastern European countries based on the procedures applied by the regulatory system. This is well illustrated by several events like the 2011 Freezing of Service fees. The Act XXIX of 2011 on the Amendment of the Energy Related Laws Frose on Retail Prices and Prices of Institutions Treated Separately as of March 31, 2011. It is the Minister of National Development who is responsible for setting prices of heat sold to the public and to institutions treated separately as the highest official price. Also included in 2012 are the Transformation of the energy support system and in 2013 the Utility price cuts. As a result of the price cuts in district heating, the total savings of 20% were realized by consumers on the whole in more stages.

At this moment, the Hungarian district heating regulation consists of three parts, which are as follows:

- 1) Prices for residential district heat services
- 2) Prices applied by heat suppliers
- 3) Subsidies for district heat suppliers

2.3. Generations of heating systems and their technical and technological characteristics

One of the most frequently mentioned elements in the international literature analyzing district heating is the generation-by-generation comparison of heating systems (Lygnerud, 2019). Several researchers have dealt with this topic, among which the study by Lund, Werner, Wiltshire, Svendsen Thorsen, Hvelplund and Matthiesen (2014) is outstanding. Its main assumption is that district heating and cooling systems will play a major role in the sustainable energy systems in the future, by reaching up to 100% renewable rate. In order to achieve this, however, significant improvements are needed compared to the current situation. The different generations have been characterized by a number of aspects which can be grouped into three groups. The main findings of their study are summarized in the Table 1. In

both the United States and European countries, first generation heating systems were based on similar technology, characterized by technically inefficient operation and high network losses. The heat-conveying of the second generation systems was water at temperature of 100°C at high pressure and all systems built from the 1930s used this technology until the 1970s. This was typical of the heating systems of the countries of the Soviet bloc. Construction was characterized by low quality and there was no possibility / need to regulate or change the amount of heat used.

Table 1: Generations of heating systems and their technical and technological characteristics

Evaluation criteria	Generations of heating systems			
	First generation	Second generation	Third generation	Fourth generation
Period	1880-1930	1930-1980	1980-2020	2020-2050
Heat-conveying	Steam	Mostly pressurized hot water (above 100°C)	Mostly pressurized hot water (below 100 °C)	Low temperature water (30-70°C)
Serviced buildings, needs	Blocks of flats and the buildings of the tertiary sector in cities	Blocks of flats and the buildings of the tertiary sector, typical size is 200-300 kWh/m ²	Blocks of flats and the buildings of the tertiary sector and detached homes, typical size is 200-300 kWh/m ²	Existing buildings with lower heat demand (50-150 kWh/m ²) and small scale (<25 kWh/m ²) new users
Heating in the apartments	Radiators using high temperature water (90°C) or steam	Radiators using high temperature water (90°C)	Radiators using medium temperature water (70° C) and underfloor heating	Radiators using low temperature water (50° C) and underfloor heating
Basis of thermal energy	Carbon	Oil, natural gas	Natural gas, biomass, renewable energy sources	Renewable energy sources

Source: Own compilation based on Lund, Werner, Wiltshire, Svendsen Thorsen, Hvelplund and Matthiesen (2014)

Third-generation heating systems including solutions from the late '70s and early '80s are often referred to as "Scandinavian district heating technology" because many of the components used in district heating have been manufactured in the Nordic countries. These systems and technical solutions are used in the former Soviet Union Member States and in Central and Eastern Europe, but the systems

currently being built in China, Korea, USA and Canada also belong to this generation.

Besides technical and technological basis, the authors also reviewed motivation factors that are summarized below.

Table 2: Generations of heating systems and motivation factors

Evaluation criteria	Generations of heating systems			
	First generation	Second generation	Third generation	Fourth generation
Period	1880-1930	1930-1980	1980-2020	2020-2050
Primary motivation of the society and the consumers	Convenience and risk reduction	Fuel reduction, lower costs	Security of supply	Recognition of the role of district heat supply in the fossil energy carriers freedom
Justification and aim of the investments and their motivation from decision making side	Minimizing the subsistence costs per consumers	Advantages of cost reduction derived from cogeneration	Taking into account reduced payback time	Choosing projects with longer payback time

Source: own compilation based on Lund, Werner, Wiltshire, Svendsen Thorsen, Hvelplund and Matthiesen (2014)

The development of the first generation heating systems from the consumers' point of view was mainly motivated by comfort and safety factors and the aim was to replace the individual heating systems and boilers in the private homes, which were then able to produce hot water in a less safer way and they often exploded. The second-generation systems were motivated by social reasons that differed from country to country, but in general the main goal was to reduce the level of resources used and increase comfort. The motivation factors of the currently used third generation systems are not different from the previous generations on the substance, with the addition of the increasing presence of renewable energy sources for environmental reasons (Lund, Werner, Wiltshire, Svendsen Thorsen, Hvelplund and Matthiesen, 2014).

Currently, the vast majority of district heating companies in the world, including Hungary, belong to the third generation systems. The authors argue that the same applies for district cooling systems, that is, the technologies and motivations appropriate to the third generation are in use and valid here.

Of course, it should be added that district cooling does not have such a history than heating. It first appeared in the literature in the '90s. In the case of district cooling, the United States played a pioneering role, where there were 1,000 such systems in

operation three decades ago. Japan is also outstanding and district cooling has an increasing appearance also in European countries (Karner, 2003).

Not surprisingly, the Danish have already made specific steps towards the fourth generation, with the redesign of the existing 90°C system in a suburb of Copenhagen, where the introduction of a low-temperature system of 50-55°C was decided in the case of 1,500 households (Hog and Moos, 2018). This will not be the first such system for newly built homes where district heating systems were developed based on the fourth generation approach (Horsen, Gudmundsson, Hansen, 2016). Technically and technologically, the aim is to reach the fourth level when the systems built on renewable energy base operating with high efficiency and low losses contribute significantly to the achievement of environmental objectives. The success of the new generation is based on the change in the motivation and decision-making system of consumers and service providers and producers and the shift towards long-term, environmentally sustainable solutions.

In the case of fourth generation district heating, I accept the authors' definition that the 4th Generation District Heating (4GDH) system is consequently defined as a coherent technological and institutional concept, which by means of smart thermal grids assists the appropriate development of sustainable energy systems. 4GDH systems provide the heat supply of low-energy buildings with low grid losses in a way in which the use of low-temperature heat sources is integrated with the operation of smart energy systems. The concept involves the development of an institutional and organizational framework to facilitate suitable cost and motivation structures. (Lund, Werner, Wiltshire, Svendsen Thorsen, Hvelplund & Matthiesen, 2014, p. 10). I think that grouping the heating systems by generations, in addition to describing the current situation, also sets the future by describing development and motivation perspectives. The timeliness of the paper has been confirmed, as due to the changes in the Earth's climate and in order to prevent further problems, heat suppliers play an important role therefore the situational picture of the companies operating in Hungary provides the basis for further development opportunities.

2.4. Proportion of renewable energy sources in the total heat supply capacity

Although all countries have third generation heating systems, it does not imply that the countries are on the same level on the path toward fourth generation systems. This is illustrated in Figure 1, showing the share of renewable energy sources in heating and cooling in different countries of the European Union.

From the Figure 1, the following statements can be made about the energy mix:

- 1) Different countries have different levels of share of renewable energy in the total energy use in the field of heat supply.
- 2) In the last few years, the largest change in the proportion could be experienced in the Baltic States. In this change, the relative rearrangement of the fuel price and the increase in gas prices played an important role.
- 3) Other measures, mainly tax and administrative reduction measures, have been taken to orient energy use towards biomass and biogas-based heat production, such as halving the VAT on biomass in Latvia or exempting

large-scale plants fueled by biomass and biogas from environmental charges in Lithuania.

- 4) Large-scale growth over the past years is not expected to remain unchanged in the coming period due to the high aid component and the decrease in energy prices (Kácsor, Kerekes and Mezősi, 2019)

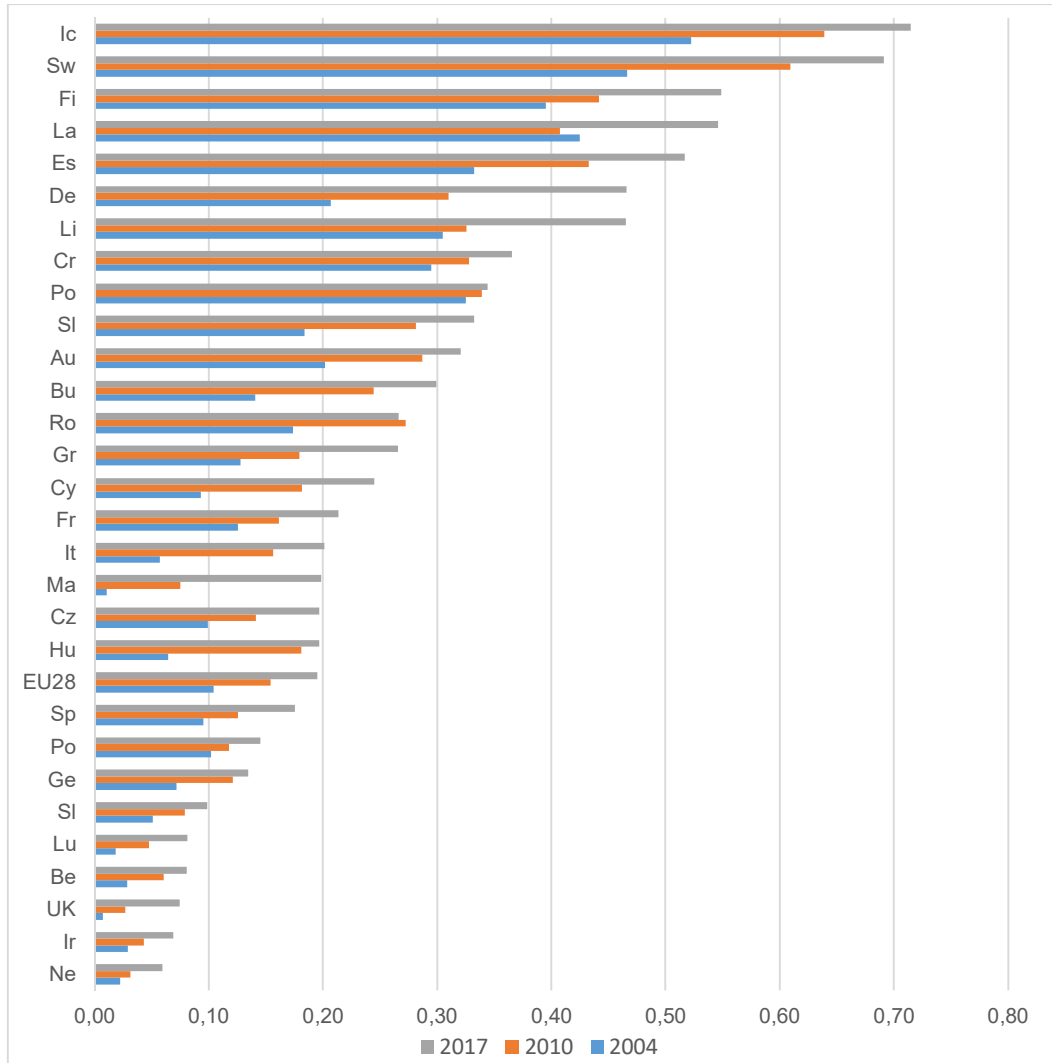


Figure 1: Proportion of renewable energy sources in total heat supply capacity in the 28 Member States of the European Union 2004-2017

Source: Own compilation based on Eurostat, [nrg_ind_ren]

3. Summary

The purpose of this study was to provide a brief summary of the past, the present and the potential future development opportunities of district heat suppliers. Based on the examination of the most important international literature in this field, heat suppliers were examined based on different grouping possibilities. For the future, fourth generation heating / cooling systems relying on renewable energy sources can play a key role in achieving climate protection goals. This study provides a good basis for the author's further research works.

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Bio-note:

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ASPECTS REGARDING THE WAY IN WHICH GUESTHOUSES IN FELIX SPA AND 1 MAI SPA USE THE ONLINE TOOLS

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Abstract: *The beneficial effects of thermal water on health make the spa resorts an important attraction for tourists. They can relax or benefit from comprehensive recovery treatments, and also, they can make hiking in the surrounding areas. The spa tourism in the Felix Spa - 1 Mai Spa area is supported, besides hotels, by many guesthouses. Most of the tourists are searching for information online, using online services for booking or paying. Therefore, it is of great importance the way in which the guesthouses are signaling their presence online and the tools they use. In this paper, we present the results of the analysis made for several websites of different guesthouses in the Felix Spa - 1Mai Spa area. In analyzing web sites, we mainly considered online tools regarding customer loyalty. We also have tracked the extent to which each of the categories of instruments considered is used by the guesthouses.*

Keywords: *online presence; online tools; customer satisfaction and loyalty tools; digital marketing.*

JEL Classification: *C80; M21.*

1. Introduction

Spa tourism has an old tradition in our country. It generates positive social and economic effects, contributes to the economic development of the region in which it manifests.

The beneficial effect of the thermal waters in the FELIX Spa - 1MAI Spa area has been discovered since ancient times. The geo-thermal water springs have curative properties, being known abroad. FELIX Spa - 1 MAI Spa area, located in the north-west of the country, in the Crisuri plain, enjoys a continental climate with mild winters and summers having moderate temperatures, being ideal for spa tourism.

The conditions of relaxation, rest, and recovery attract a large number of Romanian and foreign tourists annually. Here, they can find:

- Modern treatment bases
- Thermal water pools
- A covered Aqua Park
- Lakes covered with water lilies
- Forest in the area, which offers the possibility of nature walks
- Leisure activities such as horse riding, fishing, paintball, running trails

- The opportunity of visiting the city of Oradea, located nearby. Tourists can use public transportation, which runs regularly and at short intervals.
- Option for participating in excursions organized in the Apuseni mountains area.

For accommodation, tourists can opt either for a hotel or one of the many guesthouses in the area. They can call a travel agency or they can make their own reservation.

According to Satyavani and Chalam, the Internet plays a significant role in consumer decision making. There are millions of people online every moment, and they are potential customers in the online market (Satyavani and Chalam, 2018).

According to Conyette, consumers search the web for information before making a purchase. The behavior mentioned above is typical to the travel sector, due to the high level of involvement in the travel product (Conyette, 2010).

Conyette and College say the Internet is widely used for booking or purchasing travel products. These activities can take place before the trip begins, but also during their journey (Conyette and College, 2012).

According to Conyette and College, more and more travel products will be booked online, since online intelligent agents are becoming more powerful and easier to use, and portable devices are becoming more and more versatile (Conyette and College, 2012).

According to Satyavani and Chalam, the Internet and web technologies have created a new environment that allows the online transmission of any information, using multimedia tools. The web is the environment that enables customers to decide everything with the click of a mouse. Online customer is generally stronger and more demanding (Satyavani and Chalam, 2018). Online tools help the customer in the decision-making process and contribute to the quality of the decisions taken (Haubl and Trifts, 2000). Maziriri and Chuchu state that there is a greater perceived risk associated to online buying rather than the traditional mode of shopping (Maziriri and Chuchu, 2017).

According to Bilgihan and Bujisic, customers who buy online make their purchase decision based on the information found on the websites (for example, customer reviews, camera images, virtual tours) (Bilgihan and Bujisic, 2015).

Websites must be friendly and attractive while providing competent online communication that motivates clients (Satyavani and Chalam, 2018).

The number of people who are informed online about tourist destinations, who visit several websites before choosing their destination, who make online reservations or payments is increasing. Also, the online marketing tools have a tremendous contribution on how the marketing specialists approach their activities and on how they reach their marketing goals (Popa, Tarca, and Tarcza, 2016; Popa, 2015). Following these trends, guesthouses are concerned about becoming as visible as possible online. Also, they tend to configure their websites to provide useful and easy to find information, to offer the possibility of online reservations and payments.

2. The premises and research methodology

In order to evaluate the way in which the guesthouses in the Felix Spa and 1 Mai Spa use the online instruments for their activity, we analyzed the websites for 80 of the guesthouses. In this analysis we were focused on the online tools used to ensure customer loyalty. The research is exploratory in nature, based on content analysis as research method.

Bruhn (Bruhn, 2001; pp.111) stated that customers' devotion can be increased by enhancing its experience through an offer oriented toward its expectation and an increased performance of the company.

For a guesthouse to increase customer loyalty it can use multiple instruments, which can be classified in multiple ways. Different authors tried to group them in various ways. Thus, Bruhn created the following classification for these tools (Bruhn, 2001; pp.124-125):

- tools focused on interaction
- tools focused on satisfaction
- tools aiming to prevent customer migration.

We considered this classification suited in establishing the customer loyalty tools categories identified on the analyzed guesthouses websites.

We started from the following three hypotheses:

- Websites are friendly, information are easily accessible.
- The most of the online tools used to increase customer loyalty are part of the satisfaction-focused tools.
- The most used online customer loyalty tools are part of those related to interaction.

The following two issues were considered:

- How much the online customer loyalty tools are used on the analyzed websites
- How intensive each of the customer loyalty tools categories previously mentioned are used on the websites.

3. Data analysis and interpretation

We identified a number of 27 customer loyalty tools on 80 analyzed websites. The number of identified tools varies from a category to another as shown in Table 1.

Table 1. Number of customer loyalty tools identified by tools categories

Category of customer loyalty tools	tools focused on interaction	tools focused on satisfaction	tools aiming to prevent customer migration
Number of tools identified	6	16	5

The widest tool palette belongs to the tools focused on satisfaction. This indicates that the guesthouses in Felix Spa – 1 Mai Spa are strongly oriented toward their customers' satisfaction degree. When referring to hospitality business, guest satisfaction is strongly related to the decision whether or not to return to the same hotel and / or recommending it to other tourists (Dominici and Guzzo, 2010), criticising or evaluating it on specific online booking systems such as booking.com, tripadvisor.com, priceline.com or agoda.com.

The narrowest tool palette belongs to the category of instruments focused on barriers to customer migration. This indicates that guesthouses in Felix Spa – 1Mai Spa area do not pay enough importance to this kind of instruments which should increase the customer loyalty if used.

Analyzing the data acquired according to those three categories mentioned above, we found that:

- Few interaction-focused instruments are used, but as much as 25% of them can be found on all analyzed websites. In what concerns them we observed the following:
 - All websites provide with an e-mail address and one or more phone numbers (both on terrestrial line and cellphones) for information or booking.
 - The most of the websites offer an online booking form. In many cases there is a delay for confirmation which sometimes can be longer.
 - Some of the guesthouses offers the possibility of online checking for the room availabilities for the desired period. This way the customer can check quickly room availabilities for the desired period and also he/she can decide on the way for booking the room (by phone, email, or online form). This way the waiting time for availability confirmation is avoided.
 - Some of the guesthouses offers the possibility of online booking, but using third online dedicated booking websites (such as, for example, booking.com)
 - Even if in small number, there are guesthouses which allow booking only by phone calls. If they would use online booking services, they might be more attractive for customers preferring the online interaction way in choosing their leisure location.
 - The most of the analyzed websites do not offer their clients the possibility of posting comments or customer reviews. However, some of the analyzed guesthouses can be found on dedicated booking websites (such as booking.com) which offer the possibility of posting such comments and to read other customer reviews.

Figure 1 shows the interaction-focused instruments degree of use for the analyzed guesthouses.

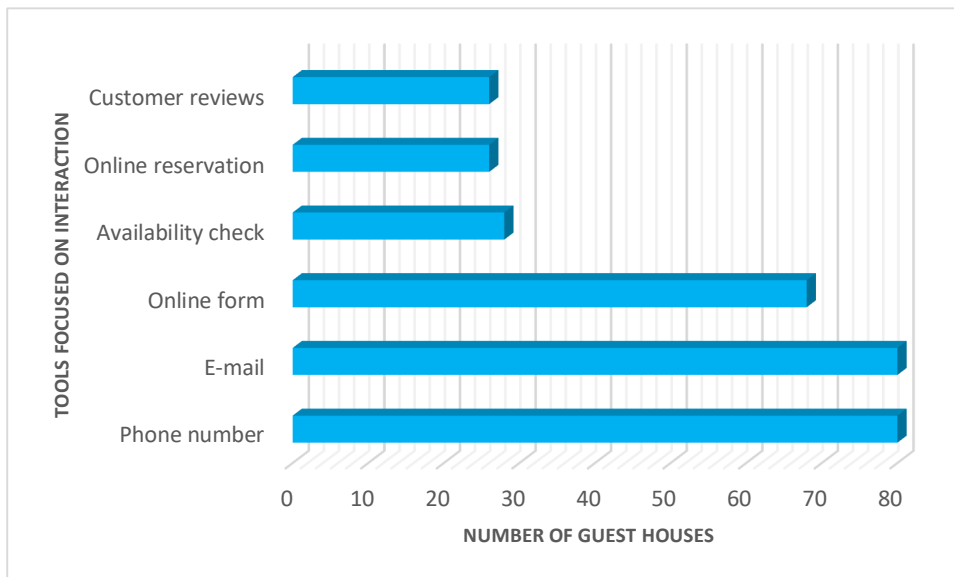


Figure 1. The use of customer interaction-focused instruments for the analyzed guesthouses

- The guesthouses websites from the Felix-Spa – 1Mai-Spa area are conceived to offer a high degree of satisfaction to their customers. Thus:
 - All websites offer informations regarding the guesthouse location and images of the surroundings and rooms. To show their exact location, most of the guesthouses use interactive maps (such as google maps). Very few of them limit their location information to terrestrial address and/or GPS coordinates.
 - All websites provide information regarding the services they offer to the customers. Some of them offer a wide palette of services, while other have a narrow one. Among the most common services one can find jacuzzies, children playgrounds, gazeboos, courtyard with barbecue facilities, sitting area, fully equipped kitchen, freeparking at the property or guarded parking. Among the services offered to a lesser extent one can find thematic excursions (such as for hunting and fishing), trips in the neighborhoods and to Stana de Vale resort, Bears' Cave, hiking or biking or tours for visiting Oradea.
 - Among the serices provided „free wifi” can be seen, which demonstrates that guesthouses managers are aware of the increasing role of easy accessing to online communication services in attracting and maintaining their customers.

- A large number of websites offer information related to tourism, culture and leisure activities in the area, and also about curative tourism.
- Some of the websites, even though a small number, offer performance warranties, in the form of diploms and certificated issued to them by different authorities. Also, some of the guesthouses show a list of collaborating partners.
- The least frequent instruments encountered are those related to complaints management.

In order to visualize the satisfaction-focused degree of use for the analyzed guesthouses, we grouped the 16 identified instruments in 11 groups (Figure 2). Mainly we grouped the services provided, using as the grouping criteria the frequency of their appearance on the websites.

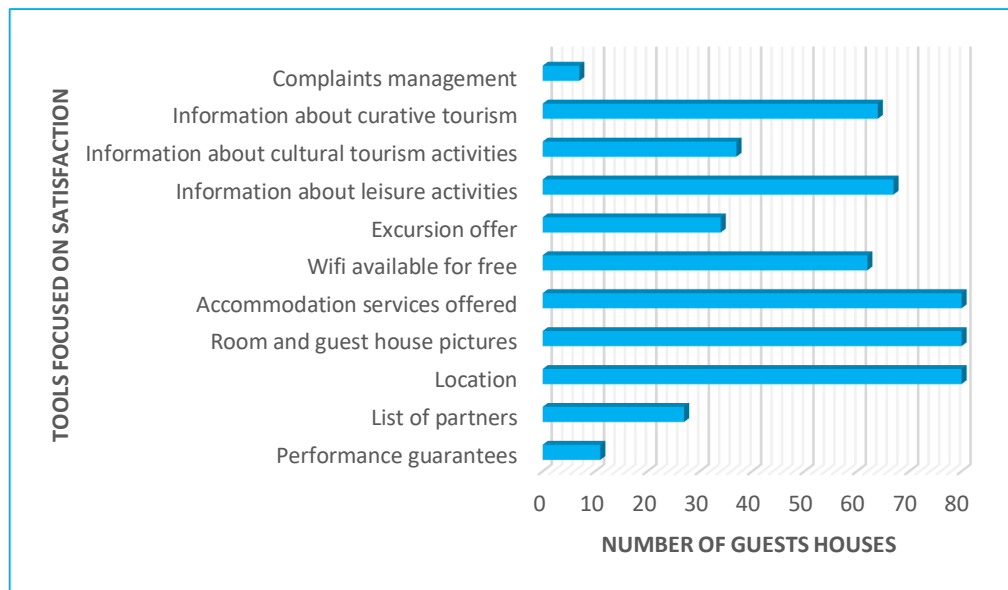


Figure 2: The use of customer satisfaction-focused instruments for the analyzed guesthouses

- Even though the tools aiming to prevent customer migration are used in small number, we encountered them on a relative large number of websites. Regarding to these instruments:
 - The most seen instruments were those related to fees and guesthouse reputation.
 - The least used instrument was the one referring to bonuses (free/welcome drinking, fruit basket, etc.)

- A relative large number of analyzed guesthouses offer vouchers/discounts for access to water-parks or to Apollo-Felix geothermal water strand.

Figure 3 shows the degree of use for the tools aiming to prevent customer migration

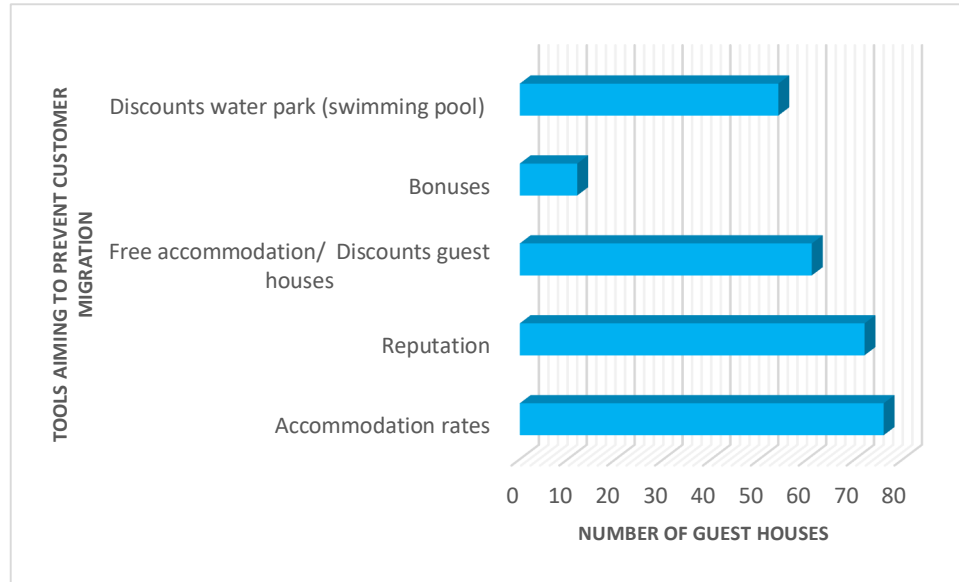


Figure 3: The use of tools aiming to prevent customer migration

4. Conclusions

The study results show that most of the analyzed websites are friendly, the relevant information is easily and quickly accessed. Therefore, managers understood that only online presence is not enough and a potential customer leaves the website if their expectations are not fulfilled.

All the analyzed websites use online instruments (on a larger or smaller scale) to attract and make their customers stable. Some of the guesthouses give great importance to the use of these instruments, thus being able to create themselves advantages with respect to other guesthouses having similar accommodation conditions.

The most identified instruments (as number) are those targeting customers satisfaction. Meanwhile, we found on all websites both instruments targeting satisfaction and instruments targeting interaction. Instruments which are part of the category of tools aiming to prevent customer migration are rarely seen on the websites, even though a small number of them can be found on a large number of websites. Guesthouses pay the biggest attention to their customers' satisfaction, followed by the way in which they interact with them. They do not pay enough

importance to the tools aiming to prevent customer migration, which would allow them to increase their rate of customer fidelity.

Guesthouses showing on their websites a larger palette of the online tools have better chances in the process of attracting and keeping their customers.

Some of the guesthouses, not too many, are listed on the online booking systems (such as booking.com). This means that their managers understand that an active presence online means an increasing number of their customers.

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**SECTION: *SUSTAINABLE DEVELOPMENT,
INTERNATIONAL BUSINESS, EUROPEAN
INTEGRATION, FOREIGN LANGUAGES AND
BUSINESS ENVIRONMENT***

TRADE OPENNESS, FOREIGN DIRECT INVESTMENT AND LIFE EXPECTANCY IN NIGERIA

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Abstract: *The paper examines the effects of trade openness, particularly, import openness and FDI inflows on life expectancy in Nigeria using annual time series data spanning the period from 1981 to 2017. The methodology involves the ARDL approach to cointegration and error correction modeling. The empirical evidence indicates that while import openness adversely affects life expectancy in the country, the effect of FDI inflows is positive, but not significant. Further evidence are that increase in the level of per capita income and government recurrent expenditure in health enhance life expectancy, while inflation adversely affects it. In view of the empirical evidence, the paper recommends, as measures to enhance life expectancy in Nigeria, imposition of restrictions on some categories of imports especially consumer goods (while encouraging domestic production of same through investment-friendly policies, programmes and initiatives, to meet domestic demand for consumer goods), deliberate and conscious effort to enhance the level of per capita real income through encouragement of investment to boost employment, increases in general government expenditure and, expenditure in health in particular, and control of inflation by the monetary and fiscal authorities using appropriate policy instruments.*

Keywords: *Trade Liberalisation; Globalisation; Import Openness; Foreign Direct Investment; Quality of Life; Life Expectancy.*

JEL Classification: *F21; I31; O24; P33; P45.*

1. Introduction

One of the benefits of international trade (precisely, its import component) is that it enhances access to goods, services and technologies that are not produced locally. It thus has consumption- and welfare-enhancing effects. Improved welfare translates into enhanced life expectancy, all things being equal. However, there is a caveat as some imported products could have adverse health consequences if consumed, owing to their chemical composition. For example, in Nigeria, health experts have warned that some imported foreign items such as foreign toothpaste if mistakenly swallowed while being used could have damaging effect on body organs owing to their high chemical contents. In 2007, Nigeria's National Agency for Food and Drug Administration of Nigeria (NAFDAC) placed a ban on importation of all brands of foreign-made toothpaste and declared that only made-in-Nigeria toothpaste registered by the Agency was safe for public use (Alao, 2007).

Closely associated with international trade in the new wave of globalization is FDI flows. Where FDI inflow is complementary to domestic investment, the stock of capital in the economy increases, employment prospects receive a boost (unemployment is reduced), welfare is enhanced, and these may translate into improvements in quality of life and life expectancy, *ceteris paribus*. However, it has been argued that activities of some multinational corporations (MNCs) through which FDI flows into less developed countries (LDCs) also pose some threats to human life as a result the adverse health effect of their products such as those involved in production of alcohol and tobacco (Deaton, 2004) and the effect of emissions of toxic substances into the environment where there is less stringent environmental regulation. This is a tenet of the pollution haven hypothesis (Seker, Ertugrul & Cetin, 2015).

Mobility of labour (or migration) associated with liberalized cross-border trade and FDI inflow have been linked to spread of pathogens which cause life-threatening diseases that adversely affect life expectancy in less developed countries (Popoola, 2018). Life-threatening diseases “imported” into an economy and environmental pollution as a result of activities of MNCs tends to affect quality of life, which in turn adversely affects life expectancy, all things being equal.

Nigeria formally embraced trade liberalisation policies in 1986 as part of the overall Structural Adjustment Programme (SAP) package. Ever since, cross-border trade flows, particularly importation activities and inflow of FDI especially to the oil and gas sector have increased tremendously (Central Bank of Nigeria, 2017; World Bank, 2018). As at 2018, life expectancy in the country stood at 54.7 years for male, 55.7 years for female while the national average which stood at 55.2 years (for both sexes) was considerably below the global average of 72 years, and the African average of 61.2 years. Thus the country was placed in the 178th position in the World Life Expectancy ranking (World Life Expectancy, 2019). The implication is that the country has one of the lowest life expectancies in the world. Low life expectancy is an indicator of low quality of life. This paper seeks to investigate the implications of import openness and FDI inflows for life expectancy in Nigeria. In doing this, answers shall be sought for the following research questions: Does import openness affect life expectancy in Nigeria? Do FDI inflows affect life expectancy in Nigeria? The following null hypotheses shall be tested: Trade liberalization does not affect life expectancy in Nigeria; FDI inflows do not affect life expectancy in Nigeria.

2. Literature Review

In this section we review the literature on life expectancy effects of trade and FDI inflow.

2.1. Trade and Life Expectancy

Owen and Wu (2007) examined the relationship between trade openness and health outcomes (infant mortality rates and life expectancy) using panel data on 219 countries. The analysis involved specification and least squares estimation of fixed effect models. The study found that increased openness to trade was associated

with lower infant mortality rates and higher life expectancy especially in developing countries. These were attributed to knowledge spill overs of international trade.

The effect of trade openness on women's welfare and work life is examined in Bussmann (2009) using unbalanced panel data covering the period from on a sample 134 countries. In the study, health and education variables such as life expectancy for female, and female school enrolment ratio, are used as proxies for women's welfare, while female labour force participation rates are used as indicators or proxies for female employment. Methodologies of the study include fixed effects and system GMM estimations. The study found that women's life expectancy was not directly affected by trade openness. However, women's access to primary and secondary education was slightly improved by trade openness slightly improves. It further found that trade openness enhanced women's professional lives. The evidence from developing countries indicated that trade openness was associated with improvement in women's employment in services sector. Developing countries evidence indicated that trade openness was associated with increase in the number of women employed in industry and agriculture. Thus it could be concluded from the study that trade openness is not a determinant of female life expectancy.

Bergh and Nilsson (2010) assessed the impacts of economic, social and political globalization on life expectancy using panel data covering the period from 1970 to 2005 on 92 countries. The OLS fixed effect estimator was employed for the analysis. The study found that economic globalization (which encompasses trade and capital flows) positively and significantly affect life expectancy in the countries. The effect was found to be consistent even after controlling for income, nutritional intake and other relevant variables, and also when the sample was limited to low-income countries. However, contrary to these findings for life expectancy effect of economic globalisation, the effects of political and socio-cultural globalization on life expectancy were found to be statistically not significant.

Umaña-Peña *et al.* (2014) assessed the effect of liberalization of trade in services sector on three health indicators namely life expectancy, under-5 mortality and maternal mortality in 153 member countries of the World Trade organization using multivariate linear regression analysis. The effects of other variables including per capita income, public health expenditure and income inequality on the health indicators were also assessed. The study period is 1995-2010. The result of the analysis indicated that liberalization of trade in services had no significant effect on health during the period. It however found that per capital income and public health expenditure were more significant explanatory factors of the health indicators. GDP per capita and public expenditure in health were found to enhance life expectancy, and reduce infant and under-five mortalities.

Herzer (2014) examined the long run effect of trade on life expectancy in the United States during the period from 1960 to 2011 using annual time series data. The ARDL approach to cointegration and error correction modeling was employed for the analysis. Alternative estimation techniques including dynamic OLS (DOLS), fully modified OLS (FMOLS) and maximum likelihood (ML) estimation were also employed for robustness checks. The study found that long run relationship exists between trade and life expectancy in the country. It also found that the long run effect

of trade on life expectancy in the country is positive and significant at the 1% level. Thus international trade plays enhances life expectancy in the country.

Alam, Raza, Shahbaz and Abbas (2015) examined the long-run and the short-run effects of trade openness and FDI on life expectancy in Pakistan using annual time series data spanning the period from 1972 to 2013. The ARDL (bounds) test approach to cointegration and error correction modeling was employed for the analysis. The causal linkages between the variables were tested using the vector error correction modeling approach to Granger causality test. The study found positive and significant effects of trade openness and FDI on life expectation in the long-run. The effects were also found to be positive in the short run, however, only the effect of FDI was significant. The result of the causality analysis showed that trade and FDI Granger cause life expectancy in the short run. Thus international trade and FDI serve to enhance public health (measured by life expectancy) in Pakistan.

Novignon and Atakorah (2016) employed alternative panel estimation techniques including fixed and random effects modeling and system GMM to examine the effect of trade openness on life expectancy, infant mortality and under-five mortality rate in 42 sub-Sahara African (SSA) countries. The study period is 1995 to 2013. The study found that trade openness positively and significantly affects life expectancy in SSA. The effects of trade openness on infant mortality and under-five mortality were also found to be negative. Thus trade openness is associated with enhancement of life expectancy as well as reduction in cases of death of infants and under-five children. These imply that international trade contributes significantly to public health and life quality in SSA, and suggests the need for countries in the SSA to embrace (though cautiously) global trade by way of trade liberalization.

The long-run relationship between international trade and life expectancy was investigated in the study by Palamuleni (2017) using panel dataset for the period 1965 to 2013 on 25 less developed countries (LDCs). Alternative panel data methodologies which correct for endogeneity and cross section dependence were employed for the analysis. The study concluded that long run, bidirectional relationships exist between international trade and life expectancy in LDCs. Thus, while trade positively affects life expectancy, enhanced life expectancy contributes to expansion of international trade in the LDCs.

The health outcome effects of infant mortality and life expectancy in 12 MENA countries during the period from 1970 to 2015 were examined in Jawadi, Gouddi, Ftiti and Kacem (2018). Three proxies were used for trade openness, namely global trade, trade with G7 and trade with non-G7 countries. In the study, the moderating effect of governmental corruption on the health sector was also examined. A fixed effect model was estimated in the analysis. It was found that trade openness positively affects life expectancy and negatively affects infant mortality in the region. Further evidence from the study are that improved international trade and greater control of corruption engenders information and technology spillover which have positive effects on the health sector. Thus trade openness enhances life expectancy and reduces infant mortality rate in the region.

Popoola (2018) examined the impact of economic globalization on life expectancy in Nigeria using annual time series data for the period 1986 to 2016. In doing this, life

expectancy was expressed as a function of trade openness, FDI and carbon IV oxide (CO₂) emission (which was used as proxy for environmental degradation). The method of Johansen cointegration technique was employed for the analysis. The cointegration test indicates two cointegrating relationships. However, the analysis was inconclusive as the study did not proceed to estimate the long run effects of trade openness and FDI on life expectancy in the country.

Qadir and Majeed (2018) examined the effect of trade openness on life expectancy and infant mortality in Pakistan using annual time series data spanning the period from 1975 to 2016. The analysis involved OLS estimation of a multivariate regression model. The study found that trade liberalization adversely affects health outcomes as it was found to be positively related to infant mortality rate and negatively related to life expectancy in the country. The effect of health expenditure on life expectancy was found to be positive and significant at the 10% level, implying that health expenditure serves to enhance life expectancy, while its effect on infant mortality was negative, but statistically not significant at the conventional levels. The effect of general government expenditure on life expectancy was positive and significant, while its effect on infant mortality was negative and significant.

2.2. Foreign Direct Investment and Life Expectancy

Herzer and Nunnenkamp (2012) examined the long run effect of FDI on health (life expectancy at birth) in 14 developed countries during the period from 1970 to 2009. The panel dynamic OLS estimation procedure which corrects for endogeneity was employed to obtain optimal estimates of the long run coefficients of the specified model. The study found that a point increase in FDI-GDP ratio was associated with 0.028years decrease in life expectancy. Based on this finding, the researchers concluded that FDI generally has a negative effect on health in developed countries. In contract with the study by Herzer and Nunnenkamp (2012), Burns, Jones, Goryakin and Suhrcke (2017) examined the health effect of FDI in low and middle income countries (LMICs) during the period 1974 to 2012. In the study which involves 85 LMICs, life expectancy at birth is used as proxy for overall health. The methodology applied involved the IV-FE (instrumental variable-fixed effect) estimation which corrects for potential endogeneity. The study found that FDI inflows to LMICs generally enhance life expectancies therein.

Maku and Ajike (2015) examined the welfare effect of financial flows using panel dataset for the period 1980 to 2012 on 16 SSA countries. Various health indicators including life expectancy, infant mortality rate, human development index, etc. were used as proxies for human welfare. The results of estimation of fixed effect models indicated that FDI positively and significantly affect life expectancy in SSA. Contrary to this, the effect of foreign portfolio investment on life expectancy was negative and significant. This suggests that emphasis should be on attracting more FDI rather than portfolio investment in the region's quest to attract foreign finance.

Nagel, Herzer and Nunnenkamp (2015) investigated the effect of FDI on overall population health (using life expectancy as proxy) using panel data covering the period from 1980 to 2011 on 179 countries. The system GMM estimator was employed for the analysis. A nonlinear relationship between FDI and life expectancy was found. FDI positively affects life expectancy at low level of income. However,

the effect reduces as income rises and turns negative at very high income levels. These findings tend to corroborate findings from previous studies such as those of Herzer and Nunnenkamp (2012) and Burns, Jones, Goryakin and Suhrcke (2017). Spinova and Ougate (2017) investigated the effect of FDI on socio-economic development in developing countries of Europe, by estimating fixed effect models to *inter alia*, evaluate the effect of FDI on life expectancy. The study found no significant effect of FDI on life expectancy in the countries. Furthermore, it found that the effects of interaction of FDI with other variables such as trade openness, corruption perception index, health expenditure and government expenditure in education, on life expectancy remained statistically not significant. Thus for developing countries of Europe, FDI is not a determinant of life expectancy.

The causal relationship between FDI and poverty reduction in South Africa was investigated in the study by Magombeyi, Odhiambo and Watson (2017). In the study, three variables were used as proxies for poverty reduction. The variables are life expectancy, infant mortality rate and household consumption. Annual time series data covering the period from 1980 to 2014 on the variables were employed for the study. The methodologies of the study include ARDL bounds test approach to cointegration and the ECM-based causality test. Among other findings, the study found unidirectional causality running from life expectancy to FDI. This suggests that FDI is not a significant predictor of life expectancy in the country.

Magombeyi and Odhiambo (2017) also investigated whether or not FDI inflows reduce poverty in Tanzania. The study covered the period 1980 to 2014, and as in their other studies, three proxies were used for poverty reduction namely life expectancy, infant mortality rate and household consumption. ARDL approach to cointegration and error correction analysis was employed as in their previous studies. Among other findings, empirical evidence indicates that FDI has no significant short run and long run impacts on life expectancy in Tanzania.

The impact of FDI inflows on poverty reduction in Botswana during the period from 1980 to 2014 was also examined by Magombeyi and Odhiambo (2018). As in the previous study by Magombeyi *et al.* (2017), life expectancy, infant mortality rate and household consumption were used as proxies for poverty reduction. The ARDL (Bounds) test approach to cointegration and error correction modeling was employed for the analysis. The study found, amongst others, that for the economy of Botswana, using life expectancy as proxy for poverty reduction, FDI negatively and significantly impacts life expectancy in the long run, but positively affects it in the short run.

Tsaurai (2018) examined the effect of FDI on poverty reduction efforts in Africa using panel dataset covering the period from 2002 to 2012 on 16 countries in Southern and Western African regions. As in the studies by Magombeyi and Odhiambo, three variables namely life expectancy, infant mortality rate and household consumption expenditure (as percentage of gross national product) were used in separate models as proxies for poverty reduction. The study employed alternative techniques of panel data analysis including pooled OLS, fixed effect, random effect and system GMM. The study found, *inter alia*, that FDI into the countries was associated with improvement in life expectancy.

Martin and Anguelov (2018) did a comparative analysis of the effects of foreign aid (official development assistance, ODA) and FDI on quality of life (under-five mortality

and life expectancy). In doing this, countries were grouped into two: 30 with the highest FDI-GDP ratio, and 30 with the highest ODA-GNI ratio. The analyses involved dynamic panel data estimations. The study found, amongst others that FDI has no significant effect on life expectancy. ODA was however found to positively and significantly affect life expectancy.

From the review of the literature, it was observed that most of the previous studies were panel data studies which examined separately the life expectancy effects of trade openness and FDI inflows. Quite a few studies jointly examined the effects of trade openness and FDI on life expectancy. The current study is a country-specific study focusing on Nigeria, as country-specific effects may differ from regional or sub-regional effects as a result of country-specific conditions. The study also focuses on the effect of import openness on life expectancy, instead of the broader measure of trade openness comprising export openness and import openness as done in previous studies except Owen and Wu (2007) who employed import openness as a proxy for trade openness for robustness check in their panel data study. To the best of our knowledge (from our search of the literature), apart from the study by Popoola (2018) which attempted to examine the effect of trade openness and FDI on life expectancy, which was found to be inconclusive as the study only stopped at the cointegration test, no study has yet comprehensively examined the effects of import openness and FDI on life expectancy in Nigeria. A gap therefore exists in the literature, and this study intends to fill it. This study is significant as its outcome will guide policymakers in contriving policies aimed at enhancing life expectancy in the country.

3. Methodology

Following the theoretical frameworks developed in Herzer (2014) and Alam *et al.* (2015) and Jawadi *et al.* (2018) the model to be estimated to achieve the objectives of the study was specified functionally as:

$$\text{LEBT} = f(\text{FDI}, \text{IMOPN}, \text{RGDPPC}, \text{GINI}, \text{HEAEX}, \text{INF}) \quad [1]$$

Where LEBT = Life expectancy at birth (male and female); IMOPN = Import openness measured total imports as a percentage of GDP; FDI = foreign direct investment net inflows, Dollar; RGDPPC = Real GDP per capita; GINI = Gini coefficient (measure of income inequality); HEAEX = Government recurrent expenditure in health sector, INF = inflation, measured as annual percentage change in consumer price index.

The ARDL modeling approach to cointegration and error correction analysis developed by Pesaran, Shin and Smith (2001) was adopted in this study to analyse the relationship between life expectancy and the hypothesized determinants. The choice of this approach was informed by its flexibility in application in that it can be applied in cases of mixed order of integration of data, and the fact that it yields consistent and efficient long run coefficient estimates with valid t-statistics even in

the presence of regressor endogeneity peculiar with cointegrated regressors. The ARDL model was specified as:

$$\begin{aligned} \Delta \text{LEBT}_t = & \beta_0 + \sum_{j=1}^p (\delta_{1j} \Delta \text{LEBT}_{t-j}) + \sum_{j=0}^p (\delta_{2j} \Delta \ln(\text{FDI}_{t-j})) + \sum_{j=0}^p (\delta_{3j} \Delta \text{IMOPN}_{t-j}) \\ & + \sum_{j=0}^p (\delta_{4j} \Delta \ln(\text{RGDPPC}_{t-j})) + \sum_{j=0}^p (\delta_{5j} \Delta \text{GINI}_{t-j}) \\ & + \sum_{j=0}^p (\delta_{6j} \Delta \ln(\text{HEAEX}_{t-j})) \\ & + \sum_{j=0}^p (\delta_{7j} \Delta \text{INF}_{t-j}) + \Psi_1 \ln(\text{FDI}_{t-1}) + \Psi_2 \text{IMOPN}_{t-1} \\ & + \Psi_3 \ln(\text{RGDPPC}_{t-1}) + \Psi_4 \text{GINI}_{t-1} + \Psi_5 \ln(\text{HEAEX}_{t-1}) + \Psi_6 \text{INF}_{t-1} \\ & + \mu_t \quad (2) \end{aligned}$$

The parameters Ψ_1 to Ψ_6 are the corresponding long run parameters, while the parameters $\delta_2 \dots \delta_7$ are the respective short run coefficients of the underlying ARDL model. Δ is the first difference operator, μ is the residual term, j is the optimal lag order of the ARDL to be empirically determined. Implementation of the ARDL bounds test begins with the OLS estimation of equation 4, and testing the joint significance of the lagged levels of the explanatory variables using the F-test.

The null hypothesis of no cointegration ($\Psi_1 = \Psi_2 = \Psi_3 = \dots = \Psi_6 = 0$) is tested against the alternative hypothesis of cointegration ($(\Psi_1 \neq \Psi_2 \neq \Psi_3 \neq \dots \neq \Psi_6 \neq 0)$).

Two sets of asymptotic critical values at different levels of significance for the computed F-statistics are provided by Pesaran *et al.* (2001) The first set are critical values for the lower bound which assumes all variables of the model are $I(0)$, while the second set are critical values for the upper bound which assumes the variables are $I(1)$. Computed F-statistic greater than the upper bound critical value at a given level of significance, signifies existence of cointegration relationships as the null hypothesis of "no cointegration" is rejected; computed F-statistic less than the lower bound critical value at a given level of significance implies absence of cointegration relationships as the null hypothesis of "no cointegration" cannot be rejected. No conclusion is drawn if it is between the lower bound and the upper bound critical values. If the null hypothesis of no cointegration is rejected, the short run (error correction) model is derived from the ARDL as:

$$\begin{aligned} \Delta \text{LEBT}_t = & \beta_0 + \sum_{j=1}^p (\theta_{1j} \Delta \ln(\text{LEBT}_{t-j})) + \sum_{j=0}^p (\theta_{2j} \Delta \ln(\text{FDI}_{t-j})) + \sum_{j=0}^p (\theta_{3j} \Delta \text{IMOPN}_{t-j}) \\ & + \sum_{j=0}^p (\theta_{4j} \Delta \ln(\text{RGDPPC}_{t-j})) + \sum_{j=0}^p (\theta_{5j} \Delta \text{GINI}_{t-j}) \\ & + \sum_{j=0}^p (\theta_{6j} \Delta \ln(\text{HEAEX}_{t-j})) + \sum_{j=0}^p (\theta_{7j} \Delta \text{INF}_{t-j}) + \varphi \text{ECT}_{t-1} \\ & + \varepsilon_t \end{aligned} \quad (3)$$

φ is the error correction coefficient which measures the speed of adjustment to equilibrium in the event of short run deviation therefrom. ECT is the error correction term derived as the residual of the long run model (equation 3). The error correction coefficient is expected to be negatively signed and statistically significant to play the role of error correction (restoration of equilibrium) in the model. ε is the error term. The negative sign is a further indication that the variables are cointegrated. The corresponding long run model is specified as:

$$\text{LEBT}_t = \eta_0 + \eta_1 \ln(\text{FDI}_t) + \eta_2 \text{IMOPN}_t + \eta_3 \ln(\text{RGDPPC}_t) + \eta_4 \text{GINI}_t + \eta_5 \ln(\text{HEAEX}_t) + \eta_6 \text{INF}_t + \xi_t \quad (4).$$

The *a priori* expectations are $\eta_1 > 0$, $\eta_2 > 0$, $\eta_3 > 0$, $\eta_4 < 0$, $\eta_5 > 0$, $\eta_6 < 0$.

In light of economic theory, imports and FDI are expected to enhance life expectancy as both enhance knowledge spillover effects (Owen & Lu, 2001) and access to foreign goods and technology which are not locally available. Per capita income is expected to be positively related to life expectancy. Increase in per capita income (which is also an indication of decrease in poverty on the assumption that income is evenly distributed) is expected to enhance life expectancy. The gini index which measures income inequality is expected to be negatively related to life expectancy, as concentration of a country's income in a small fraction of the population especially where there is huge income gap may adversely affect life expectancy in the country. Increased government expenditure in health is expected to raise life expectancy all things being equal. Inflation hinders access to be necessities of life as it raises the cost of living which is associated with decreases in standard of living and life expectancy.

Prior to estimation of the models, the variables were tested for unit root to determine their time series properties. The Augmented Dickey Fuller (ADF) and the Dickey-Fuller Generalised Least Squares (DF-GLS) unit root testing techniques were adopted for this.

Annual time series data spanning the period from 1981 to 2017 were used for the study. The data were obtained from the WDI 2018 database, CBN Statistical Bulletin, 2017, and the Global Consumption and Income Project (GCIP) 2018. Specifically, data on life expectancy at birth (male and female), net FDI inflows, real GDP per capita, import openness and inflation were obtained from the WDI, data on

government recurrent expenditure on health were obtained from the CBN and data on income inequality were obtained from the GCIP.

4. Results and Discussion

The results of the unit root and cointegration tests are presented in Table 1 and Table 2 respectively, while the results of estimation of the ECM and long run model are presented in Table 3.

4.1. Unit Root Tests and Cointegration Test

The unit root test results involving ADF and DF-GLS processes are presented in Table 1.

Table 1. Unit Root Test

ADF Unit Root Test						
Variables	Levels			First Difference		
	ADF test stat	Critical Value (5%)	Inference	ADF test stat	Critical Value (5%)	Inference
LEBT	-3.67	-3.56	Stationary	-	-	-
ln(FDI)	-5.47	-4.34	Stationary	-	-	-
IMOPN	-2.76	-3.54	Nonstationary	-5.51	-3.55	Stationary
Log(RGDPPC)	-1.49	-3.55	Nonstationary	-3.68	-3.54	Stationary
GINI	-2.15	-3.55	Nonstationary	-6.09	-3.55	Stationary
HEAEX	-0.01	-3.56	Nonstationary	-5.17	-3.56	Stationary
INF	-3.89	-3.54	Stationary	-	-	-
DF-GLS Unit Root Test						
Variables	Levels			First Difference		
	DF-GLS test stat	Critical Value (5%)	Inference	PP test stat	Critical Value (5%)	Inference
LEBT	-3.84	-3.19	Stationary	-	-	-
ln(FDI)	-3.60	-3.19	Stationary	-	-	-
IMOPN	-2.85	-3.19	Nonstationary	-7.59	-3.19	Stationary
ln(RGDPPC)	-1.48	-3.19	Nonstationary	-3.46	-3.19	Stationary
GINI	-1.65	-3.19	Nonstationary	-6.20	-3.19	Stationary
HEAEX	-1.07	-1.95	Nonstationary	-1.28	-1.95	Stationary
INF	-3.07	-3.19	Nonstationary	-5.43	-3.19	Stationary

Source: Author's computations using EVIEWS 9.

The unit root test results indicate that the variables are of mixed order integration. The ADF unit root test shows that while life expectancy natural logarithm of net FDI inflows and inflation series are stationary at levels, other series are stationary at first difference. The DF-GLS test indicates that life expectancy and natural logarithm of net FDI inflows are stationary at levels, and the other series are stationary at first difference. These notwithstanding, there exists the possibility of a linear combination of the variables to be stationary; that is the possibility longrun convergence; the

possibility for the variables to be cointegrated. This was determined by the cointegration test. Given that the variables are of mixed order of integration, the ARDL (bounds) test approach was adopted to test for cointegration relationships. The result of the test is presented in Table 2.

Table 2. ARDL (Bounds) Test for Cointegration

Sample: 1982 2015		
Included observation: 34		
Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	26.53	6
Critical Value Bounds		
Significance	I0	I1
10%	2.12	3.23
5%	2.45	3.61
2.5%	2.75	3.99
1%	3.15	4.43

K = Number of explanatory variables

Source: Author's Estimation using Eviews 9

The bounds test for cointegration shows that the null hypothesis that no long run relationships exists among the variables is rejected even at the 1% level. This is indicated by the F-stat which is greater than the critical value of the upper bound. In view of this we infer that the variables are cointegrated. Given that the variables are cointegrated, the short run relationship between them can be represented with an error correction model.

4.2. Model Estimation Results

The estimated error correction representation and the corresponding long run estimates are presented in Table 3.

The results presented in Table 3 shows that the effect of FDI on life expectancy is positive in the short-and long-run, but not statistically significant. This suggests that the amount of FDI that flows into Nigeria's economy has not been sufficient enough to improve the quality of life of the people measured in terms of life expectancy. The effect of import openness on life expectancy in Nigeria is negative, and statistically significant in the short- and long-run, though the long run effect is more sizeable and significant. The implication is that importation generally adversely affects life expectancy in the country. Several reasons could be adduced for this. The (chemical) composition of the products being imported especially the consumer goods (processed foods) may pose serious threat to health. This was recently buttressed by the current Director General of Nigeria's NAFDAC who noted that processed food contained monosodium glutamate, excess sugar and excess salt all of which were harmful to health and posed serious threat to life (Akinselure, 2019). The adverse effect of high rate of importation on local producers could also have adversely affected domestic producers' competitiveness, profits, employment and

income thereby reducing affected individuals' capacity to access basic necessities of life which enhance life expectancy.

Table 3. ARDL Cointegrating and Long Run Form

Dependent Variable: LEBT			
Selected Model: ARDL(1, 0, 1, 1, 0, 1, 1)			
Sample: 1981-2017			
Included observations: 34			
Cointegrating Form			
Variable	Coefficient	t-Stat	Prob.
DLOG(FDI)	0.03	0.64	0.53
D(IMOPN)	-0.01	-1.74	0.10
DLOG(RGDPPC)	0.63	1.46	0.16
D(GINI)	-0.03	-0.04	0.97
DLOG(HEAEX)	0.04	2.11	0.05
D(INF)	-0.00	-1.44	0.16
CointEq(-1)	-0.14	-3.97	0.00
Long Run Coefficients			
Variable	Coefficient	t-Stat	Prob
LOG(FDI)	0.20	0.64	0.53
IMOPN	-0.11	-3.14	0.00
LOG(RGDPPC)	9.64	4.85	0.00
GINI	-0.24	-0.04	0.97
LOG(HEAEX)	0.55	3.71	0.00
INF	-0.03	-2.69	0.01
C	-25.4	-1.66	0.11

Source: Author's Estimations using Eviews 9.

The short run and the long run relationships between real GDP per capita and life expectancy are positive as expected, but the relationship is only significant in the long run. Thus increase in real GDP per capita will enhance life expectancy in the long run in Nigeria. Income inequality is negatively signed, though not statistically significant. This variable is therefore not a key factor affecting life expectancy in the country. The effect of recurrent expenditure in health is positive and significant in both short- and long-run, though it is more significant and sizeable in the long-run. This implies that increase in government recurrent expenditure in healthcare will enhance life expectancy in the country. Whereas the effect of inflation on life expectancy is negative in the short-and long-run, it is only significant in the long-run. Consistent or permanent rise in inflation will therefore adversely affect (or reduce) life expectancy in the country.

The estimated coefficient of the error correction term is negatively signed, as expected, and highly significant even at the 1% level. This further confirms existence of cointegration relationship between the explanatory variables and the dependent variable. Its size which is quite low implies that the speed of adjustment is quite low as only about 13% of the short-run deviation from equilibrium of the system is adjusted annually to restore equilibrium therein.

In view of the outcome of estimations (specifically, the t-ratios of the estimated long run coefficients), the null hypothesis that import openness does not affect life expectancy in Nigeria is rejected at the 5% significance level, while the null hypothesis that FDI inflows do not affect life expectancy in Nigeria cannot be rejected at the 5% significance level.

5. Conclusion and Recommendations

The paper examined the effects of import openness and FDI inflows on life expectancy (a measure of quality of life) in Nigeria during the period from 1981 to 2017. Based on the results of the empirical analysis involving the ARDL approach to cointegration and error correction it can be concluded that import openness adversely affects life expectancy in the country, while the effect of FDI inflows on life expectancy is positive, but not statistically significant. Thus FDI does not contribute significantly to life expectancy in Nigeria. Apart from these variables, life expectancy in Nigeria is also affected by the level of real per capita income, government recurrent expenditure in the health sector and inflation. While life expectancy is enhanced by increase in per capital income and health expenditure, it is adversely affected by inflation. The effect of income inequality on life expectancy is negative, but not significant. Income inequality is therefore not a key determinant of life expectancy in the country.

In view of the empirical evidence, the recommendations of the paper include imposition of restrictions on some categories of imports especially consumer goods (while encouraging domestic production of same through investment-friendly policies, programmes and initiatives, to meet domestic demand for consumer goods), deliberate and conscious effort to boost the level of real per capita income through encouragement of investment to boost employment, increases in general government expenditure and, expenditure in health in particular, and control of inflation by the monetary and fiscal authorities using appropriate policy instruments.

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LANGUAGE POLICY AND ECONOMICS: DOES ENGLISH LANGUAGE ACCELERATE THE WHEEL OF DEVELOPMENT IN THE ECONOMIES OR NOT? A REVIEW

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Abstract: *Having one common language could facilitate and reduce the cost of trading between different parties from different nations. In addition, it helps the economies to participate and benefit from the global economy. On the other hand, language policy, planning, and education are very important tools for economic development. In this paper, consequently, the focus is particularly on English language and its economic value as lingua franca for the development and how does English language proficiency increase each of Quality Education and Intercultural Competence and hence the economic advancement? Therefore, in this regard, it is important to emphasize the importance of the 'Economics of language', which appeared in mid-1960, and its role in deciding language policy as well as the government's intervention. Besides that, the return from investing in English language education and its impact on foreign direct investment in different countries. This study is a literature review analysis aiming to investigate the role of English in enhancing the development of the nations. Therefore, the study includes a wide range of scholarly past and recent scientific related-works. According to this review, despite the fact that the evidence relating to the mutual impact between language and economics is limited, there is no way to deny the importance of English in the development.*

Keywords: *Development; Economics Of Language; English Language; Intercultural Competence; Quality Education.*

JEL Classification: *O1; Z1; Z13.*

1. Introduction

In fact, the usage of economics which is related to language issues is increasing. In addition, many different worldwide trends, related to language, culture and ethnicity, usually give explanation of particular issues which can be also explained by the economics of language. These trends are the following. Firstly, the geographical and political restructuring of Eastern European countries as well as the Common wealth of Independent nations (after the fall of Berlin wall, 1989) has resulted in the reaffirmation of many different identities (locally and regionally) which had been restrained for long time. These identities are related to particular languages which become more obvious than before (1960- the first existence of the Economics of language). Secondly, after the 20th century, migration as well as diversity started to be intensive. it is also interesting that these trends are unlikely to be linked to

economic and political status but ,to an increasing extent, related to qualified professionals. As a result, these trends lead to increase the linguistic, ethnical and cultural diversity, especially in the urban areas. Thirdly, the establishment of international political and economic organizations such as European Union (EU) in which there are diversity of languages as well as the possibility of language conflict by different groups. Fourthly, the importance of globalization and its role in increasing the volume of international trade worldwide and decreasing the cost of telecommunication and traveling. These two indicators decrease the usual cost of communication between broad variety of people who use a broad variety of languages (Grin, 2003). Therefore, it is necessary to have particular language policy by which the resources can be allocated properly and this can be achieved through the Economics of language.

In practice, from the macro-economic point of view, many questions are still unanswered. For example, to which level the common language in the fifty states in the USA eased or helped the economic exchange such as the exchange of goods, services and production factors (like labor) and hence increased total income in comparison to Europe where there are many different languages. In the case of Europe, many procedures have been taken in order to facilitate the mobility of goods and people. These procedures include the reduction of tariff and non-tariff obstacles, setting up the European Union (EU), the freedom of mobility of EU citizens in the area and the adoption of one common currency in order to reduce the cost of trading. In addition, and on informal basis, Europe considers English language as a common language (lingua franca) for communication. Therefore, to what level English language will increase the GDP of Europe? (Chiswick, 2008). Therefore, knowing the quantitative answer could not be direct but possible. However, this does not deny the part English could play in enhancing the international development. Beside its importance in increasing each of economic competitiveness and educational improvement, English is usually part of the debate regarding its role to access the technology which can be considered as facilitative tool by which educational change and advancement could happen. As a result, it helps in the fulfilment of the United Nations' Millennium Development Goals (MDGs) (UN 2000), especially MDG. 2 'universal primary education' and MDG. 8 'to Develop a Global Partnership for Development' (Seargeant and Erling, 2011).

According to Kogut and Harbir (1988) and Benito and Gripsrud (1992), Foreign Direct Investment facilitates the availability of financial resources and know-how-to technological information to the host country and thus it increases the economic growth of the country. Therefore, this kind of activities entails learning particular foreign language by which the communication with foreign parties, authorities as well as customers can be easy.

In comparison to other languages, English is still the wide-spreading language worldwide (Coleman, 2011). Accordingly, it has been confirmed that development efforts become integral part of governmental and academic entities and associated with English language education (Bruthiaux, 2002). Hereby, many studies proved it, according to the following related facts. Firstly, considering mother-tongue as the language of teaching can enhance Quality education (Benson 2004, Trudell 2009). Secondly, there is positive correlation between Quality Education and Economic

growth (Hanushek and Woessmann 2008). Thirdly, there is a correlation between English proficiency and the growth of the economy (Grin 2001, Chakraborty and Kapur 2008).

In this paper, the aim is to conduct investigation about English language and its impact on the economic development in the literature. Therefore, the paper includes two inter-related sections. The first section focuses on the language of economics as a discipline of economics and its importance for language policy choice. The second section of this paper discusses the role of English on enhancing the economic development through two factors: Quality Education and Intercultural Competence. Therefore, the paper tries to investigate, using literature review, how to effectively decide the most appropriate language policy for the economy and what does the economic value of English language stand for?

2. Materials and Methods

The study used literature review analysis with the objective to investigate the influence of English language as lingua franca on the economy. The investigation followed logical structure of discussion starting from what the literature does include in general (the mutual impact of language and economic variables) to narrow particular point of debate (regarding the impact of English language on the development) (from the macroeconomic perspective). This analysis included related literature from various sources starting from the past until the last scholarly studies as well as critiques in this regard.

3. Results and discussion

3.1. Related Literature: The Economics of Language

Economics of language's first emergence was in the mid-1960s. In that time, precisely in 1965, Jacob Marschak published his article ,titled Economics of Language, in Behavioral Science. Marschak's initial ideas was about considering language as value, utility, costs and benefits. (Zhang- Grenier, 2012). However, there are three generations of studies which are considered as the beginning of this filed. The first generation's work was empirical in the 1960s. However, its origins can be dated back to the economic analysis of racial discrimination which was written by Becker (1957) and its analytic application to language which was suggested by Raynauld and Marion (1972). Accordingly, it attributes the ethnic feature to the language. On the other meaning, mother language is used as identity to assign every person to his/her group. Hence, this can influence the social and economic status of the assigned person. This feature or function can be used to explain the reason behind inequality of earnings between white and black people in USA and also between English speakers and people speaking French in Canada. With regard to economic analysis, it can be connected to discrimination more than language issues. The second generation of this filed, which was in the period between 1970s and 1980s, focuses on the human capital aspects of language. This, in turn, opens the door to various standpoints on language and particularly ties with education economics. In this regard, it shows the language skills as a capital by which people

and society can invest and make profits. For example, the social and economic situation of immigrants (such as Spanish native speakers in USA) was evaluated as empirical work to assess the resulted value behind learning English. The third generation of this field, which was proposed by Vaillancourt (1980), indicated the fact that labour income can be determined by language functions. Therefore, according to this generation, languages aren't considered as kind of identity or as skills necessary to communicate. Rather, it is a group of linguistic characteristics which can affect the social and economic situation of the individuals (Grin, 2003).

According to the literature, Economics of languages was reviewed by several researchers such as Vaillancourt (1983), Grin (1996, 2003), and Grin, Sfreddo & Vaillancourt (2011). Their reviews played important role to clarify the relation between economic factors and language issues. Recently, some economists included game theory approach to the literature (which may be close to the ideas of Marschak) such as Rubinstein (2000), Glazer & Rubinstein (2004, 2006). (Zhang-Grenier, 2012).

In fact, the literature is full of examples regarding the impact of English on the development. However, other widely spoken languages could be important in the economic performance (on regional or even international level). For example, the study of Chiswick et al. (2000) investigated the impact of Spanish language on the earnings in Bolivia. It finds out that people speaking Spanish are more lucky than bilingual as well as indigenous languages speakers. In addition, Spanish language is projected to spread worldwide in different regions such as USA where Spanish language comes after English and hence considering the strongest country in the world as one of the most powerful Hispanic nations in the mid of the 21th century (Lago, 2011). Besides that, Spanish language occupies the status of second language in each of Brazil (in the education system), Europe (After English) and Asia (including China and Philippines). Regarding its economic value, it has been proved that Spanish language plays important role in the commercial trade throughout the world. Depending on the gravity model, 51 nations (including 11 countries speaking Spanish) have been investigated as sample for the study in the period between 1996-2007. The results of this study show that having common language produces a multiplication factor in global trading which equals to 190% for the trade among nations having common language. Moreover, having common language, within Hispanic countries, could increase the bilateral trading between them by about 300% (which is more than English in in the Anglo-Saxon countries) (Delgado et al., 2014). In the case of Mandarin, there is increasing attention in learning Mandarin Chinese. The reason behind that is due to the assumption of expecting Mandarin to be used as a way of communication in the companies which are planning to communicate with the country (Delgado et al., 2014). By looking at the economic and political status of China, Mandarin Chinese has the possibility to be considered as global language. In addition, there is possibility to substitute English language with Mandarin Chinese in the future and to challenge United States for its economic position in the world (Sunny, 2015). Furthermore, The economy of China is projected to grow and to be on the top of the world by 2030 (even in terms of nominal GDP indicator). On the other hand, Mandarin Chinese is expected to attract more attention and appeal. For example, there is tendency to learn Mandarin in South Korea. This

can happen because Korean businesses always require Mandarin speakers. Statistically, the volume of trading between China and South Korea increases over the last years. For instance, in 1988, 1997 and 2014, the trade volume was about 1.7%, 8.4% and 21.3% respectively. This indicates the growing trade between these two nations which in turn requires learning Mandarin Chinese to foster the trading (Kang, 2017).

In fact, the failure to consider the effect of common language (according to the gravity model) could lead to biased estimation of trading impact of economic integration in economic area such as EU. For example, in EU, there are languages with official status such as English (in each of UK, Ireland and Malta), German (Austria, Germany and Luxembourg), French (France, Belgium and Luxembourg), Dutch (Belgium and Netherlands), Swedish (Sweden and Finland) and Greek (Greece and Cyprus). Therefore, having common language can enhance bilateral trading (Fidrmuc & Fidrmuc, 2016).

Language policy and state's intervention

Economics plays important role in language policy as well as in language planning. In fact, there are two reasons behind that. Firstly, economics facilitates the process of decision making in the issues which are pertinent to language. It assists decision makers to properly understand how does the choice of particular language influence the economic consequences such as the rise of income which is resulted from second language education or learning. Also, it helps to understand how do economic factors affect the choice of language such as international trade's impact on the existence of particular languages and the fall of others (Grin, Sfreddo & Vaillancourt, 2011), (Melitz, 2008). Secondly, economics helps to select, design, implement and evaluate language policy. Moreover, economics differentiates between different language policies using the approach of cost and benefit analysis. However, it is not easy to allocate the financial values to the costs and benefits using this analysis (Zhang- Grenier, 2012). Besides that, the economic approach can guide language planners about the missions they are required to accomplish and how to achieve them. For instance, language policy can determine the manners of allocation of resources. However, economic approach, such as choice theory, can effectively assist in providing the rational way to achieve that. To prove that, each of Grin & Vaillancourt (1999) proposed that, like any policy such as education, health, urban planning or environmental policy, language policy's fiscal expenses can be financed through government's taxation. In addition, Pool (1991) suggested that language planners prefer to choose the language with possible lowest total cost and its allocation should be in concordance with language group's population. Despite the difficulties, it is still worthy effort to explore the distribution of cost in language policy. Furthermore, language policy and planning face many challenges and problems which was examined and explained by many studies in the field of Economic of language. These studies include different related issues such as return rate on the language (Grin, 1995; Gao & Smyth, 2011), the assessment of language policy's impact (Grin & Vaillancourt, 1999) and also language policy's costs and benefits (Vaillancourt, 1996; Vaillancourt & Coche, 2009).

By looking at the literature, researchers usually focused on the allocative rather than distributive matters which are related to language policy choice. Regarding the allocative function, the allocation of resources is emphasized without knowing who is the winner or loser behind choosing the policy. It only ensures that the chosen policy results in gain in total welfare. Therefore, the winners have the possibility to recompense the losers and hence nobody is worse off. On the contrary, the distributive function is considered as a fair function due to its ability to identify the winners and losers and estimate the gains and losses. Furthermore, having incentive-based policy requires, as a condition, to suggest methods of compensations as well as to ensure the compliance from the related parties. After the leading work by Pool (1991), the researchers recently started to concentrate their efforts on the distributive matters such as Van Parijs (2001) and Grin & Vaillancourt (2000). Analysing this function is challenging but very important, especially, due to its connection to interesting issues such as the decision of selecting formal authoritative language in multi-linguistic region like the European Union (Grin, 2003). The goal behind choosing language policy is to adjust the linguistic environment and hence raise the welfare. Accordingly, let's suppose that the linguistic environment can adjust itself without government's intervention. As a result, according to the economic theory, this could lead to what is called market failure which could happen due to the following reasons. Firstly, existence of insufficient information, which mislead the economic agents from taking the right decision. For example, some analysts argue that social parties in non-English speaking countries are unsuccessful to understand that their linguistic environment will be negatively influenced by infringements of English and hence they could fail to maintain the quality of their linguistic environment. Secondly, the existence of high cost of transaction. In fact, adopting one common language could decrease the cost of transaction. For example, linguistic environment such as European Union, with 24 languages, could perform well through using one common language, such as Esperanto, without the need to translate and interpret (Pool, 1996). Thirdly, the presence of non-existent markets. For example, the market of threatened language will no longer exist for next generations to be demanded. This could happen because next generations will extremely care about linguistic diversity. Fourthly, by considering the linguistic environments as a good and arguing that they are resulted from huge number of actors in the market and in different positions of power, that could breach the condition of freedom of entry. Therefore, this results in the existence of imperfect market. Depending on the previous justifications, state's intervention should take place not on the political or human basis but according to the economic theory of welfare (Grin, 2003).

3.2. English, language policy and its impact on the development through Quality Education as well as intercultural competence

In fact, Economics gives increasing attention to the education more than languages regarding the process of economic development (Arcand and Grin 2012). In addition, there are few nations who do not embrace the belief that English is necessary for social and economic development. As a result, they usually adopt language policies in which English can be considered as a subject in the curriculum or as a language

of teaching in the schools or as a tool for development which is used in the private sectors such as businesses (Kennedy, 2011).

With respect to Education aspect, it is necessary to mention here that the language education for economic development purpose should be involved in two things. Firstly, to be engaged in crucial pedagogy in which five important characteristics take place: change-aimed, empirical, pro-autonomy, cooperative, and communicational. Secondly, to include an open, critical, and dynamic approach to broader educational experiment as well as to the daily life (Savage, 1997). Despite that, this approach, for language educators as well as language policy makers, may be exposed to the risk of being restricted to the English language education (Bruthiaux, 2002). Rationally, the economic strategy of the nation should rely on the attraction of foreign capital and also on exports. Therefore, it could be crucial and essential to have compatibility between language education policy and economic strategy's requirements. For example, each of Singapore, Ireland and Puerto Rico have adopted language instruction reform which was resulted from export-oriented industrialization change. Their economic likeness ,as islands having long colonial history, includes the following. Firstly, their industrialization is following export strategy which relies on the attraction of foreign direct investment through tax decline. Secondly, the transition from import substitution to export strategy. Thirdly, English proficiency in these countries is linked with wages increase, the attraction of foreign capital as well as economic growth. Despite that, meeting the requirements of export-oriented industrialization varies from country to another. For instance, in the case of Singapore, the level of compatibility between economic policy and language education policy was high due to the adoption of English as a language of teaching beside studying one of three languages in the country such as Mandarin, Tamil or Malay. In Ireland, the compatibility has been from medium to high (English has been gradually prioritised over Gaelic). In Puerto Rico, the level of policy compatibility was low due to the refusal of teachers union to choose English as a language of instruction (Suárez, 2005). From these examples, there is clear link between language education policies and economic development.

On the other hand, In order to increase the intercultural communication skills of foreign language learners, intercultural communication should be included as a part of language education. In fact, English is considered as medium tool for international communication in places such as multinational companies (Marschan et al., 1997). In addition, according to Honna (2000), English can be defined as multinational as well as multicultural language. With respect to globalization, multicultural societies ,and even societies keeping homogeneous ethnic and national identities, are exposed to the challenge of recognition of diversity inside (Tsuneyoshi, 2004). For example, the belief of Japan to be homogeneous had been necessary tool in safeguarding its current social systems. Despite that, ethnic diversity in Japan is considered as a country's power that could boost the social and economic movement of individuals. This could happen by English language education which can help to benefit from globalization phenomenon in a way which can allow foreigners to move in Japan and therefore the contact with other cultures can be enhanced (The Prime Minister's Commission on Japan's Goals in the 21st Century, 2000).

Furthermore, the acquisition of the language of destination country eases the process of migration, minimizes the cost of migration and also increase the possibility of success for the immigrant in the labour market (Bleakley and Chin, 2004). To be more precise, the implicit rise of emigration rate to nations having similar language varies from 18.8% to 20%. Therefore, linguistic proximity influences the rate of migration. Besides that, widely spoken languages (such as English language) play important factor in the international migration (Adsera and Pytlikova, 2015). On the other hand, migration from one country to another could increase the diversity and variety of languages and cultures and hence innovation on the regional level (Fassio et al., 2018). Therefore, these factors (language education, migration and diversity) are connected and related. Therefore, language education influences migration and hence cultural and linguistic diversity. In relation to economic development, an immigrant is considered as intermediary by which new ideas and capabilities can help in achieving technological progress in the host nation. On the micro level, many studies support the fact that diversity has positive influence on the production capability in the existence of skills which complement each other's (Lazear, 1999). In addition, Hong and Page (2001) investigate the role of heterogeneity in improving the process of problem-solving and find out that heterogeneity with few capabilities can perform better than homogeneous group of people with high capabilities in solving the problems. Furthermore, Ager and Bruckner (2013) investigates the impact of massive immigration to United States in the time between 1870 to 1920. They discovered that the rise of US district's cultural fractionalization increases the output per capita. Whereas cultural polarization has negative impact. Depending on that, by looking at English speaking countries and countries with high English proficiency index, the level of migration and cultural diversity is high and these countries are considered also as strong economies such as North America, Canada, UK, Australia, Singapore, Finland. In addition, this kind of nations has developed policy framework by which cultural diversity is supported and tolerated. For example, in the 1970s, this policy was used and applied by nations such as Australia, Canada, US, UK, Sweden and Netherlands. This policy includes particular steps in fields such as public recognition, Education, law and public material (UNESCO, 2009). Therefore, as previously-explained above, each of language pluralism as well as multilingualism seemed to be as language policy's goals at very late phase (Neustupný ,2006).

3.3. Critiques:

English language is widely spoken worldwide. However, this spread has increased the discussion regarding its social, cultural, political and economic influence on non-English speaking nations (Saraceni, 2010). For example, linguistic imperialism which was developed by Phillipson (1992) in which he claims to investigate the reason behind the wide expansion of English language in the world. To be more clear, linguistic imperialism is equivalent to other meanings such as cultural imperialism, educational and scientific imperialism. Other scholars such as Auerbach (1995) and Pennycook (1995) argue that the wide expansion of English language is due to the wide political, social and economic process which leads to economic inequality. Besides that, scholars such as Skutnab-Kangas (2000) claims that English language

represents a main threat to the development and existence of other languages. In addition, education and media are direct, clear tools for causing language death. This could happen by preferring to learn the dominant language over the local language. Therefore, this could negatively influence the development of other cultures and cultural diversity as well (Johnson, 2009). Furthermore, each of Gerring, Thacker, Lu, and Huang (2015) find out that there is positive linkage between cultural diversity and fertility as well as mortality ratios. However, they discover that it has negative impact on literacy as well as growth. In addition, Alesina and LaFerrara (2005) investigate the impact of ethnic and linguistic diversity (using Greenberg indicator) on the economic development (GDP). They find out that there is a negative association between the two variables. They justify that diversity results in social conflict as well as trust decline which is essential for economic and political stability. With regard to education, Glewwe et al. (2009) discovers that it was useless to use English language books in Kenya's schools. For most students, it is not easy to read them with the ability of understanding. Moreover, only rich students as well as achievers can get some benefit from using these books. In addition, Bruthiaux (2002) argues that the concentration on English language education could result in increasing income gap in the developing economies. Therefore, wealthy individuals can only benefit from learning the language more than poor people.

In fact, the debate regarding the role languages may play in the process of development triggers the curiosity of many researchers for long time. However, researchers' investigations are still open to question and unable to end the debate (Nettle, 2000). Besides that, the rise of uncertainty which is resulted from the literature in which many terms with different meanings have been used such as the usage of the concept fragmentation (which indicate to negative implication) and multilingualism (which has positive implication) (Arcand and Grin, 2013). However, according to the investigation made by Arcand and Grin, 2013, they find out that high ethnolinguistic diversity results in high income per capita and hence it is wise to change the term, fragmentation, into multilingualism as a positive indicator.

With regard to the economic growth, it was discovered that the linkage between English proficiency and economic growth is positive in the case of Asian as well as European nations. However, in the case of Latin and African nations, the evidence is hard and unavailable (Lee, 2012).

4. Conclusion

Depending on the literature, the debate is still open for discussion regarding English and its role in achieving the development. While some scholars scientifically prove the economic value of English language, others criticize it. This, in turn, increases the ambiguity regarding that. In addition, it is not direct and clear how English can influence economic variables such as GDP per capita. Therefore, the evidence is still little. However, English language can be useful in many different channels of development. As reported by Euromonitor, many developing economies recently starts to realize the value of English as a necessary tool for the economic growth of individuals as well as fighting poverty (Pinon-Haydon, 2010).

According to the notion of investment by Peirce (1995), individuals invest in the second language financially and intellectually with the belief that they will expand the range of their resources which in turn can increase their cultural capital value. The return of this investment will provide them with access to the resources which are not able to be reached or achieved. That's why many nations invest in English language Education with the objective to increase their involvement in the world economy and globalization.

With regard to intercultural competence, English helps to enhance intercultural communication between different cultures. As mentioned in the literature, cultural diversity is also a reason behind achieving the economic growth. However, on the contrary, other studies criticize English language and describe it as languages killer and harmful to cultural diversity.

According to the study of Lee (2012), English proficiency positively impact the economic growth of nations. However, he does not reach to clear evidence in the case of Latin and African nations. The justification behind that is owing to a lack of understanding English language's impact on the development. Therefore, decision makers and economists should formulate the most optimal policies and institutions, besides stability and certainty, by which knowledge can be accessible. As a result, Economics of language ,which appear in 1960, play important role as discipline of economics in formulating the policy which is necessary for protecting the linguistic environment and to invest in English language in a way that does not harm the cultural identity as well as linguistic minorities in every particular economy.

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THE UNDERGROUND ECONOMY: COMPONENTS

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Abstract: *The aim of the studies is to understand the notion of underground economy and to make recommendations for improving the fraud management and control systems. We study the underground economy in terms of its components. The basic component without which we cannot talk about fraud is the economical agents with heterogeneous skills, seeking opportunities from the point of view of the disparities between the laws of the Member States of the European Union and the uncertainties of the national law regarding the risky commercial activities of enterprises. Asymmetrical provision between the laws of the Member States of the European Union imply an environment that offers the economical agents the possibility to take advantage of these disparities in order to operate an underground economy. Confronted with these underground economies the States choose financial policies that would determine the economical operators from the black market to respect their financial obligations. Member States are responsible for preventing and resolving irregularities and fraud in the areas managed in a distributed manner. In order to protect the Community's financial interests, Member States are primarily responsible for establishing management and control systems that comply with the requirements of Community law as well as for verifying the efficient operation of systems through audits by designated bodies for the prevention, correcting irregularities or fraud. The analysis has shown that the gradual approach is easier to understand, if the statistical data being analyzed, after the theoretical elements are presented. It is recommended that any classification of types of fraud be made according to the specific circumstances and the environment in which the organizations operate. The responsibilities of the Member States for setting up management and control systems that comply with Community requirements to verify the operational efficiency of these systems through audits by the bodies designated for the prevention, detection and correction of irregularities and fraud will be analyzed. Correlation with statistical data will clarify OLAF's financial recommendations to EU institutions or national authorities that also manage EU customs revenue collection. It will be highlighted that the customs activities of the Member States' are the first line of defense against any attempt to defraud the EU budget. Since its inception, OLAF has been monitoring the actions taken by national judicial authorities following its judicial recommendations to see the outcome of these cases on the ground and to find out whether they have led to allegations or other judicial measures. The key inference of the analysis is the study of the components of the underground economy according to legal provision, politic environment from the different states of the European Union with the purpose of improving the policies for controlling this phenomenon.*

Keywords: *gray economy; informal economy; illicit activities; fraud; tax evasion.*

JEL Classification: A14.

1. Introduction:

The Underground economy has a great number of components which requires the definition and the identification of its characteristics. The shadow economy is known by different names, such as the hidden economy, gray economy, black economy or lack economy, cash economy or informal economy. It manifests itself as a companion of the official economy which under certain circumstances it can replace or to which it is complementary by influencing its evolution.

The Underground economy contains activities which are the results of illicit transactions with goods or services, or of fraud, tax evasion, work without legal forms and money laundry.

2. Fraud

The main element of the underground economy is fraud even if it takes different forms from one state to another. Tax fraud is to fraudulently evade the taxes or to consciously omit to fulfill the tax obligations at the due terms, whether a part of the sum was hidden consciously, or the insolvency was organized or by any illegal means the paying of the taxes was obstructed.

Fraud involves two mandatory components: a material element – the breaking of the tax law and desideratum to elude the taxes.

The intra-community VAT system was often abusively used by the so-called Intra-Community Fraud (MTIC) scheme.

Ghost companies represent a company that doesn't exist from the point of view of the commercial activity, registered in a fictive headquarters, created especially for eluding the paying of taxes (it's generally used for only one deal).

We exemplify a fraudulent scheme in which a supplier from member state no.1, the so-called intermediary company, delivers goods (exempted from the VAT) to the second dealer from state no. 2, the so-called ghost company. This dealer takes advantage from the intra-community delivery which is exempted from paying VAT and resells the same products on the internal market of the state no.2, at very competitive prices. He can offer such prices as although he collects the VAT from his customer, he doesn't pay it to the fiscal authority, and thus increasing his margins for profit. Later the ghost company disappears without a trace and so the collect of VAT becomes impossible in the state where the goods or services were consumed. In another alternative of the scheme, a client of the ghost company (the broker) sells or pretends to sell the goods abroad, sometime to the intermediary company and claims from the fiscal authorities to which the return of the VAT belongs the refund of the VAT paid to the ghost company. The same transaction can be repeated in a circular fashion, this type of fraud being called a "carousel"

Sometimes the goods don't even exist. The fraud scheme can be complicated even more when the ghost company sells the goods to a „buffer" dealers, from which some might be honest, in order to make tracking them even more difficult. The revenue is

transferred to companies registered in tax-heavens (https://www.eca.europa.eu/Lists/ECADocuments/SR15_24/SR_VAT_FRAUD_RO.pdf, p.12-13).

3. Tax Evasion

Along the fraud, tax evasion represents the action of evading the paying to the state the taxable matter. There are two kinds of tax evasion:

- the "licit" or tolerated (intra-legal), this kind of evasion implies the bending of the law by the tax payer, by using an unforeseen combination of laws and thus unregulated by the state. This term mustn't lead to the impression that this kind of phenomenon is permitted by the law. This kind of evasion is only possible due to some deficiencies of the laws.

4. Work Without Legal Forms

Another component of the underground economy is work without legal forms, and represents the work outside or at the edge of the law. The phenomenon consists of the understanding between the employer and the employee to have work relationships without paying (completely or partial) the taxes and social contributions. By working without legal forms, one infringes:

- the social legislation with negative effects for the employer concerning the retirement benefits, work accidents, unemployment benefits, etc.
- the fiscal legislation with negative effects for the state budget;
- work legislation with negative effects for the worker without legal forms (the exploitation of women and children, the duration of the work time);

5. Money Laundering

It is the process by which offenders attempt to hide the real origin of income from criminal activities. Money laundering is the most dangerous component of the underground economy. Through the money laundering process is give an appearance of legality some profits obtained illegally by criminals who, without being compromised, benefit subsequently from the amounts obtained.

(<http://www.onpcsb.ro/pdf/MANUAL%20INSTRUIRE%20-%20ROMANA.pdf>)

This dynamic process of money laundering from crimes takes place in three stages consisting of:

1. the movement of funds
2. hiding traces of money to avoid any kind of investigation
3. making money available to criminals, hiding the occupational and geographical origin of the funds again.

A) The definition of money laundering in Romanian legislation is found in the Law 656/2002 art.1 let. a)

The individuals persons and legal entities targeted by Law 656/2002 are:

- a) banks, branches of foreign banks and credit institutions;
- b) financial institutions;
- c) insurance and reinsurance companies;

- d) economic agents that perform gambling activities, pawnshops, sales and purchases of art objects, metals and precious stones, dealers, tourism, services and any other similar activities involving the putting into circulation of values;
 - e) individual persons and legal entities with grant legal, notary, accounting, financial-banking assistance, in compliance with the legal provisions on professional secrecy
 - f) persons with attributions in the privatization process;
 - g) post offices and legal entities that provide money transmission services, in lei or in foreign currency;
 - h) real estate agents;
 - i) currency exchange offices
 - j) any other individual person or legal entities for acts and deeds committed outside the financial-banking”
- B) The definition of money laundering in European Union legislation can be found in Council Directives 91/308 / EEC of 10 June 1991 and 2001/97 / EC of 4 December 2001.

6. Conclusion

At the proposal of the European Commission, since 2011, several initiatives have been taken to step up the fight against fraud and corruption affecting EU public money.

The Commission's proposal for amending the legal framework of OLAF aims to increasing the efficiency and speed of OLAF investigations, at strengthening procedural guarantees at reinforcing OLAF's cooperation with Member States and improving its governance.

The Communication on the protection of EU financial interests by criminal law and administrative investigations sets out how the Commission intends to protect European taxpayers' money against illegal activities, including threats posed by corruption inside and outside the EU institutions.

The Communication draws attention to possibilities for improving the criminal law framework and procedural tools for investigators and prosecutors, as well as on possible institutional developments (https://ec.europa.eu/anti-fraud/sites/antifraud/files/docs/ec_antifraud_strategy_en.pdf, p.4-5).

As a result of the efforts to fight against fraud, in October 2017, the European Parliament approved the establishment of the "European Prosecutor". Within this institution, which will focus on frauds with European money, prosecutors appointed by Romania will also work.

The establishment of the institution also means minimum penalty limits that EU Member States will have to take over in their own legislation. In cases of conviction, following the investigations of the European Prosecutor, the stolen money will be confiscated.

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INNOVATION AND COMPETITIVENESS

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Abstract: *This study, addresses the topic of industrial innovation in today's competitive markets and reaches the importance of competitiveness indicators. Any entrepreneurial attempt to produce and promote new and up-to-date products should be carried out, following appropriate mathematical calculations, based on the study of competition, through competitiveness indicators. The concept of innovation will be further investigated in terms of its influence, on industrialized environments. Industrial innovation is conditioned by several specific factors, among which we can list: clear business strategies; setting clearly formulated objectives; correct financing within management programs that benefit the entire innovation activity; the existence of a competent team, that can solve the problems that arise during the innovation projects; the existence of a clear and correct procedure for evaluating the results and the work of the people employed; the existence of a competitive climate inside the company and outside of it, etc. Innovation deals primarily with the introduction of new concepts and values. The present study, serves the transition from conceptualizing competition and competitiveness, through competition indicators, to an easier understanding of innovation, as a necessity for future industrial and commercial development. Of course, the stages of a successful innovative-creative plan includes calculations of competitiveness and market studies, all of which form the object of the activity of some institutions dealing with the part of industrial research and development. The part of economic calculations is summarized in this plan, to a set of formulas and calculations of competitive indicators, which need to be drawn up more for the study of innovation, than for the part of entrepreneurial competitiveness. This is why a breakdown between the innovation part and the study part of the competitiveness indicators, can be produced here. It is important to research in this context also the fact that innovation management, as well as technological management, approaches innovation from an organizational point of view. Innovation in the organizational context, is aimed primarily at the renewal of products and technologies, but also the application of organizational management norms. Innovation management is defined as part of performance management. The innovation rules must be formulated in accordance with the competition rules, hence the need to study the competitiveness indicators in relation to the market and the degree of industrialization. Also, in the future, it becomes imperative to regulate innovation management, stressing that innovation and competition must be controlled with the help of the state or some control and evaluation institutions.*

Keywords: *competition; innovation; invention; performance; creative value.*

Classification JEL: *O31; O32; O33; D41; D42.*

1. Introduction

The innovation has a character of permanent change, which aims to adapt variables, determinants in order to achieve the success of competitive strategies. In order to maintain control of these strategies, we must focus on three more important stages during industrial evolution, namely: the period of flexibility, the intermediate period, during which more and more products are used efficiently and the period of maturity or prosperity, governed by the principles of leadership. Most innovation studies consider that innovation should be viewed as a model for designing new products and services. The problem is, however, that innovation in most industrial countries is limited to incremental adjustments, both at the level of products and at the level of production processes. In fact, the competitive analysis shows that companies are, of no help to us, in understanding the concept of innovation. This phenomenon is explained by the fact, that the study on the evolution of companies does not facilitate innovation. Innovation is orienting us towards the future and through an inverse temporal perception process we can discover the new saving idea. In other words, any future is created through innovation, but the innovation process does not attach too much importance to the present, but rather to a metamorphosis of the present into a new present and a renewed future. Innovation must be viewed as a transition from small scales to larger production scales, where different competition rules are respected. Product performance is generated by new ideas that define the future steps for innovation. Economic growth stimulated through innovation and competition, can be measured both qualitatively and quantitatively. Stimulating innovation depends on the degree of maturity of the units and the degree of technological development. George Stigler teaches us about the stages of development of the production process and how to make it responsible. Innovation must meet the needs of technological and material processes. Organizational strategies for products and control change with the standardization of products and production. The common indicators measure the situations in which the economic agents receive aid or financing, in order to obtain new and new products on the market. This approach also includes researching innovation as a process, in cases where this process contributes to the development of new products on the markets. For this reason, it is necessary to identify the criteria for analyzing the performance and competitiveness indicators and to present them at international and national level. In order to investigate the competitiveness on branches in the urban and rural areas of a country, it is necessary to use a series of indicators that are meant to highlight the level of social and economic development. The analysis of the competition indicators is made according to the typology of the competition or the competitive strategies applied according to a norm for collecting the correct data and information from the market. Competitiveness indicators try to measure strengths, weaknesses, opportunities and threats, faced by entrepreneurs. In order to carry out economic analyzes on the future economy, it is necessary to identify indicators for measuring the degree of use of information and communication technologies (ICT), on the market. The present text tries to define and explain, at great length, the

concepts of innovation and creativity, referring to the calculation of competitiveness indicators as well.

2. The concept of innovation.

Innovation is an activity that develops in order to obtain new (or significantly improved) products (goods), launched on the market, this activity means the introduction into the industry of new, improved processes. Industrial innovation is defined as the transfer of new ideas or the adaptation of new concepts, until the final stage of a product, process or service activity. We know four main types of innovations: product innovation; process innovation; organizational innovation and marketing innovation. The concept of innovation develops in parallel with the development of the concept of innovative company.

J. Schumpeter treats innovation as a function of entrepreneurial action, which is obtained through several "new combinations" of existing resources. Schumpeter gives us this acceptance of innovation in his work "The Theory of Economic Development" (1934).

In the specialty literature, a distinction is made between the concept of innovation and that of invention.

F. Malerba (1977) defines the invention as a new idea or scientific breakthrough, a technological novelty, while the innovation is aimed at a marketable application of an invention, this being due to the integration of the invention in the socio-economic practice.

The Oslo Handbook (2005) defines innovation as an activity that results in new or qualitatively improved products, goods and services, through processes that use new methods of business management and marketing.

According to the Frascati Manual (OECD, 2002), technological innovations include new or technologically significant products and processes and notably technological innovation.

K. Pavitt (1987, p.9) notes about technological innovation: "most technologies are complex and are formed by cumulative developments.

Law no. 324/2003 (Romanian Parliament), defines innovation as being oriented towards the generation, assimilation and capitalization of results, research and development from the economic and social sphere.

R. Vernon (1966) finds that industrial development is implemented through product innovation, in the context of competitive markets. The innovative process together with the technical progress constitute springs for overcoming the impediments intervened at the product level, caused by the moral wear and tear.

For the success of the innovative approach, the entrepreneurs must have an absorptive capacity, of recognition, assimilation and exploitation of the new information, essential to the technological transfer and to be folded on the R&D expenses. (Cohen, Levinthal 1990).

Innovation and competition can be investigated theoretically and empirically through three levels of competitiveness: macroeconomic level, i.e. national competition; microeconomic level, that is, the competitive process at the enterprise level and the commercial level from the point of view of international trade statistics, etc.

Competition has many forms and can be: relative, sustainable, prospective, integrable and comparable, aggregate, dynamic, corrective and irreplaceable to no other notion and so on.

3. Innovation and creativity

The concept of innovation is related to the concept of creativity
Creativity stimulates innovation and gives it new meanings.

The creative process must take place in a quiet educational environment based on a good circulation of information. Creativity can be defined as a constitutive, structural element of human activity, represented by inventive actions, not learned, able to generate new experiences and knowledge. It can also be defined as a global process of technological and commercial creativity, or as a transfer of new ideas or new concepts, to the final stage of a product, process or service activity, accepted on the market. It represents the ability to identify new and new links between elements (goals, events, laws) and different laws. Innovation and creativity are thus seen as a function of management.

The creative process has several stages: good circulation of information, knowledge of the market and marketing, maintaining intelligent links with the scientific community, accepting new ideas, performing efficient teamwork, motivating employees and improving the training process. In the industry, innovation and creativity are conditioned by a number of factors, including: the efficiency of competitive strategies, the formulation of clear objectives, obtaining profitable sources of financing, teamwork with performing teams, improving organizational management and organizational procedures and stimulating the competitive climate.

4. The typology of innovation

Innovation is present everywhere, but new products and technologies are not fully revealed. In everyday life, innovation is associated with technical progress. The innovation processes have been extended to the society level, these being oriented towards the introduction of new strategies, concepts, ideas and organizations that address the social needs. Social innovation is the associated expression of a change, which aims to increase the quality of life and solving social problems.

Innovation can take many forms: product innovation, process innovation, marketing innovation, organizational innovation, incremental innovation, radical innovation, closed innovation and opened innovation.

In order to be successful, innovation must integrate general entrepreneurial strategies and successfully implement change management.

There are several types of innovative strategies: proactive strategies, characterized by the character of radical innovation, which gives companies priority in the market and competitive advantage; active strategies, which aim to efficiently capitalize on existing technologies; reactive strategies, used as imitative strategies of strategies formulated by the leading companies, which are, for example, pursuing the implementation of new ways of communication with consumers, or of delivery and

distribution of new products and passive strategies, which are used by companies expecting market changes.

Table 1. Models of evaluation of innovation systems

Model	Criteria	Evaluation grid
Diamond	Strategy, Processes, organization, links, learning	1-7 levels
Innovation Management Health Check	Vision and strategy of innovation, resources, organizational structure	10 levels
Open Innovation, Maturity Framework	Climate for innovation capacity of partnerships, internal processes	5 levels
Bain Innovation Assessment	Strategy, organization, generation and development of ideas	4 levels

Source: Innovation management, Popescu (2016), webbut.unitbv.ro › Management › Popescu_Management

The indicators of competition on global markets are divided into: macroeconomic indicators (levels and trends); indicators from the sphere of international trade, they express the degree of country integration in the circuits of the world economy and evaluate the level of protectionism or openness of an economy, the components of the current account (exports, imports, transfers), the components of the capital account (foreign direct investment, portfolio and long-term loans); demographic system and labor market indicators, which are oriented towards the supply of human resources, qualifying the force of work and qualitative value indicators (Pelinescu 2006, Anghelache 2017). The competitiveness indicators are over 200 in number, of which, 95 are considered basic indicators (Annual Competitiveness Report, 2001).

Many economic reports focus on twelve pillars of competitiveness.

5. Competitiveness at national level

Competition is a concept that encompasses notions from different environments, but it has no clear, reliable representation and no unanimously accepted definition. Competitiveness can be interpreted with great freedom, depending on factors outside the entrepreneurial activities, but it also depends on factors related to the intrinsic nature of the economic activity. Michael Porter supports the idea that globalization, production and transactions need to be regulated so that every small business can create its competitive advantage.

It defines three major stages of competitive development at national level: the stage of development determined by the factors of production; the stage of development determined by investments and the stage of development determined by the level of

wealth. Among, the most important national economic factors of competitiveness are: local resources; natural resources; labor force; infrastructure; technological and financial resources; the size and structure of the internal demand; the technological level; the efficiency of the subassembly and sub-suppliers industry; industrial structure and competition. Local resources are also divided into: human resources; physical resources; scientific resources; technology; financial and national infrastructure etc. In Romania, most of the competitive structures are oligopolistic, with the objective of conquering new markets for the following reasons: there are conflicts and rivalries that require innovation to obtain the competitive advantage; there are oligopolistic structures that create advantages for most industrial activities through quality, prices and long-term services; the competitive environment is created and recreated through competition with competitors from abroad. The action of the government authorities is another external factor that determines the creation of the competitive advantage of the company. The state can intervene to stimulate competition and innovation through: subsidies; industrial policies; modeling of internal demand through standards and regulations; purchase of advanced products and technologies, such as: IT equipment, telecommunications, computer networks and army tools, etc.

6. Measuring the international competitiveness of economies

The international competitiveness of the economies is measured by a series of indicators that are grouped according to the following criteria: according to the time horizon in: short-term indicators and long-term indicators and depending on the level at which the competitiveness measurement is intended in: indicators microeconomics and macroeconomic indicators. The most used indicators of international competitiveness are

- macroeconomic / short-term: total productivity of the production factors (TFP); real GDP growth rate, real GDP / capital, real personal income; effective real exchange rate; termsexchange and purchasing power parity; international trade, global export quotas, market share analysis; capital market; real capital return, Tobin's Q ratio; external balances, current account balance; foreign direct investment balance; domestic balances; employment rate and inflation rate etc.

- macroeconomic / long-term: real long-term exchange rate; long-term interest rate; long-term inflation rate; long-term standard of living; human development index (HDI)

- microeconomic short-term and long termn: productivity, prices and costs; unit costs with intensive branch work, cost indices and relative prices; exports and related market shares; comparative advantage revealed; foreign direct investment (FDI); technology and innovation; sustainable growth profits, social capital and so on. (Mitschke 2008). International competition is determined by a number of important factors: the size of the international competitiveness of the countries; the attractiveness of the business environment; the international competitiveness of the resident companies; the behavior of the companies and the governmental action, etc.

7. Calculation of competitiveness indicators

This may be an important indicator of the reality of the competition, which is defined in detail by the report prepared by the internal auditors. (Jula 2000, Krugman 1994, Porter 1990).

$$RER = E * P / P'$$

E – represents the nominal exchange rate for the country's currency
P and P 'are the expression of the external and internal prices

When the market is competitive, trade is free, unrestricted by quotas and customs duties, transport costs are low (they tend to 0), and domestic and foreign prices are equal (Single Price Law).

Ecuation can become:

$$P = E * P'$$

$$\text{Or } Rer = e + p - p'$$

The nominal effective exchange rate $NEER = \prod_{i \in \text{Trade}} (R_{xi} / R_{X_Ro})$, at wi

R_{X_Ro} – nominal exchange of rate of Ron to \$

R_{xi} – the nominal exchange rate of the country that refers to the 16 trading partners of Romania against \$

$PPI_{Row_NC} = \prod_{i=1}^n (PPI_i)$ at wi

PPI-industrial production price index

$REER = PPI / PPI_{Row}$,

$REER = PPI / PPI_{Row}$,

$PIB/P = PIB/E * E / P_{Wa} * P_{Wa} / P$ (1) where: P = total population, E = employed population, P_{Wa} = working age population, PIB/P = income/capita, PIB/E = work productivity, E/P_{Wa} = unemployed rate

P_{Wa}/P = age distribution of the population

$PIB/P = PIB_a / E_a * E_a / P + PIB_i / E_i * E_i / P + PIB_s / E_s * E_s / P$ (2) a = agriculture, i = industry,

s = services

The indicators of competition on global markets are divided into: macroeconomic indicators (levels and trends); indicators from the sphere of international exchanges; indicators of the demographic system and of the labor market, these being oriented towards the supply of human resources, qualifying the force of work, qualitative value indicators, quality level, degree of education, complexity of the system of individual social values, preferences, motivations; indicators of the efficiency of government policies (macroeconomic management). The competitiveness indicators are over 200 in number, of which 95 are considered as basic indicators (Annual Competitiveness Report, 2001).

Michael Porter divides the modalities of evaluation of the economic competitiveness and productivity in two important areas: sophisticated strategies and actions of the companies and the quality of the business environment. Porter's competition model is determined by five key elements: new potentials entering the sector, suppliers, customers, substitute products and competitors in the sector. In Romania,

competitiveness indicators need to be addressed at the national level through specific indicators that can reveal different aspects under investigation (Pelinescu 2006, Mereuță, Chilian 2005, Vincze 2003);

Table 2. The twelve pillars of competitiveness

Competitiveness	The efficiency of goods market
	Higher education
	Primary health and education
	Macroeconomic situation
	Infrastructure
	Institutions
	The size of market
	Technical endowment
	Innovation
	Development of the financial market
	Labor market efficiency
	The sophistication of the business environment

Source: Methodology and computation of the global competitiveness, 2017-2018
[www3.weforum.org > docs > GCR, 2017-2018](http://www3.weforum.org/docs/GCR/2017-2018)

8. Conclusion

Innovation is an essential process for economic growth and for the survival of the new companies. At organizational level, innovation is addressed to new products, technologies, structures, management methods or business models.

The innovation process must be conceived in relation to the research-development activities, being part of the trinome Research-Development-Innovation and mathematical calculations of competitiveness.

The future of technology and information is generated by innovation and creativity and it's construction, will be possible, through in-depth studies and research on the indicators of competitiveness.

Innovation management will become important for economic development, and the managerial approach will have to contain several processes: management processes, basic processes and support processes. In order to establish a revolutionary innovation management, we must have a strong leadership base and focus the management of the organization on: the computerization process; the data collection process; the development of entrepreneurial processes and the development of individual creativity. Entrepreneurs who will use innovative strategies to carry out their own successful activities, will integrate new competitive and innovative models, which take part of the innovation management system.

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THE EU COMPETITION POLICY – A BRIEF HISTORY IN BETWEEN NEO-FUNCTIONALISM, INTERGOVERNMENTALISM AND MULTI-LEVEL GOVERNANCE

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Abstract: *The competition policy represents one of the most important pillars of cooperation between EU Member States, it influenced the design of the European Single Market and it facilitates integration. Even though it shapes the distribution of capital and the investments all over the EU space, the policy is not well-known and even less understood, as it has been built through a complex process, the aim of this paper being to analyse its sinusoidal evolution. In order to better follow its goals, the present article is trying to frame each step of the evolution in one of the following theories of economic integration: neo-functionalism, intergovernmentalism or multi-level governance.*

Keywords: *European Union; Competition Policy; Integration Theories; Neo-functionalism; Intergovernmentalism; Multi-Level Governance; Single Market.*

JEL Classification: *B27; B55; F13; J58; L44.*

1. About competition policy

Competition policy has become a prominent issue in the last decades. The concept of a competition policy is the starting point of the entire European Union. It lies of efforts to create a common market and it is the result of strong cooperation between stakeholders (McGowan L., Wilks S., 1995). Competition policy is also one of the least understood of all the European policies. It requires a multidisciplinary perspective to understand how this complicated European-level policy works. (Cini M., McGowan L., 1998).

In 1957, in the building process of the European Economic Community, the competition policy turned out to be one of the most important pillars of "a system ensuring that competition in the common market is not distorted" (The Treaty of Rome, 1957).

Nowadays, the policy is designed to assure monitoring businesses' agreements by the authorities, misuse of market dominant position, mergers, procurements and state aids. Besides this, the Commission is entitled to monitor cooperation between Member States in order to ensure unified implementation of European law regarding competition.

We can have a better understanding of competition policy by correlating its every stage with the European integration theories. The integrationist phenomenon has a dynamic nature and it gets economic forms (free trade area, custom union, common market, economic and monetary union) as well as social and political forms

(governmental structures, authorities, transfer of competences, sovereignty). In order to have a better representation, we will approach theories as intergovernmentalism, neo-functionalism and multi-level governance.

2. European integration theories

2.1. Neo-functionalism

Ernst B. Haas (American political scientist, professor at Columbia University) has created in 1958 the concept named neo-functionalism, which explains how integration from a small sector can turn into an impulse to a deeper integration, inevitable in other sectors through the spillover effect. Once started, the integration process becomes a single-way road, despite all the barriers that occur.

The author analyses and resumes the principles used by Jean Monnet regarding European integration, proving the strategic feature of the theory, as a *modus operandi* for EU.

Haas uses the European experience a case study for extracting working assumptions. Building on the Treaty of Paris (1951) to the Treaty of Rome (1957) he demonstrates how the establishment of European Coal and Steel Community (ECSC) and its institutions generated a close cooperation in those economic sectors and changed the trust, loyalty and expectations from national level to a supranational one. There is a positive feedback regarding the solutions generated by the supranational entity, meant to allocate more resources and change policies. This led to two new Communities, following the idea that the initial integrative goals can be fully achieved only if the supranational decision-making capacity extends to new areas: The European Economic Community which initiates the custom union and European Atomic Energy Community (Euratom).

As Alec Stone Sweet (2012) highlights, even the dream of the founding parents (Jean Monnet, Robert Schumab, Altiero Spinelli) was to create a structure like the United States of Europe, in 1957 the member states decided to establish an international organization with a well-defined purpose and authority and six members.

2.2. Intergovernmentalism

The main feature of intergovernmentalism is that it assigns to the states, more specific to national governments and policy-makers the main role in the integration process. The theoretician of this model, Stanley Hoffman (1966), pointed out that even though the European states were interested in cooperating more in the "low politics" fields (such as agriculture and commerce), they still act like independent entities (sovereign national states) with individual interests. The intergovernmentalist model, then the liberal intergovernmentalist, as Andrew Moravcsik (1993, 2005) developed it, states that at the beginning, the main goal of the European Community was to avoid, by all means, another war. It combines three elements: liberal theory of forming national preferences, interstates negotiations and states rational behaviour hypothesis.

The General Charles de Gaulle claimed as a priority the realization of a political European union, which can offer the context of a bigger economic integration (not

expansion). Convinced by the fact that structural institutional approach in the economic field should not influence the political cooperation, in September 1960 he proposed, as the president of France, a intergovernmentalist plan of reorganizing Europe and its internal and external economic policies. Based on this, the Fouchet plan has been later built.

In 1966, the European Community was about to come at its third phase of development, when the qualified majority vote was about to become the decision-making method in the Council of Ministers. Charles de Gaulle decides in July 1965 to boycott these meetings and to create the “empty chair” crisis, which peaked with the “Luxemburg compromise”.

According to Teasdale (2015), the Gaullist intergovernmental concerns came back on the European agenda in the mid '80s, when the neo-functional communitarian method proves to be inefficient in sensitive fields such as External Politics and Common Security (Common Foreign and Security Policy/CFSP) or Justice and Internal Affairs. Back then, the intergovernmental solutions through the Maastricht Treaty (1992) have been established.

Once the Single European Act and the Maastricht Treaty have been released, Andrew Moravcsik refines the theoretic frame, adapting to the context of the '90s. Thus, the liberal intergovernmentalism concept appeared and it emphasizes domestic interest (rather than national). The most powerful interest groups determine the decisions on national policies established by the government; the government participates on the European intergovernmental meetings where they are further representing the interests and negotiates for convenient European policies. In order to assure the enforcement of the new policies, the governments transfer part of the prerogatives to supranational institutions.

2.3. Multi-level Governance

Gary Marks, Liesbet Hooghe and Kermit Blank (1996, 2001a, 2001b) notice that the Maastricht Treaty is the expression of a new phenomenon. National states disperse their authority at other higher decision-making levels (European Commission, European Parliament, European Court of Justice), inferior (regional/local authorities) or laterally (public or private networks).

This new framework acknowledges the important role played by national governments, but suggests the evolution to a decision-making process which is not necessary attributed to a specific level (national or European). The real integration is achieved at intergovernmental level in the European Council or Council of Ministers by unanimity or by qualified majority voting.

In addition, the national governments have a reduced influence on European institutions. As Trinski (2004) notices, the loss of the governments control is generated by the increasing number of member states, widening supranational competence and creating new working groups.

3. The reform process

Since its launch, the competition policy has seen various stages of reform that have succeeded or, on the contrary, resulted in failures, with the key evolutionary moments being presented in the following.

As Warlouzet (2010) proves, the status-quo from the inter-war era meant economic barriers in trade with coal, concentration of coal/steel-producing undertakings, cartels and price differences between Germany and France.

The willing to change this context, to make the economy more efficient and also to avoid another war generated a common competition policy and the European Coal and Steel Community (ECSC).

With the Treaty of Rome (1957), the competition policy took a neo-functional turn. Until this point it had limits and it was not one of the priorities for the EU agenda (as common market, agriculture, etc.) mostly because its poor implementation.

In 1962, the Council adopted, on a proposal from the Commission, Regulation No. 17/1962, a paper with 24 articles which elaborates, on the German legislative model, the first sectoral policy which is authentically supranational (Drăgan, 2005). This step has reduced the role of the national states as the Commission manages the application of the policy. Warlouzet (2010) believes that the Directorate General for Competition (DG IV) made a mistake by centralizing information through notifications (even though they were a few). However, the regulation regarding the notifications was ambiguous.

Under pressure from the French Government, it has been adopted another neo-functional document. The Regulation No. 153/1962 simplified the procedure but it did not solve the problem: the system has been crowded with notifications and the DG IV stopped working.

The first stage of evolution ended in 1968, with custom union and the common custom tariff in the relation with third countries. As Gabriela Drăgan (2005) mentions, the period was defined by actions meant to inhibit agreements between businesses and cartels. The policy did not give adequate priority to monopoly and the regulation of state aid. The aid has been seen as a way of economic adjustment, combating unemployment and supporting declining sectors, while it could be also misused into unfair competition.

Two key moments are in 1971, when the German company of copyright management (GEMA) is blamed of power dominant abuse for refusing the admission of nationals from other member states and also when in the Deutsche Grammophon case the Court of Justice confirms the importance of parallel imports and sets up the principle of rights exhaustion.

This context created a favourable perspective over DG IV priorities, as it started the fight against dominant position abuse for eradicating the competition. In '70s it has been approached another subject: the control system for the fusions using as a base the Article 86 of the Treaty of Rome, regarding the establishment of the European Economic Community (EEC). Also, it has been clarified the fact that the dominant position is not illegal by its simple presence, but when it is overly used. It is an abuse of dominant position when the competitor consolidates this position as other are able

to still exist on the market only in reliance with the first. The specific regulation has been approved in 1989.

Between 1974-1989, the neo-functionalists' results are being preserved but because of the preferences for intergovernmentalism, the policies are not developed and there is no use of instruments at the disposal of the Commission, according to its intentions. Even though the oil crisis in 1973 seemed to sustain the evolution of the policies regarding competition, the member states could not find a common perspective and the European Council was preoccupied with the compatibility of the fusions' regulation with the other EU policies (especially with the industrial policy - regarding the protection of the European companies and assuring the external competitiveness).

The Single European Act from 1986 did not change or add nothing new to the existing rules regarding competition, but it clearly states the institutional reforming and the temporal dimension for the realization of the Single Market, with strong associate objectives connected to competition, which enhanced the policy as a priority instrument in increasing the integration. The Commission shifted its interest to economic fusions, and as an element of novelty, over state aides and liberalisation of the economic sectors of state supported activities (Drăgan, 2005).

After long debates, the Community made a new neo-functionalist step, through adopting the Council Regulation no. 4064 / 21 December 1989, regarding the control of economic concentrations between companies (fusions and acquisitions), meaning fusions of companies or takeover the control exclusively over a company (including a brand new formed one).

Through Commission Regulation no. 477 / 1 March 1998, more rigid norms come out in regard to the notification transmission, their form, deadlines, the possibility to interfere or make observations to states members and third parties, and also the confidentiality of the information.

After three Commission's decisions forbidding concentrations have been cancelled by the Court, the evolution of the policies was interrupted in 2002. Thus, in order to improve the quality and objectivity of the decisions taken by the Commission, there has been established a team of in-depth economic analyze (put together by economists) coordinated by a chief economist (new formed function).

The 1989 Regulation will know a significant modification through the European Council no. 139/ 20 January 2004 regarding the control over economic concentrations between associations and Commission Regulation no. 802/ 21 April 2004 of applying the European Council no. 139/ 20 January 2004 regarding the control over economic concentrations between enterprises, documents which open the road to multi-level governance. National authorities in the competition field are allowed to apply the European interdictions and exceptions, right reserved up until then to the Commission, which relieved from a great volume of cases, will concentrate only over the communitarian ones who are the closest ones to the legal frame. Community legislation in the field of competitiveness prevails the national one. Before taking a decision, the national authorities must consult the Commission. In the case of vertical accords which can restrain the competition, after the Council Regulation no. 19 / 1965, presented before through the Commission Regulation no. 330 / 20 April 2010 (known as the category exception Regulation) shows the term of

“vertical restrictions” (competition restrictions over the buyer or seller) and offers the possibility of exception from applying the article 101 (1) from the Treaty regarding the functioning of the European Union for vertical accord, which satisfies certain requirements. In the case of unapplied Regulation 330 / 2010, the Commission applies general norms of evaluation the vertical restrictions, analysing through comparison the real situation or a possible one in the future, in case of an existing restriction with the situation in which the restriction would not have been existed.

After the Council Regulation no. 2821 / 1971, the situation of horizontal cooperation accords comes back into Commission’s attention in 2004. Commission’s Regulation no. 772 / 7 April 2004 states the exception from applying article 81 (1) for those technology transfer accords settled between two organisations, which authorise forging the contractual products, until the intellectual property right over the technology license does not expire, does not become lapsed and/or declared null, and in the case of know-how, while this remains a secret(excepting when the know-how is made public after an action over the licensed, exception is made during the accord).

The European Parliament and Council through their directive no. 104 / 26 November 2014 adopted norms that allow companies who are victims of the antitrust cartel behaviour to ask for integral compensation as a result of some damage or earnings unrealised, which can generate an increase in efficiency over the clemency program and rising the requests from the cartels, based on this.

After the tariffs setbacks in the way of realizing a single market have been removed (1 July 1968), the compatibility of state aids with common market attract in somehow the attention of the Commission. The goals of the policy were mainly focused on removing any distortions of the competition, but they also approached European competitiveness and social cohesion. National views and misunderstandings between states regarding this topic have powered the intergovernmentalism, the Council not being receptive to Commission proposals.

Chronological speaking, before establishing more clear rules regarding the state aids, the Council proved first to be interested of the exceptions from applying the art. 92 (2) from the Treaty of Rome, the clarification of the content of article 92 regarding the situation when some state aids are considered compatible with the common market. Article 92 (2) established clearly the compatibility of state aides with social features designed to individual consumer (just the ones who do not discriminate by the origin of the products) and the ones necessary after of natural calamity or remarkable events

The Commission has been practically invited through their own regulations to except from the obligation of notifying (in certain limits regarding the purpose, the recipient) and declare compatible with the market the giving state aids:

- aids destined to train employees;
- aids towards SME's;
- aids for environmental protection;
- aids designed to promote the workforce;
- aids for research development;
- regional aids.

Additional to aids given in the framework of a scheme and ad-hoc can also exist the minimis aids disposed to SME's. Those are viewed as an aid for functioning and developing the market, being exception from notification those aids received by an organisation cumulatively, over a determined period, which do not exceed the minimum quantum.

The Council Regulation no. 169 from 1999 is exclusively neo-functionalist and it states the important role of the Commission, any project of granting a state aid must be notified by the member states to the Commission (including the existing aid schemes), and it would have to declare their response in maximum two months regarding the application, through a decision.

In the case in which a state offered an illegal aid or the state aid is overly accessed, the initial competition context must be re-established and the state can become the subject of a decision in offering information, suspension or recovery.

As there have been allocated important resources to financial aids in order to streamline these expenses, but also to create a better connexion between the Cohesion policy and the Competition one, the Commission launched an initiative of modernising the state aids system (State Aid Modernisation – SAM). The new general principles in regard to the state aids became: obtaining the growing under the conditions of some constraints over the public budget, concentration on the cases with the largest potential of altering the competition and simplifying the procedures and rules for accomplishing a more efficient control.

4. Conclusions

The Competition Policy has undergone a sinusoidal evolution, the present article trying to frame the stage progress in one of the following theories of economic integration: neo-functionalism, intergovernmentalism or multi-level governance.

European Union can respond to the global environment challenges, variance of the states and reference parameters of different markets, with a policy in the field of competition designed to made possible an environment in which the competition between economic agents is loyal, resources are allocated as efficient as possible, investments are stimulated and thus the economic growth is sustained and the interventions of the legislator are planned given this purpose.

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THE NEXUS BETWEEN MIGRATION, INNOVATION AND ECONOMIC DEVELOPMENT IN EU-28

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Abstract: *In an increasingly interconnected world, international migration became a topic of great interest from economic, social, cultural and political point of view, with complex effects on both origin and destination country. The international labour force mobility generates both opportunities and challenges that any nation should take into consideration, in order to obtain maximum of benefits, as well as mitigating the negative effects that can arise from the migration movements. Therefore, migration is a process that needs to be managed and not a problem that needs to be solved. Highly qualified immigrants boost innovation output, their cultural diversity may produce positive spill-overs, especially in host countries and represent an important channel for transferring technology from destination countries back to origin countries. This research investigates the extent to which immigration along with financial support in R&D and investments in higher education influence innovation and eventually, economic development, for 104 NUTS 1 macro-regions in the EU, over the period 2003 to 2012. The study is based on the development of econometric models on panel data, using a set of indicators specific to the process of immigration, innovation and economic development. The research uses classical models with fixed effects (non-spatial models), measures the global and local spatial autocorrelation of the data set and at last spatial autocorrelation models are generated. The econometric estimations of the international migration impact on intellectual assets (measured by the number of patents) highlight a positive nexus, strengthened when taking into account different factorial combinations related to the economic dimension, such as: financial support in research and development (especially in the business sector and in the whole sector), investment in tertiary education, personnel employed in knowledge intensive sectors, as well as the share of scientists and engineers in population. In order to boost knowledge creation and per capita GDP, EU should not only attract scientists and engineers migrants, but also provide further financial support in research and development.*

Keywords: *international migration; innovation; economic development; EU-28.*

JEL Classification: *F22; O31; O11.*

1. Introduction

In the current framework of globalization era, migration represents a topic of great interest from economic, social, cultural and political point of view, requiring in-depth and continuously research at regional, national and global level. Migration is not a new phenomenon it has existed since ancient times, undergoing various changes

and taking different forms. International labour mobility influences the innovation and the development of an economy, generating both opportunities and challenges that any nation should take into consideration, in order to obtain maximum of benefits, as well as mitigating the negative effects that can arise from the migration movements. In the new age dominated by mass migration, with plenty of highly qualified individuals, the migration-innovation nexus has become a topical issue in several related disciplines and fields (Lissoni, 2016). Over the years, lots of researchers studied and gauged the impact of migration movements on innovation output, both in origin and destination country. In today's increasingly interconnected world, modern transport offers the opportunity for people to move faster, quicker and cheaper to different parts of the world, in search for work places, opportunities, higher education and a better quality of life. Also, wars, poverty and hard conditions of living force people to abandon their homes, their countries, seeking abroad a better future. When international migration is sustained by appropriate policies, it can lead to inclusive and sustainable economic growth and development, both in origin and host countries (United Nations, 2017).

2. Literature Review

2.1. Effects on destination countries

In an empirical research, Niebuhr (2010) highlights that the diversity of knowledge and capabilities of labour force from different cultural backgrounds boost regional innovation (generate new ideas, processes and products). The downsides of diversity, such as costs caused, for instance, by communication barriers are outweighed by the benefits induced in regional R&D sectors.

In a similar way, Bove and Elia (2017) emphasise that cultural heterogeneity have a more consistent impact on GDP per capita in developing countries, in comparison with the developed ones.

Ozgen, Nijkamp & Poot (2011) found that the diversity of migrants intensify knowledge formation, spill-overs, improves entrepreneurship and leads to economic growth. Although an increasing share of foreigners in the population of a region does not guarantee a higher level of innovativeness, immigrants from different cultural backgrounds and with higher education record a larger number of patent applications.

Ferrucci and Lissoni (2019) reveal that more diverse teams spur creativity and produce patents of higher quality. Their research also suggests that mixed local-foreign inventors teams with different nationalities always outperform both local ones and same-nation foreign teams.

Hunt and Gauthier-Loiselle (2009) gauge the impact of highly qualified immigrants on patenting per capita. A college graduate immigrant contributes at least twice as much to patenting, in comparison with a native counterpart. Also, some immigrants may indirectly enhance innovation by providing complementary skills and knowledge to native workers (e.g. positive spill-overs on fellow researchers).

In U.S. skilled immigration may support rising aggregate real incomes in the long run and have a significant and positive influence on patenting, but smaller in comparison

to foreign graduate students. Also, the skills of foreign workers could be complementary to natives (Chellaraj, Maskus, and Mattoo, 2008).

In European recipient countries, highly-skilled foreigners contribute to knowledge creation, measured by the number of patents and by the number of citations to published articles (Bosetti, Cattaneo and Verdolini, 2015).

Fassio, Montobbio and Venturini (2019) emphasises the positive impact of skilled migration on innovation, in 16 European industries. The intensity is stronger in industries with low levels of over-education, high levels of FDIs and openness to trade and also, in industries with ethnic diversity. The diversity of skilled immigrants (at firm level) provides complementary skills to natives and boosts the knowledge spill-overs, and thus enhances innovation.

When it comes to regional competitiveness, especially on innovation, entrepreneurship and productivity, Poot (2007) agrees that immigration and population ageing have a substantial impact. Empirical evidence emphasises that population ageing reduces regional competitiveness, in contrast to highly skilled immigration, which foster innovation. Immigrants may be more creative, generate new ideas, set up new businesses and may be less risk averse in comparison to indigenous peers. Due to the fact that migrants are younger, on average, they adjust easily to economic changes. On the other hand, diversity can create a less cohesive society, which may mitigate trustworthiness and competitiveness.

2.2. Effects on origin countries

If for host countries the immigration of highly-skilled labour force represent "brain gain", for the origin countries the emigration of high-skilled individuals represents a loss of the most talented workers. However, it cannot be denied that migrants are an important channel for transferring technology from destination countries back to origin countries. This can be through knowledge they impart directly, the significant remittances they send home (financial support) and investments they make in origin countries, like setting up new enterprises (Gelb and Krishnan, 2018).

Also, the knowledge acquired abroad by immigrants can be transferred back to the origin country and be exploited under sound Intellectual Property Rights institutions and thus domestic innovation can be enhanced (Naghavi and Strozzi, 2015).

3. Research Methodology

3.1. Objectives and research stages

The general purpose of the research is to evaluate the relationship between migration, innovation and regional economic development for 104 macro regions (NUTS 1 level) in the EU-28, between 2003 and 2012. The study focuses on how immigration along with financial support in R&D and investments in education influence the innovation output in different regions of a country. The study is based on the development of econometric models on panel data, using a set of indicators specific to the process of immigration, innovation and economic development.

In the first place, the research uses classical models with fixed effects (non-spatial models), with the dependent variable = the number of patents. The next step is to measure the global and local spatial autocorrelation of the data set, by applying

Moran's I Index and Geary's C Index. If the spatial dependence is validated, the last step is to generate models that include spatial elements, with the dependent variable (innovation) and different combinations of the independent variables.

The set of indicators emphasize the economic dimension, investment in human and fix capital, demographic dimension, investment in R&D, labour market dimension, innovation output and migration stocks for the 104 EU macro-regions.

The data source is represented by Eurostat - European Commission and OECD Statistics - Organization for Economic Co-operation and Development and data processing is computed using STATA 14 econometric package.

3.2. Regression model, endogenous and exogenous variables

For a more accurate estimation of the parameters, the general form of the regression model specification uses the natural logarithm of the variables. It takes the form of a double-logarithmic model and has the following general form:

$$\ln(Nr_patents) = \beta_0 + \beta_1 \ln(GDP_cap) + \beta_2 \ln(Edu_tert) + \beta_3 \ln(Edu_sec) + \beta_4 \ln(Pop_dens) + \beta_5 \ln(GERD) + \beta_6 \ln(Empl_tech) + \beta_7 \ln(Immigr) + \varepsilon$$

The endogenous variable is the number of patents and the exogenous variables are GDP per capita (pps), tertiary and secondary education (%), population density (inhabitant/km²), intramural R&D expenditure in total sectors (%GDP), employment in technology and knowledge intensive sectors (%) and immigration (stock).

3.3. Descriptive statistics and the correlation matrix

Descriptive statistics in table 1 is a summary statistics of some of the indicators used to evaluate the immigration-innovation nexus. It presents the average value, the standard deviation, the minimum and maximum value of variables analysed.

Table 1: Descriptive statistics, 2003-2012

Variable	Mean	Std. Dev.	Min	Max
patents_epo	529.0979	971.9792	0.1	6334.67
inov_intens	92.84096	108.0418	0.18	589.89
immigr	35985.25	36533.92	190.45	346422.3
gdp_eur_inhab	23727.05	12281.66	1900	63100
gdp_pps_inhab	23697.19	10224.38	3385.4	69300
gfkf	21.72029	5.686458	2.39	50.94
edu_tert	24.57353	7.982733	6.1	52.7
edu_sec	47.01163	15.03995	6.9	76.9
pop_dens	378.7491	903.8705	5.9	7194.2
gerd_gdp	1.441606	0.9464839	0.11	4.96
berd_gdp	0.9170288	0.8362437	0.01	4.36
empl	64.10067	7.129177	43.2	82.5
unempl	9.185769	4.785592	2.9	33.3
rd_pers_tot	33800.75	30304.64	32	175429

Source: personal processing in STATA 14

Among the 104 macro-regions are major developmental differences. Therefore, the maximum value of the number of patents is registered in a region from Germany (6334.67) and the minimum value in Malta (0.1). The average value of the number

of patents is 529.0979 and the standard deviation is 971.9792. In terms of immigration stocks, the maximum value of the number of immigrants is registered in a region from UK (346422.3) and the minimum value in Malta (190.45). GDP per capita measured in euros has a maximum value of 63100 in Luxemburg and a minimum value of 1900 in a region from Bulgaria, with an average value of 23727.05 and a standard deviation of 12281.66.

Table 2 presents the correlation matrix, respectively the correlation coefficients between the set of variables took into account. Each variable is correlated with all other variables in the table. This type of matrix uses Pearson's Correlation (r) and examines the strength and the direction of the linear relationship between two continuous variables.

Table 2: The correlation matrix

	gdp_eur	gdp_pps	gfkf	edu_tert	edu_sec	pop_dens	gerd	berd	empl	unempl	rd_pers	innov_int	patents	immigr
gdp_eur_loc	1.0000													
gdp_pps_loc	0.7823*	1.0000												
gfkf	-0.0838*	-0.0199	1.0000											
edu_tert	0.5486*	0.5206*	-0.0910*	1.0000										
edu_sec	0.0000	0.0000	0.0033	-0.2401*	-0.2736*	-0.1993*	-0.1914*	1.0000						
pop_dens	0.4614*	0.4792*	-0.2070*	0.3446*	-0.1680*	1.0000								
gerd_gdp	0.4604*	0.4999*	-0.0561	0.4657*	0.0786*	0.0955*	1.0000							
berd_gdp	0.3952*	0.4229*	-0.0394	0.3428*	0.0295	-0.0095	0.8834*	1.0000						
empl	0.4350*	0.4831*	0.0924*	0.4303*	0.0664*	-0.0385	0.5303*	0.4673*	1.0000					
unempl	-0.2144*	-0.2837*	-0.1507*	0.0254	-0.0396	0.1080*	-0.2434*	-0.2977*	-0.6631*	1.0000				
rd_pers_tot	0.4188*	0.3794*	-0.0981*	0.2812*	-0.0839*	0.0711*	0.5704*	0.5278*	0.3454*	-0.1973*	1.0000			
innov_int	0.4997*	0.5539*	-0.0731*	0.2967*	0.1120*	0.1015*	0.7677*	0.7140*	0.5434*	-0.3311*	0.5518*	1.0000		
patents_epo	0.3738*	0.3608*	-0.0701*	0.1658*	0.0652*	0.0213	0.5755*	0.5491*	0.3587*	-0.2542*	0.7913*	0.7960*	1.0000	
immigr	0.2430*	0.2560*	0.0939*	0.1529*	-0.2390*	0.0154	0.2386*	0.2318*	0.1861*	-0.1592*	0.6613*	0.2301*	0.4517*	1.0000

Source: personal processing in STATA 14

The value of the correlation coefficient can range between -1 and +1. A value of 1 indicates a perfect linear relationship between the variables, while a value of 0 shows no (linear) correlation. A value of the correlation coefficient between 0.6 and 0.8 indicates a strong linear relationship, a value between 0.4 and 0.6 shows a moderate correlation, while values between 0.2 and 0.4 highlight a weak relationship between the variables. The sign of the correlation coefficient (- or +) points out the direction of the relationship. If the sign of the coefficient is positive, then both variables increase or decrease together. If the sign of the coefficient is negative, then one variable increases and the other one decreases.

Therefore, the innovation intensity = (nr. of patents/population of the region)* 1 million, records a strong proportional linear correlation with expenditure on R&D (GERD and BERD), a moderate positive correlation with GDP per capita, employment and total R&D personnel and researchers, and a weak positive correlation with tertiary education and the number of immigrants. Between innovation intensity and unemployment exist a weak inverse proportional relationship. The variable number of patents has a strong proportional relationship with total R&D personnel and researchers, a moderate positive correlation with GDP per capita,

expenditure on R&D and the number of immigrants, and a weak proportional relationship with tertiary education and employment. It can be observed a moderate positive linear relationship between GDP per capita (Euro and PPS) and the expenditure on R&D, tertiary education, employment, population density, innovation intensity and total R&D personnel and researchers. An expected inverse proportional relationship between unemployment rate and GDP per capita is highlighted.

4. Results and discussion

4.1. Non spatial models with fixed effects

In order to identify which model is better, with fixed effects or with random effects, it is used Hausman Test. After computing, it generated a Prob>chi2 = 0.0000 which results that the optimal model is the one with fixed effects. Therefore, 8 non spatial models with the endogenous variable = innovation output were generated (4 models with the number of patents and 4 models with innovation intensity).

Table 3: Non spatial fixed effects models (dependent variable = innovation output)

	(1) Patents	(2) Patents	(3) Patents	(4) Patents	(5) Innov_int	(6) Innov_int	(7) Innov_int	(8) Innov_int
gdp_eur_cap	0.331*** (6.05)	0.330*** (6.14)	0.314*** (5.87)	0.345*** (6.39)	0.318*** (5.65)	0.343*** (6.26)	0.341*** (6.40)	0.315*** (5.83)
edu_tert	0.394*** (3.63)	0.430*** (3.34)	0.512*** (3.91)	0.505*** (4.28)	0.501*** (4.29)	0.862*** (3.51)	0.341** (2.70)	0.415*** (3.16)
educ_sec	0.00802* (2.35)			0.00763* (2.43)			0.00751* (2.06)	0.00695* (2.10)
pop_dens			1.022 (1.01)		2.171* (2.14)			2.051* (2.06)
gerd_%gdp		0.643*** (6.57)	0.778*** (7.60)				0.895*** (8.60)	0.618*** (6.78)
berd_%gdp	0.237*** (5.51)			0.241*** (5.62)	0.182*** (4.42)	0.192*** (4.60)		
herd_%gdp				0.0698 (1.81)		0.00876 (0.24)		
empl_tech	0.355*** (4.72)				0.312*** (5.27)			
hrst						0.742** (3.12)		
rd_pers_buss		0.115** (2.93)						
rd_pers_edu		0.365*** (4.60)		0.333*** (3.92)				0.314*** (3.95)
rd_pers_tot			0.677*** (5.42)				0.736*** (5.93)	
immigr	0.127*** (4.81)	0.0974*** (3.73)	0.0736** (2.76)	0.104*** (3.97)	0.132*** (4.95)	0.137*** (5.21)	0.0665* (2.47)	0.0804** (3.04)
_cons	3.400 (1.88)	3.520*** (3.94)	11.19*** (4.25)	2.899** (3.29)	11.27*** (4.12)	-1.347* (-2.17)	6.489*** (5.18)	12.26*** (4.77)
N	1040	1040	1040	1040	1040	1040	1040	1040

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Source: personal processing in STATA 14

Interpretation for model no. 4: The results show that a 1% increase in GDP per capita would generate a 0.345% increase in the number of patents. Also, when R&D expenditures in the business sector increase by 1%, the number of patents increases by 0.241%. A 1% increase in people with tertiary education may result in an increase of the number of patents by 0.505%. When the number of educated immigrants increases by 1%, the number of patents increases by 0.104%. N represents the number of observations (1040).

To conclude, in all models innovation from a region is positively influenced by the economic conditions, by the financial support on R&D, by the people employed in technology and knowledge intensive sectors and by the R&D personnel. Investment in human capital is a determining factor in the development of a region, as well as highly qualified immigrants, which contribute positively to innovation performances.

4.2. Identification of spatial autocorrelation (Moran's I and Geary's C Index)

In order to test the presence of spatial dependence, Moran's I and Geary's C Index will be applied. Moran index takes into consideration both the value of the variables and the geographical coordinates of the macro-regions in which they are recorded. The value of I range between -1 (showing a negative spatial autocorrelation among variables) and 1 (positive spatial autocorrelation). Geary index is inversely proportional to Moran index, but is not identical. While Moran's I is a measure of global spatial autocorrelation, Geary's C is a measure of local spatial autocorrelation (table 4 and 5). The value of C range between 0 and 1.

Table 4: *Moran's I*, a measure of global spatial autocorrelation, EU 28, year 2012

Variables	I	E(I)	sd(I)	z	p-value*
gdp_eur_cap	0.541	-0.010	0.056	9.746	0.000
gdp_pps_cap	0.569	-0.010	0.056	10.304	0.000
edu_tert	0.463	-0.010	0.056	8.374	0.000
edu_sec	0.784	-0.010	0.056	14.155	0.000
patents_epo	0.456	-0.010	0.057	8.238	0.000
innov_int	0.648	-0.010	0.057	11.613	0.000
gerd_gdp	0.472	-0.010	0.056	8.560	0.000
berd_gdp	0.469	-0.010	0.056	8.494	0.000
immigr	0.147	-0.010	0.055	2.857	0.004

Source: personal processing in STATA 14

Table 5: *Geary's C*, a measure of local spatial autocorrelation, EU 28, year 2012

Variables	c	E(c)	sd(c)	z	p-value*
gdp_eur_cap	0.431	1.000	0.061	-9.366	0.000
gdp_pps_cap	0.442	1.000	0.063	-8.839	0.000
edu_tert	0.469	1.000	0.061	-8.718	0.000
edu_sec	0.194	1.000	0.064	-12.594	0.000
patents_epo	0.465	1.000	0.060	-8.859	0.000
innovation_int	0.304	1.000	0.059	-11.712	0.000
gerd_gdp	0.508	1.000	0.062	-7.947	0.000
berd_gdp	0.453	1.000	0.061	-8.938	0.000
immigr	0.805	1.000	0.072	-2.707	0.007

Source: personal processing in STATA 14

After computing the proximity matrix with five neighbours, both Moran's I value and Geary's C value prove the existence of a positive spatial autocorrelation with respect to the dependent variables took into consideration: GDP per capita, tertiary and secondary education, the number of patents, innovation intensity, intramural R&D expenditures and immigration stock.

As it can be observed at Moran's I test, the value of I is greater than the value of E(I) in all cases, which evidences a positive spatial autocorrelation and that close macro-regions have similar values for the variables of interest. The greater Moran's I is, the more intense the spatial dependence is. The highest positive spatial autocorrelation is recorded at secondary education ($I=0.784$). Z value is above 1.96 (table value) and p-value is under 0.05, which justifies the spatial correlation test.

At Geary's C test the value of z coefficient is lower than -1.96 (table value) and p-value is below 0.05, which is a good result.

Figure 1 presents the Moran scatter plot for the variables: innovation intensity and the number of immigrants. They are emphasized on the horizontal axis, while their spatially lagged counterparts are on the vertical axis. Moran Scatterplot shows the relationship between the values of a variable from a location and the average value of the same variable at neighbouring locations.

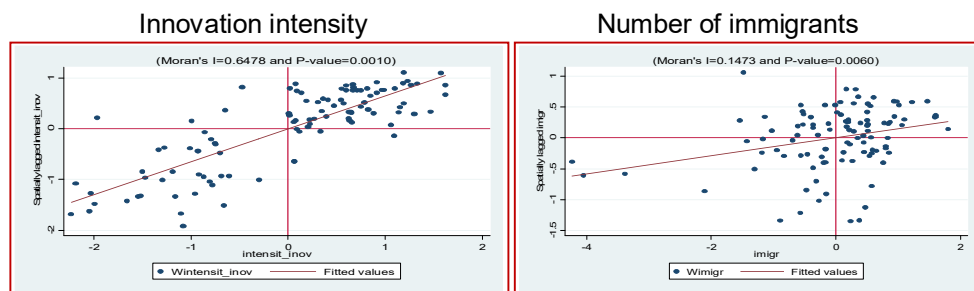


Figure 1: Moran scatter plot
Source: personal processing in STATA 14

As it can be observed, in case of innovation intensity scatterplot, there are lots of dots in the first and third quadrant (hotspots). This highlights a positive spatial autocorrelation and a cluster of similar values. This means that the values that are above the mean in a location are surrounded by neighbouring locations with average values that are above the mean (first quadrant) and values that are below the mean in a location are surrounded by neighbouring locations with average values that are below the mean (third quadrant). In case of the number of immigrants, it can be observed an agglomeration of dots especially in the first quadrant, but also in all other quadrants. This means that some locations are similar to the neighbours, while others are different, in terms of the number of immigrants.

4.3. Spatial models with endogenous variable = innovation intensity

Due to the fact that the spatial dependence is validated, it is justified to compute spatial models. Therefore, in table 6 four spatial models were generated (Spatial Autoregressive Model, Spatial Error Model, Spatial Durbin Model and Spatial Autocorrelation Model), after which the best model was chosen.

The optimal model is considered to be the one which has the lowest value of the AIC and BIC tests, and the highest value of the LL function and R-square. Therefore, the best model for this set of data panel is Spatial Durbin Model (SDM). In table 7 are

generated eleven Spatial Durbin Models, with the dependent variable= innovation intensity.

Table 6: Diagnostic tests for the selection of the optimal spatial model

Model	R ² (within)	Log Likelihood Function (LL)	Akaike Information Criterion Test (AIC)	Schwarz Criterion Test (BIC)
M1 SAR	0.1537	-302.7244	621.4488	661.0247
M1 SEM	0.1566	-299.1173	614.2347	653.8105
M1 SDM	0.1907	-283.5451	595.0902	664.3479
M1 SAC	0.1586	-298.2001	614.4002	658.923
M2 SAR	0.1690	-294.0724	604.1447	643.7205
M2 SEM	0.1717	-291.0358	598.0715	637.647
M2 SDM	0.1967	-275.8679	579.7359	648.9935
M2 SAC	0.1736	-283.6632	585.3265	629.8493
M3 SAR	0.1802	-286.7866	589.5731	629.149
M3 SEM	0.1828	-284.351	584.702	624.2778
M3 SDM	0.2016	-275.8679	579.7359	648.9935
M3 SAC	0.1839	-283.6632	585.3265	629.8493

Source: personal processing in STATA 14

Table 7: Spatial Durbin Model with endogenous variable = innovation intensity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
gdp_eur_cap	0.335*** (6.28)	0.334*** (6.27)	0.299*** (5.45)	0.316*** (5.91)	0.343*** (6.42)	0.331*** (6.26)	0.329*** (6.26)	0.302*** (5.55)	0.303*** (5.75)	0.297*** (5.44)	0.290*** (5.38)
immigr	0.108*** (4.33)	0.103*** (4.12)	0.115*** (4.60)	0.105*** (4.19)	0.0914*** (3.68)	0.0915*** (3.68)	0.117*** (4.67)	0.101*** (3.87)	0.102*** (4.07)	0.096*** (3.83)	0.0746*** (2.87)
herd_gdp	0.264*** (5.84)	0.256*** (5.65)	0.199*** (4.99)	0.250*** (5.90)	0.309*** (6.62)	0.310*** (6.65)	0.255*** (6.19)	0.263*** (6.28)	0.263*** (6.31)	0.259*** (6.20)	
gord_gdp											0.717*** (7.73)
edu_text	0.899*** (5.86)	0.856*** (5.50)	0.659*** (4.34)	0.744*** (4.85)	0.869*** (5.66)	0.884*** (5.78)	0.714*** (4.88)	0.685*** (4.59)	0.664*** (4.41)	0.663*** (4.38)	0.554*** (3.75)
herd_gdp		0.0675 (1.80)	0.0105 (0.30)	0.0268 (0.77)					0.0177 (0.51)	0.0164 (0.48)	
empl		0.125 (0.41)								0.158 (0.52)	0.0776 (0.26)
unempl									-0.00770 (-0.17)		
educ_sec					0.00749* (2.17)	0.00751* (2.01)	0.00768* (2.18)	0.00846* (2.16)	0.00853* (2.21)	0.00832* (2.08)	0.00818* (2.13)
empl techno							0.980*** (4.74)				
rd_pera_buss	0.123* (2.43)	0.112* (2.26)			0.110* (2.24)	0.111* (2.26)					
rd_pera_edu	0.342*** (4.50)	0.397*** (4.85)			0.314*** (4.14)	0.317*** (4.18)					
rd_pera_tot				0.445*** (5.74)							
Rho	0.494*** (2.62)	0.492*** (2.60)	0.467* (2.47)	0.442* (2.20)	0.389 (1.93)	0.409* (2.05)	0.398* (2.07)	0.408* (2.10)	0.419* (2.17)	0.410* (2.12)	0.451* (2.41)

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Source: personal processing in STATA 14.

As a general conclusion, a very important factor in the increase of innovation output is economic dimension along with highly skilled migrants and investments in R&D. Furthermore, human capital plays a major role, especially people with tertiary education and/or employed in science and technology sectors, that can enhance innovation, which is a measure of technological progress, which is a driver of productivity growth and at last a driver of economic growth.

The ρ (rho) parameters have all positive signs and are statistically significant, indicating a pure spatial effect on the dependent variable. This emphasises that the

innovation intensity from a region influences the innovation intensity from neighboring regions. Therefore, in terms of innovation it can be observed the existence of a spillover effect from a region to another close region.

5. Conclusion

This research has examined the extent to which skilled immigrants along with investments in R&D sectors and in higher education enhance innovation output and contribute to economic growth, on a date panel of 104 macro-regions from EU, between 2003 and 2012. The study is based on the development of econometric models on panel data, using a set of indicators specific to the process of immigration, innovation and economic development. Therefore, the research uses both classical models with fixed effects (non-spatial models) and spatial autocorrelation models. The results indicate a positive nexus between skilled migrants and innovativeness of the regions, strengthened when taking into account different factorial combinations related to the economic dimension, such as: financial support in research and development, investment in tertiary education, personnel employed in technology and knowledge intensive sectors, as well as the share of scientists and engineers in population. Another finding of this study is that the innovation intensity from a region influences the innovation intensity from neighboring regions (highlighting the existence of a pure spatial effect).

It is also very important that in order to boost knowledge creation and per capita GDP, EU should not only attract scientists and engineers migrants, but also provide further financial support in research and development. To sum up, migration is a process that needs to be managed and not a problem that needs to be solved (GD No. 780, 2015).

The main limit of this research is the lack of data available regarding the number of patents for all the 104 macro-regions (NUTS 1 level) in the UE more recent than year 2012. Therefore the period of the study was chosen 2003-2012 because after year 2012 data for the number of patents at NUTS 1 level is not available.

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MAIN CHARACTERISTICS OF THE PROFITABILITY OF HUNGARIOAN DISTRICT HEAT SUPPLIERS BASED ON THE 2009-2017 FINANCIAL STATEMENTS

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Abstract: *In Hungary, district heating supplies 15% of the population which accounts for 1.5 million people. This activity is carried out by 89 companies. There are differences in the ownership background, in the technical structure, in the activities carried out and in the number of supplied consumers of district heat suppliers. The current study describes some specificities of the income statement of the Hungarian district heating companies. In the first part of the study, the methodology exploring profitability is described. Then in the second part, the study describes the main features of the income statement of the heating suppliers. Using data derived from the accounts of the Hungarian district heat suppliers and from technical and economic pieces of information, nine years (2009-2017) were analyzed. The empirical analysis using the gathered data aims at revealing how the operational and regulation characteristics of the district heat sector are reflected in the income statement and how legislative changes have affected profitability indicators.*

Keywords: *District heat supply; District heat producers; District heat suppliers; income statement; profitability.*

JEL Classification: *K32.*

1. Literature review

In accordance with International Accounting Standard (IAS) 1 Presentation of Financial Statements, the elements of the financial statements are as follows:

- a balance sheet,
- an income statement,
- a statement of changes in equity,
- a cash flow statement,
- notes.

Income statement includes a deduction of the company's profit. It introduces the main factors influencing the generation and modification of the income, the components and the formation of the income. The standard does not prescribe a predefined structure. It defines only possible forms and minimum content. (IAS 1, Horngren - Datar - Foster, 2006)

According to Hungarian accounting regulations, profit before tax is the sum of the profit from normal operations and the profit from financial activities. In accordance with international practice, company can define this profit in two ways. The first method

focuses on the value of the goods and services produced in the examined period. The profit is the difference between the produced (and wholly or partly sold) goods and services and the operating costs (like material costs, labor costs or depreciation expense) of the given period. The second method focuses on sales. In this case, the result can be derived as follows:

- turnover
- costs related to the production of the sold product or service (product cost)
- costs related to the operation of the given period, in addition to the above (period cost) (Fenyves et al, 2018).

The income statement primarily helps analyze the profitability and efficiency situation. When analyzing profitability, we can examine among others:

- the composition of revenues, returns, costs, expenses and income,
- changes in revenues, returns, costs, expenses and income elements,
- profitability calculated for different bases and
- the relationship between the main items of the income statement (and the balance sheet).

When analyzing profitability, we can also compare certain income categories to some bases. Profitability indicators constructed in such a way:

- provide information on changes in efficiency,
- can be used as a base for analyzing trends in profitability,
- make the comparison of the given company with other companies or with the industrial average possible.

Income categories that may be taken into consideration when calculating profitability indicators include contribution margin, EBIT or EBITDA. Some bases:

- revenues,
- capital,
- total balance sheet,
- a specific group of assets,
- labor costs,
- personnel costs,
- average number of employees,
- revenue per major markets and per customer (Tóth - Zéman, 2018, Brealey et al, 2011).

One of the most important profit level indicators on turnover is gross profitability, also known as the coverage rate. The contribution margin is the difference between revenue and variable costs. The coverage rate is the ratio of the contribution margin to the revenue. Financial accounting, however, does not group costs based on their relationship with the volume of production. The master schedule and therefore the financial statements does not include variable and constant costs. (Cf. Musinszki, 2013)

There are, of course, methods and recommendations for decomposing accounting costs into fixed and variable elements. (See, for example, Elijah, 1997 or Horngren – Datar - Foster, 2006). The simplest and the roughest method is to consider direct costs as variable, and indirect costs as constant. This is, however, an option only if the company prepares its income statement using expense method. The coverage rate measures the profitability of the supply of the goods or services. A broader picture

of the company could be obtained if this indicator was determined by product or major market, but there is no requirement to provide the necessary information in the report.

When determining the Return on Equity ratio (ROE), we compare return to capital, typically to equity or to share capital. When calculating ROE, it is not clear what is to be considered a return out of the profit categories defined in the Hungarian Accounting Act. We can define the indicator in the form of operating profit / equity or in the form of aftertax profit / equity.

In the case of the Return on Assets indicators, we compare a certain category of profit to a specific group of assets or the total balance sheet. One possible definition of the Return on Assets (ROA) indicator used in international practice is: aftertax profit / total balance sheet. It is acceptable when the calculation of the indicator includes only fixed assets or working capital (total assets - liabilities) in the denominator. It is also acceptable to include a different profit category in the numerator. This indicator shows how effectively the company uses the available assets. It shows the average return on total assets of the company. In addition to owners and creditors, the indicator can be important also for the management. For all parties, the ROA is satisfactory if higher than the average interest rate on loans taken. (Bozsik, 2010)

One of the most widely used profitability indicators, still an innovation of the DuPont Company, was the development of Return on Investment (ROI) and the related indicator system. Pierre du Pont believed that former profitability indicators on sales and costs were not suitable to measure the company's profitability. The indicator developed to support investment decisions can be defined as the ratio of net return to net asset value. There are recommendations (Anthony - Govindarajan, 2009) on what to consider as return (like operating profit or after tax profit) and what to consider as investment (fixed assets or some prescribed elements of fixed assets + current assets), but giving purport to the two categories is basically the sovereign decision of the company. (Bozsik, 2010, Brealey et al, 2011, Fenyves et al. 2018, Molnár, 2016)

2. The aim of the empirical research and the applied methodology, results

The aim of the empirical research is to outline two important factors of the performance features of district heating companies in Hungary and to establish future research questions.

It deals with answering two research questions:

H1: Sectoral features like the high rate of other revenues (that has a lower value for companies that carry out non-district heating activities to an extent higher than the average) are well reflected in the income statements of district heat suppliers.

H2: The efficiency of district heat suppliers is considerably influenced by the changing regulatory environment.

The database of the research includes the companies 2009-2017 reports. The tools of the analysis were the Excel program of the Microsoft Office 365 ProPlus package and the SPSS 24 software.

The first striking features of the profitability specificities of the heating sector are illustrated in Figure 1 describing net sales and various costs types at the sector level.

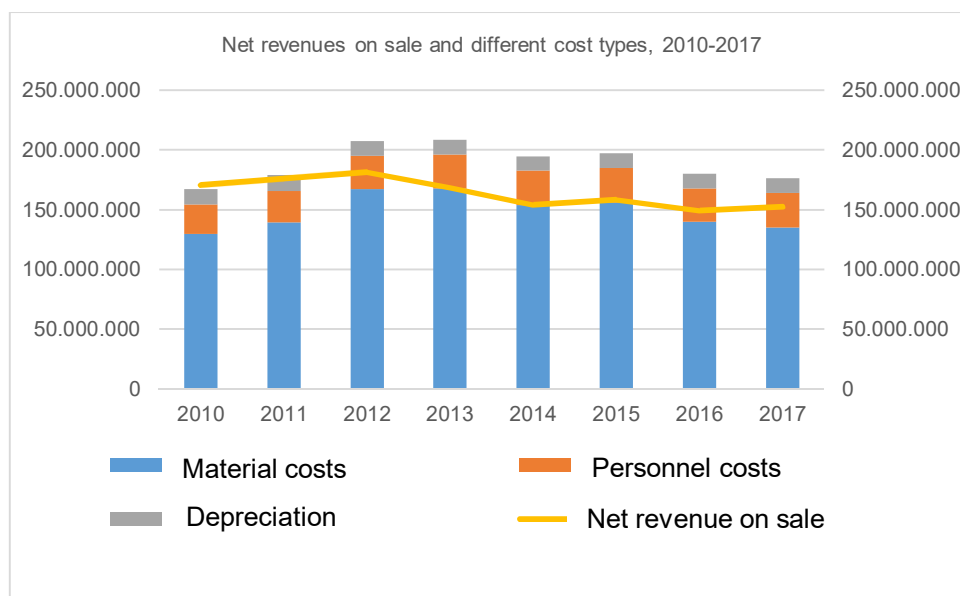


Figure 1: Net revenues on sales and different cost types in the whole sector between 2010 and 2017

Source: Own compilation based on annual report data

The figure shows that net revenues on sales have not cover material and personnel costs since 2011. The reason for this is that Act XXIX of 2011 on the Amendment of the Laws on Energy froze the retail prices and the prices of specially treated institutions as at 31 March 2011. It is the Minister of National Development who is responsible for setting the prices of heat sold to the public and to specially treated institutions as the highest official price, by taking into account the proposal of the Hungarian Energy and Public Utility Regulatory Authority. The loss of revenue derived from applying official prices is covered by the district heating subsidy. Its amount is fixed at a level that cannot exceed the net cost of providing the public service, i.e. the difference between the costs incurred and the revenue generated by the public service, by taking into account a reasonable return on equity. As for reasonable return, a profit margin was defined, which is 2% of the gross book asset value related to these activities based on the audited accounting unbundling and as at 31 December of the year preceding the year under review of the before tax profit derived from district heat production and district heat supply activities.

The Figure 2 highlights that other revenues represent a significant part of the revenue of the district heating provider. This high proportion is due to district heating subsidy from 2012.

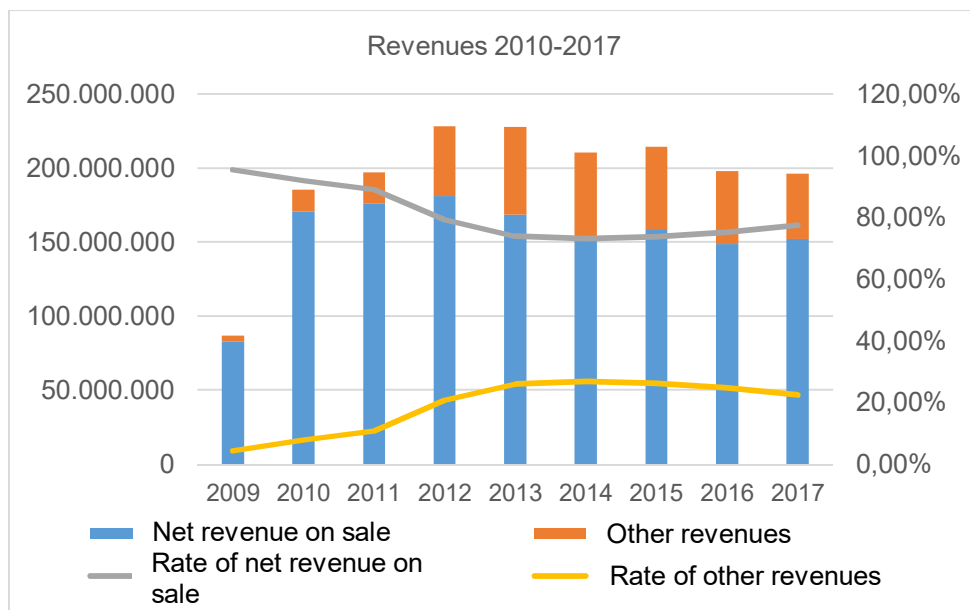


Figure 2: Cumulative values of net revenues on sale and of other revenues and changes of their rate between 2010 and 2017

Source: Own compilation based on annual report data

Examining the structure of the rate of net revenues on sale and of the expenditures of district heating suppliers and the structure of revenues, it can be concluded that profitability of district heating suppliers is strongly influenced by the authority's regulations.

The indicators examined above describe only a slice of the factors influencing the profitability of district heating suppliers. They can, however, provide a pronounced picture of the operation of a highly regulated sector.

The second part of the hypothesis one requires the knowledge of an additional part of the law. The Act XVIII of 2005 on District Heating Services defines district heating. The Act and the related decrees do not prohibit that companies providing these activities are engaged in other activities as well. Accordingly, besides district heating, the bulk of the 89 Hungarian district heat suppliers does other activities, including district heat production, electricity production, waste management, water utility supply and other activities (like the ones related to urban management). In the case of the examined population in 2017, the average rate of turnover from other (not district heating service) activities was 28%, while this rate was 33% for the assets. On this basis, I divided the district heat suppliers into two categories. Companies with an asset or turnover rate exceeding the average are labelled by "other activities", while other companies are labelled by "district heat". Even if decomposition based on activity would have justified the creation of only two groups, the result would not

reflect a homogenous picture if these two groups are analysed. Figure 3 visualises the reason for it.



Figure 3: Distribution of the asset value of district heat suppliers
Source: Own compilation based on annual report data

Figure 3 illustrates the grouping of district heat suppliers based on the scale of sales in accordance with the classification of the Association of Hungarian District Heating and the Hungarian Energy and Public Utility Regulatory Authority.

While companies falling into the first four class intervals form a homogenous group based on the distributions, the last group including companies with the highest output clearly highlights the difference in magnitude of FŐTÁV Private Co. Ltd., Hungary's largest Heat Provider (almost 40% of the amount of heat sold and 26% of the district heat assets belong to this company).

Therefore, it was justifiable to examine this company separately and to create a further category for it in both cases resulting in more homogenous groups.

Then, the rate of other revenues (other revenue / other revenue + turnover) was examined, which is visualized on Figure 4.

It is confirmed that the rate of other revenues is surprisingly high in the sector due to the typical aids in the district heat sector. Our expectations about the differences among the rate of revenues based on activities are also met. The effect of the system of aids is clear as the rate of other revenues was lower by 6-8 percentage points on average in the examined years in the case of companies that provide "other services"

to a higher extent. Simple ANOVA revealed that in most part of the examined period, there were significant differences among the examined groups. It was important for us to examine the causes of differences and whether grouping by activity is an appropriate grouping criteria in this category. The results of the PostHoc tests confirm that grouping based on activity significantly affect the results.

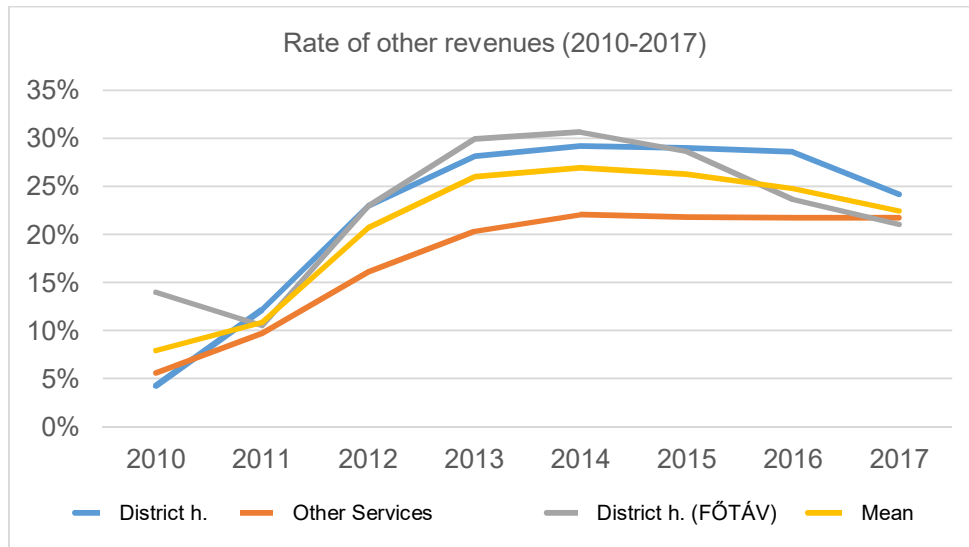


Figure 4: Rate of other revenues in the categories based on activity
Source: Own compilation based on annual report data

The aim of the second research question is to reveal the effect of the changing regulatory environment on profitability and on liabilities, with special regard to equity. To do so, three indicators (ROA, ROI and ROE) were examined. Our calculations revealed that all the three indicators changed in the same way in the examined period therefore we visualize the value of one of these indicators, the Return On Equity, over time, describing legislative changes picturesquely on Figure 5.

The average value of ROE did not change considerably in the examined period, while it changed considerably among the groups, it reached an average value of 2% after 2011.

It was important for us to examine which legislative changes were relevant to the sector during the period under review (more than 25 acts or government decrees were examined). Based on them, the four most significant changes that have a demonstrable impact on the sector's profitability were identified.

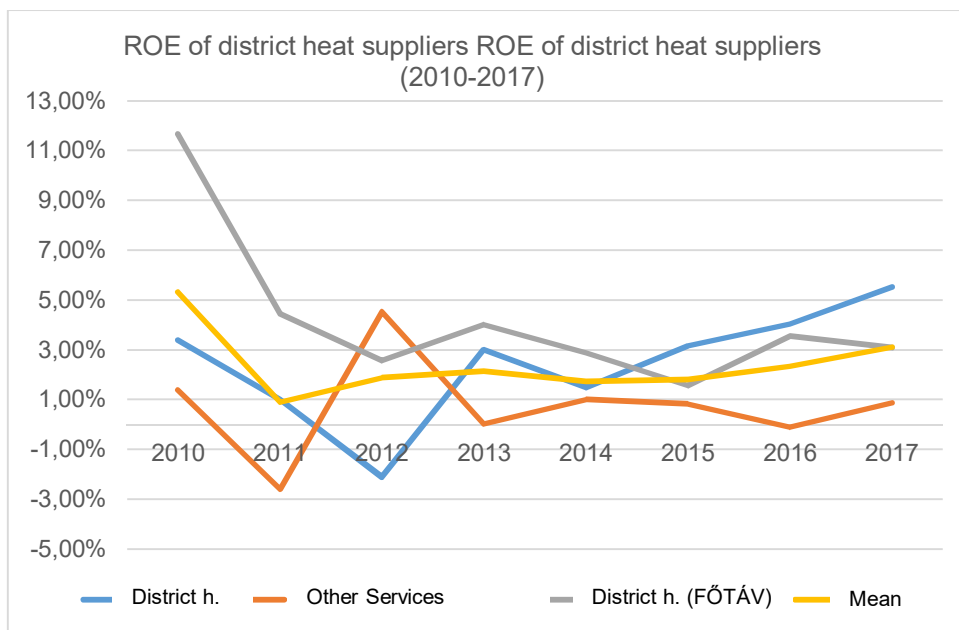


Figure 5: ROE of district heat suppliers depending on activity groups
Source: Own compilation

The regulatory factors determining the efficiency of district heat suppliers, which can be observed in the values of ROE, ROA and ROI were as follows,.

1. Freezing of Service fees. The Act XXIX of 2011 on the amendment of the energy related laws froze the retail prices and the prices of specially treated institutions as at 31 March 2011. **It is the Minister of National Development who is responsible for setting the prices of heat sold to the public and to specially treated institutions as the highest official price, by taking into account the proposal of the Hungarian Energy and Public Utility Regulatory Authority. Its impact was noticeable one year later, in 2012, especially for companies with a predominantly district heating profile.**
2. Transformation of the energy support system. Since 2012, the loss of revenue derived from applying official prices has been covered by the district heating subsidy. Its amount is fixed at a level that cannot exceed the net cost of providing the public service, i.e. the difference between the costs incurred and the revenue generated by the public service, by taking into account a reasonable return on equity, expected based on the equity share related to providing public service. As for reasonable return, a profit margin was defined, which is 2% of the gross book asset value related to these activities based on the audited accounting unbundling and as at 31 December of the year preceding the year under review of the before tax profit derived from district heat production and district heat supply activities.

Its impact could also be observed one year later (in 2013), especially for companies with a mainly district heating profile.

3. Utility price cuts. The biggest change in the operating conditions of the heat suppliers was implemented based on the Act LIV of 2013 on the execution of utility price cuts. As a result of the price cuts in district heating, total savings of 20% was realized by the consumers on the whole in more stages. As of January 2013, there was another change in the price system for heating supply as the basic and heat price decreased by 10% and then decreased by another 11.1% from 1 November. As a result of the implementation of the Act LIV of 2013 on the execution of utility price cuts, retail consumers' gas, electricity and district heating costs decreased by a total of 20% from December 2012 to November 2013, followed by a further 3.3% decrease from October 1, 2014.
4. Repeated change of the support system, resulting in the operational support of district heat suppliers having two elements from October 1, 2015. This change led to an improvement in the profitability situation of the examined companies.

3. Conclusions

The purpose of the current research was to present some features of the profitability of heat suppliers. As a first step, literature describing profitability was introduced briefly, followed by the presentation of the empirical research. Hypothesis H1 was totally failed to be rejected. Sectoral characteristics of district heating service and the impact of the legal framework are reflected in the composition of revenues and heat suppliers are characterized by high revenue ratio, especially those whose rate of revenue and asset related to non-district heating activity is below the average in their activity structure. Hypothesis H2 aimed at examining the impact of the changing regulatory environment on profitability and on liabilities, especially on equity. As a result, it can be concluded that changes in the regulatory environment are reflected in the ROE, ROA and ROI values and the regulations about the operation of district heat companies have a more direct effect on companies whose portfolio includes district heating activity with higher proportion.

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ELECTRIC VEHICLES AND CRITICAL RAW MATERIALS

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Abstract: *In the 21st century transportation became one of the most important aspects of our life. People use a lot of ways of travelling to work or having fun. Nowadays, the most popular innovations are electric cars. For this green solution critical raw materials are needed. Production of a lithium-ion battery requires a wide scale of elements and materials, like cobalt. There are several reasons that cobalt is one of the most important elements. One reason is that the main supplier is the politically instable the Democratic Republic of the Congo. In 2017 Fund For Peace ranked the Democratic Republic of the Congo as the 7th most unstable country in the World. Mol analysts believe that the future of electric cars really depends on the Democratic Republic of the Congo. The Democratic Republic of the Congo holds a significant porportion (57%) of the cobalt stock. Due to technological improvements in battery production, new types and solutions will become available in the next decade. One of the most anticipated technological developments is the solid battery. Some electric car companies see nickel as a potential solution, but this has both advantages and disadvantages. Attempts are being made to eliminate cobalt from the production process. Another pessimistic survey from DERA shows that cobalt consumption in the area of e-mobility will likely increase. In addition, it is important to note that the raw material market is highly concentrated, with many countries having a monopoly position. To measure market concentration, we selected the Herfindahl-Hirschman index and examined the value of some of the raw materials needed to produce the lithium-ion battery. The price of cobalt has a strong influence on the price of batteries and of electric cars. Forecasts say that if the price of electric cars were more favourable, they would soon become more popular. In summary, critical materials have a serious effect on transportation, and we examine the past, present and the future.*

Keywords: *cobalt; CRM; electric car; transport; economic aspect.*

JEL Classification: *L62.*

1. Introduction

In the 21st century transportation became one most the most important aspects of our life. People use a lot of ways of travelling to go work or have fun. Therefore, wide scale of products transported by countries or companies across planet Earth. The history of transportation began in ancient times, but it became even more important in the last three hundred years. During these centuries, many means of transportation were created and developed, like trains, airplanes and ships.

Moreover, there is a tendency for all possible transportation technologies to evolve to a higher level at an ever faster pace.

The history of trains began in the 19th century. That was when the first horse-drawn carriage came out. Due to the technological innovations a few decades later the people could use steam-powered trains. But the innovation did not stop with steam-powered models. In the first half of the 20th century the maglev technology was patented. "Maglev train, also called magnetic levitation train or maglev, [is] a floating vehicle for land transportation that is supported by either electromagnetic attraction or repulsion" (Encyclopaedia Britannica This technology requires very cold, liquid helium, which is a critical raw material. In recent years the role of the railways in freight transport is growing, which is reflected in the numbers. Between 2009 and 2017 the freight tonnekilometres for railways increased in Hungary. However, the growth tendency does not reach the growth tendency of the total kilometres of goods travelled, so we can talk about a decrease in proportion.

Nowadays, the most popular innovations are electric cars. For this green solution some essential things are needed, called critical elements or critical raw materials, such as graphite and cobalt. Several other critical raw materials are necessary in the production of automobile components, as listed in Figure 1. In other transportation systems, the tendency is the same.



Figure 1. Critical elements used in various components of a modern motor vehicle
Source: Universiteit Leiden
(<https://www.universiteitleiden.nl/en/research/research-projects/science/cmlrare-earth-supply-chain-and-industrial-ecosystem-a-material-flow-assessment-of-european-union>)

The ranking of critical materials is influenced by technological improvements day by day, so the list of these elements continuously changes. The European Committee created surveys in 2011, 2014 and 2017 of materials to be monitored on its list of

critical elements. Based on the survey results, elements labeled critical elements are those that have high significance for the economy and that have high supply risks .

2. Electric cars and cobalt

What is an electric car? The Answer is so simple: a car whose powertrain is operated by an electric engine. When do you think the first electric car was designed? The first electrically powered car was built in the late nineteenth century. In present times the most popular pioneer of this technology is Tesla. This company started the mass production of electric cars in 2008.

The first model, named the Roadster, was followed in 2009 by the Tesla Model S, and then came the next model in 2012, a SUV called the Tesla Model X. The company's latest model is called Model 3. The first of this model was released in 2017. Model 3 soon became a popular model among Americans: in 2018 approximately 140,000 were sold. In terms of sales Tesla Model 3 is the second most popular car in the US. Only sales from Toyota Camry were higher in 2018. But it is not only popular in the United States. Following its European launch in early 2019, it became the best-selling electric car in Europe. Among the luxury SUVs, Tesla ranked high in the U.S. market in 2018. The Model X was the second most popular model. Tesla cars use lithium-ion batteries to store electric charges. The weight of the battery accounts for a significant part of the weight of the car, which is about 1/3 for the Tesla Roadster.

Electric cars are spreading fast due to their zero local carbon-dioxide emissions. As is visible in Figure 2, the number of electric cars has increased dramatically in Hungary, but in spite of this increase, the rate of electric cars was only 0.06 per cent of vehicles on the road in 2017.

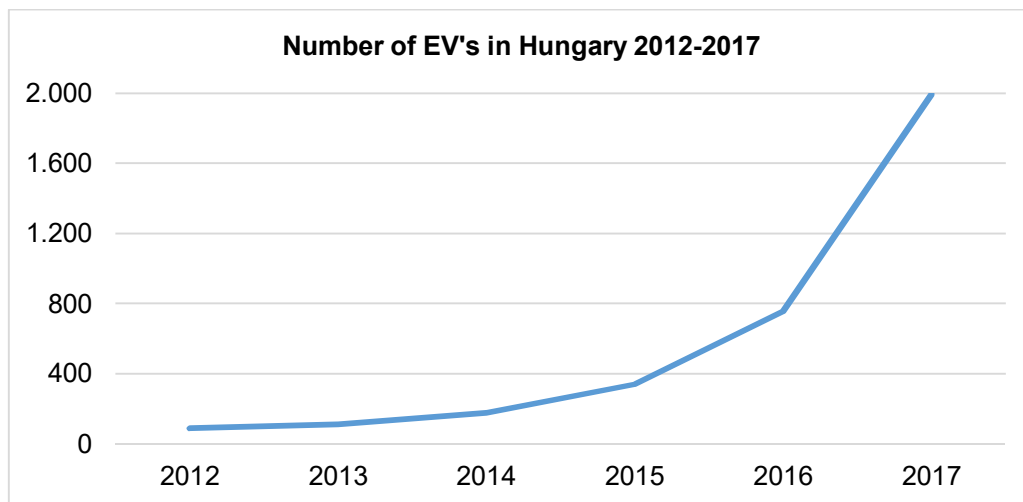


Figure 2. The number of electrical vehicles registered in Hungary, 2012–2017

Source: Eurostat

Other countries are experiencing a similar trend. Figure 3 shows the change in the number of electric cars in Norway and Japan. However, the number of electric cars in these countries is significantly higher than in Hungary.

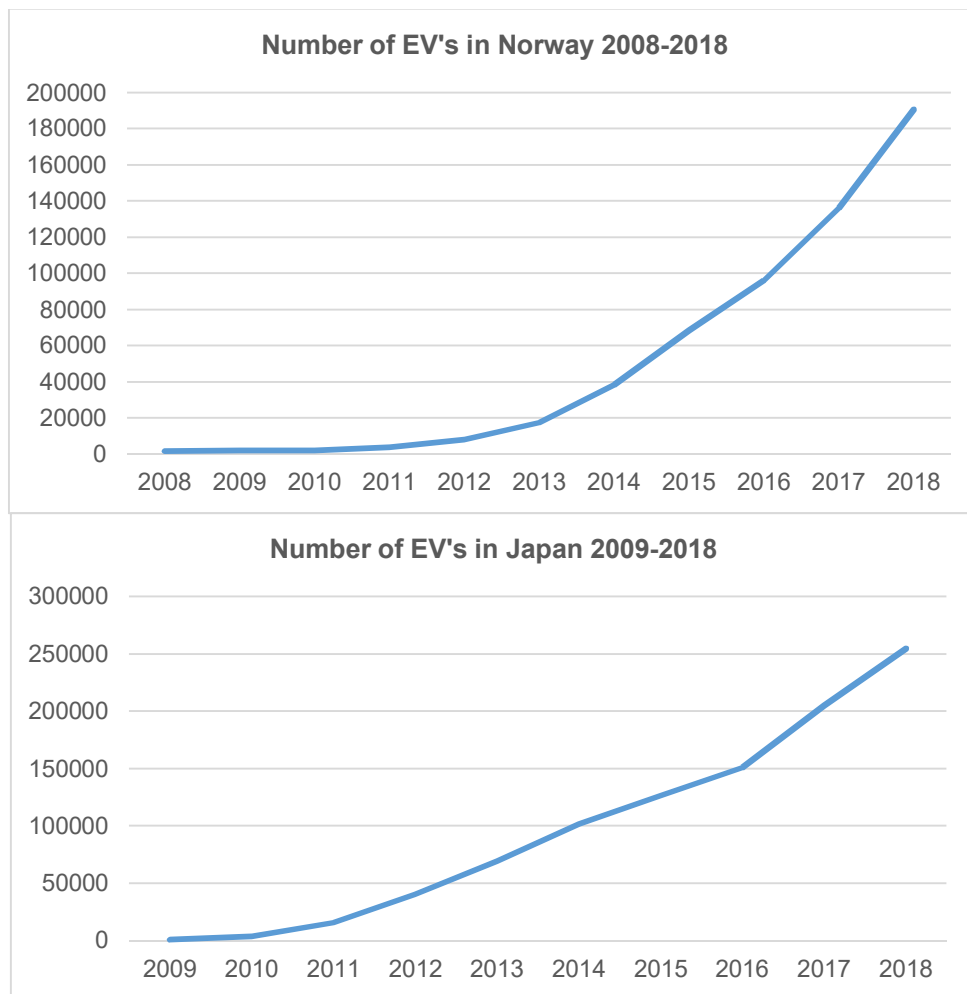


Figure 3. The number of electrical vehicles registered in Norway (left) and Japan, 2008–2018

Source: Statistic Norway, Statista.com

Norway is paying close attention to this green solution, which is supported by the fact that the share of electric cars in cars in Norway reached the highest proportion in 2018 (49.1%). The second on this list was Iceland (19.1%) and the third was Sweden (8.0%). In China only 4.4% of cars are electric, while in the USA the

proportion is only 2.1%. A Reuters article in April 2019 reported that in March 2019 nearly 60% of cars sold in Norway were fully electric. So it can be stated that the Norwegian people treat this area as a priority.

Production of a lithium-ion battery requires a wide scale of elements and materials, like lithium, cobalt, nickel, graphite, aluminium and copper. Many of these elements appear on the 2017 critical materials list of the European Committee. One of the most critical elements is cobalt. There are several reasons that cobalt is one of the most important elements. One reason is that the main supplier is the politically instable the Democratic Republic of the Congo. In 2017 Fund For Peace ranked the Democtaric Republic of the Congo as the 7th most unstable country in the world. Another is that cobalt is mined as a by-product. Figure 4 shows the amount of this element mined worldwide between 2008 and 2018.

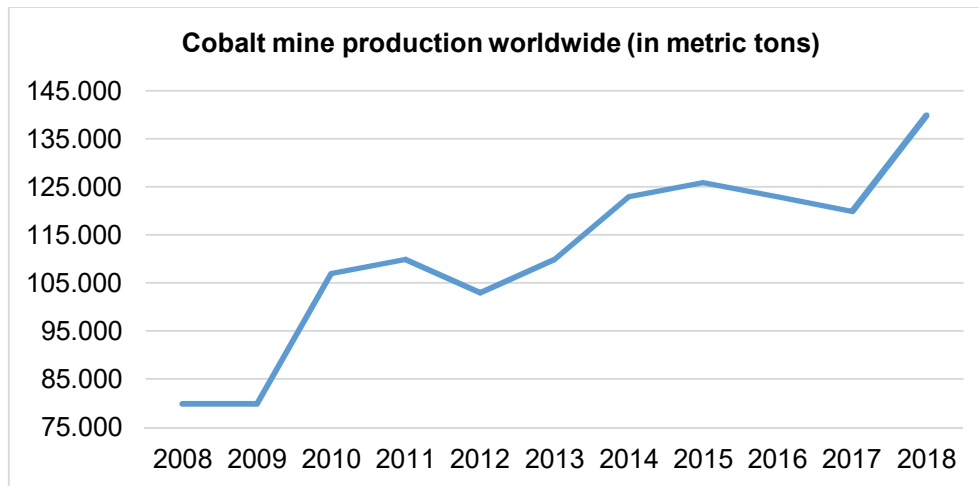


Figure 4. Cobalt production worldwide, 2008-2018

Source: Statista.com

Mol analysts believe that for these reasons above, the future of electric cars really depends on the Democtaric Republic of the Congo. The Democratic Republic of the Congo is the main supplier of cobalt, and this country holds a significant porportion (57%) of the cobalt stock. Most electric car companies require cobalt for the lithium-ion batteries, including Tesla. The world cobalt production in 2018 was about 140,000 metric tons. The production of an electric car requires nearly 10 kg of cobalt, and less than half of the produced cobalt is used to make batteries.

Some electric car companies see nickel as a potential solution, but this has both advantages and disadvantages. One of the advantages is that these batteries have a longer operating time, but one big disadvantage is that they are more flammable. However, optimistic scenarios believe that battery issues will not get in the way of electric cars, because as soon as it becomes a priority, researchers will come up with a better solution.

Due to technological improvements in battery production, new types and solutions will become available in the next decade. One of the most anticipated technological developments is the solid battery. It is important to highlight that the base material of this improvement is lithium. Attempts are being made to eliminate cobalt from the production process due to the problems mentioned above.

3. Environmental and economic aspect

We think that these two areas are closely linked but can be approached from various perspectives. In 2013 and 2014 PwC made a study about the future of electric cars. This includes both environmental and economic aspects, with different scenarios. The study analysed the impact of environmental factors through air and noise pollution. We can divide the effects in two groups. There are local and global effects. In the case of a fully electric car there are zero direct emissions. But in measuring global impacts it is essential to speak about emissions linked to manufacturing, raw material production and processing, and it is important to speak about the source of energy. In our opinion, this is important because some renewable energy devices (solar panels, wind turbines) require the use of critical raw materials, and the mining and processing of these materials imposes additional burdens on the environment. Regarding noise pollution, the PwC survey shows that the use of electric cars is approximately 70% quieter than a petrol- car.

In economic terms, the use of electric cars has both benefits and costs. The first of these is the group of different financial incentives, which in the case of the EU is about 5000 EUR/car, which may include tax breaks and free parking. These incentives are predicted to exceed EUR115 million by 2023. In order for electric cars to become more and more popular, it is necessary to build an appropriate charging station infrastructure; the total cost for this could be close to EUR 120 million. As we mentioned, the use of electric cars may generate tax benefits, and since these vehicles do not require petrol or gas oil, the tax and revenue from these products is expected to decrease. The expected loss is estimated to be 205 million euro up to 2023. The last measurable factor is the CO₂ emissions. As mentioned, the local emissions of electric cars are zero, so CO₂ emissions are expected to decrease; this means that the unnecessary CO₂ quota can be sold. Figure 5 displays average CO₂ emissions per km for new passenger cars. We can see that the values are the best in western and northern Europe.

Overall, it can be concluded that, from an economic viewpoint, many negative effects of electric cars can be observed. However, there are factors that are more difficult to quantify. According to PwC's analysis, these factors are:

- "acquisition of new sources of research and development
- acquisition of infrastructure development sources
- expanding the capacity of the domestic automobile manufacturer
- expansion of the automotive supplier range
- expansion of related technology products
- expansion of non-related technology products
- creating new jobs

- strengthening and building international relations” (PwC, 2014)

To get the full picture, it is important to mention that, in addition to the above, there are analyses that prove that electric cars do not pollute less than cars with internal combustion engines. One study made by German experts was widely attacked. In response, VW conducted its own analysis. They compared the CO₂ emissions from an electric and a diesel engine for the same type of car. According to VW, the diesel car has 21g/km higher CO₂ emissions.

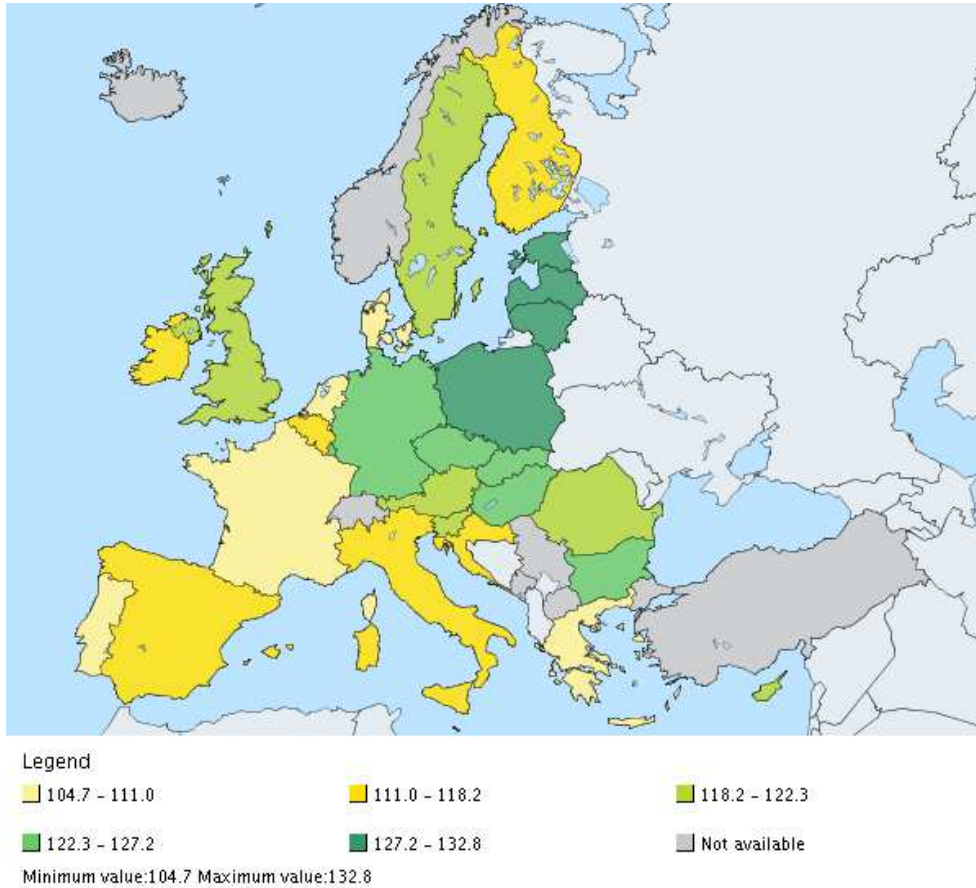


Figure 5. Average CO₂ emissions per km for new passenger cars
Source: Eurostat

In addition, it is important to note that the raw material market is highly concentrated, with many countries having a monopoly position. To measure market concentration, we selected the Herfindahl-Hirschman index and examined the value of some of the raw materials needed to produce the lithium-ion battery. To highlight two, the index for cobalt is 5326 and for natural graphite is 4444. According to the literature, if the index is above 2500, it is a highly concentrated market.

The price of cobalt has a strong influence on the price of batteries and of electric cars. Forecasts say that if the price of electric cars were more favourable, they would soon become more popular. However, the price of cobalt has been very volatile in recent years, which is also confirmed by Figure 6.

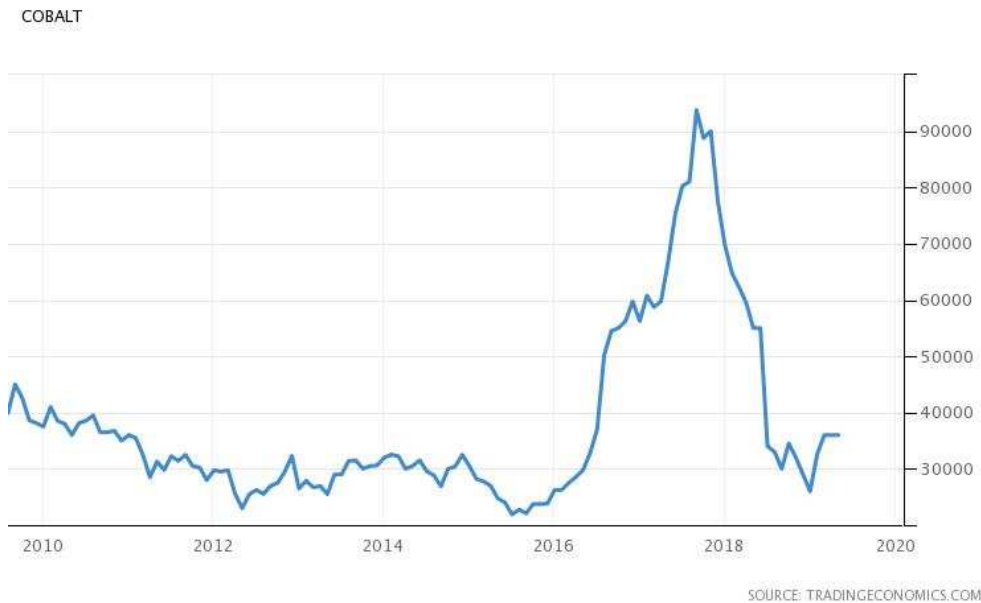


Figure 6. Price of cobalt, 2010-2019 (USD/MT)

Source: Tradingeconomics.com

As a final factor, we would like to write about the impact of electric cars on the labour market. If electric cars become more widespread, this will have repercussions on other areas, including the automobile industry and the labour market, due to the simplicity and shorter time needed to produce electric cars. For an internal combustion engine, the number of hours required to assemble the engine is 3.5, and for an electric motor, it is only 1 hour, according to Alix Partners. The German Automotive Association has calculated what could happen if internal combustion engines are banned in Germany in 10 years. They concluded that as a result more than half million jobs would be lost within 10 years, and two-thirds of the job losses would come from car manufacturers and their suppliers.

In summary the impact of raw materials and electric cars on the economy and the environment is diverse and constantly changing. For this reason it is important to keep track of changes.

4. What is the future?

Many people see one of the biggest disadvantages to electric cars as its low operating range. Another problem is the fact that after its battery is discharged, a lot of time is required for recharging. Battery researchers are focusing on extending the operating range of cars, increasing the capacity of batteries and reducing the charging time. The design of the future by one automotive factory is production of a car with a 640 km operating range and a charging time of nine minutes. If this dream comes true, it means the next step of life of electric cars, because it makes them a sustainable solution to replace traditional cars. Prototypes are expected to be available at the beginning of 2021. The final problem is the price; the cost of such an electric car is around USD 100,000. In spite of the price, forecasts show the market share of electric cars is expected to grow several times higher than the 2017 figure of under 5% in the next 10 years.

A pessimistic survey from DERA shows that cobalt consumption in the area of e-mobility will likely increase from 8.2% to 26% by 2026 and 55% of this consumption will be used in battery production. According to another survey from Bloomberg, consumption of materials like cobalt, graphite and lithium will increase from less than 1,000,000 metric tons in 2018 to 7,000,000 metric tons in 2030. This can be seen in Figure 7. From these predictions, we can assume that in ten years a large number of batteries will be using cobalt and sales of electric vehicles will have increased considerably.

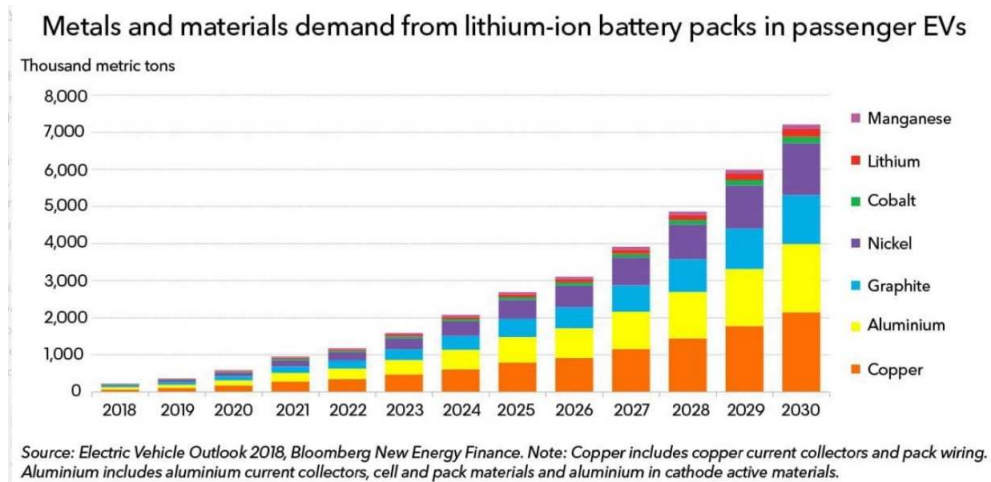


Figure 7. Metals and materials demand from lithium-ion battery packs in passenger EVs

Source: Elektromos autók: lesz-e elég akkumulátor? (2018.12.31.)
(<https://kiszamolo.hu/elektromos-autok-lesz-e-eleg-akkumulator/>)

It is important to consider demand from customers, since the problems described above have a significant effect on the market for electrical cars. An international research study surveyed customers in 2015 and 2018 on their opinions about electric cars. It found that the concerns of customers during the purchase of an electric vehicle. The three main problems are – as mentioned above – the price, the operating range and the charging time. Interestingly, the number of potential customers concerned with the range and price dropped by 10%, while a larger number of people listed charging time as a negative factor in 2018. These factors should be taken into account in the design of electric vehicles.

5. Conclusion

We are living in a world where innovations follow each other day by day. We are eye witnesses to the phenomenon that a now-new technology may be obsolete by tomorrow, replaced by something even newer. In our opinion this is true for transportation as well. Scientists are looking for new, better solutions for problems. This tendency affects the constantly changing list of strategically important materials, elements and countries. Based on forecasts, the lead price of new technologies will decrease and the consumption of expensive critical materials during production will also decrease, contributing to lower prices for electric vehicles. In summary, critical materials have a serious effect on transportation, but new research is focusing on improving technology day by day, to find smart solutions and implement their findings that will make this industry more sustainable and will influence (and be influenced by) the list of critical raw materials.

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