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EDUCATIONAL RESOURCES AND THE INVESMENT IN HUMAN CAPITAL IN PRE-UNIVERSITARY STUDIES

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Abstract: *The purpose of this research paper is to address the need to finance Romanian education considering the changes that have occurred or are about to take place in this field, both in terms of providers and beneficiaries of educational services, as well as in terms of the content and material basis inherent in the teaching of new content and teaching methods. Highlighting the changes and linking them to the costs they entail, reveals the need to rethink educational policies regarding a new funding model focused on spending targets and expected results. Investment in human capital is identified as economic value for individuals, institutions and society. The effects of these investments produce global economic mechanisms. The human capital theory extends the concept of capital, starting from the education-qualification, skills-earnings relationship. Expenditure on formal education, adult education, education services in various areas that help individuals to get into the labor market is considered an investment in human capital.*

Keywords: *education; resources; finance; investment; human capital.*

JEL Classification: *I2.*

1. Introduction

Education, a process carried out in various forms and with various methods and purposes, is present in society's life since ancient times, proving its effectiveness as a builder of attitudes and behaviors, as well as personal, social, and professional skills and acquirements. The individual's personality depends fundamentally on education, with two other factors associated: heredity and the environment, according to the pedagogical theories of Comenius and Pestalozzi onwards.
At the beginning, teaching was organized at home with private teachers, and it was accessible only to wealthy families, precisely because it involved financial, material and human resources that only these families could have. Subsequently, education was institutionalized by the State and began to take place in schools. Later it became even compulsory because, on the one hand, it proved beneficial not only for the individual, but also for society, and on the other hand, because institutionalization allowed the State to control the contents, teaching methods, teachers and, finally, the type of person desirable to society, as the finality of the educational process (Arries).
Regardless of how it was organised and carried out, education involved investments that conditioned the quality of the resources involved in this process, as well as the achievement of the fundamental goals pursued. In many countries (the UK, for

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example) higher education funding is transferred from the state to students' attribution (Johnes, Johnes, 1994). In such countries, there is a culture among parents that consists of saving money since the birth of the children in order to have the funds needed to access higher education by the time they will grow up. Besides, students receive advantageous loans to support higher education fees, loans that they must repay after graduation and employment. At the same time, there is a concern in ensuring a system and level of salary for graduates of higher education that is motivating and allows the repayment of the accessed loans.

Nowadays the resources needed for quality education are increasingly varied and sophisticated, whether we are talking about human, material or financial resources. The purpose of education in schools is to guarantee the workforce for the future, and this scope requires the school to be one step ahead, the teachers to have forward-looking and creative skills and abilities as well as material resources and the most advanced learning technologies. All of the above implies considerable financial resources.

For the first time, the concept of human capital has been by emphasized Beker (1975), that it is worth trying to invest in human capital, consisting of expenditure on education, training, and healthcare, with the role of increasing labor efficiency and economic development. Most of the expenditure has to be investment in human capital, i.e. investment in training that will increase the income of individuals depending on the level of their education. It supports its theory with convincing examples of direct expenditure on education, health, and internal migration that have been converted into work opportunities. As an example, we can mention the earnings of adult students who are studying and later get employed or are trained at their workspace.

2. Human resources

The human resource theoretically is composed of the entire population, that is, the active and inactive member of a geographical location. To achieve the objective of work, it coordinates a weighted duality: Schooling and improvement, thus affirming the social and economic nature of the concept. In the everyday world, this is corresponding and growing in proportion to the social ability of the human being, with the force of integrating the purpose into the employment. Ability and human strength are in direct connection with labor resources which on the other hand have a deep economic nature.

Human resources symbolically reveal an economic branch of an institution, and from a practical point of view, they put in a common context all the people who bring or do not bring income to society. Human resources are suffering major changes as the population grows globally and are standardizing, as we taking into account the volume of work.

The term of human resources is given special importance in foreign specialized literature, both in terms of organizational management as well as at a macroeconomic level. The economist Jean-Didier views human resources as material points in the advancement of the economy, and economic demography

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defines it as: "the study of the possibilities of integrating the population in economic analysis and the consequences that result" (Lecaillon, Jean-Didier, 1992) moreover, he states that "the notion of human resources must be placed at the center of economic analysis.

The concept of human resources is given great importance and attention by specialists in the period 1920-1930, a period of economic flourishing, preceding the great economic crisis. Big companies employ economists to analyze institutions from a human point of view. Thus Wastern Electric entrusts Elton Mayo with an experiment at one of their factories in Hawthorne. The experiment took place over eight years, between 1924 and 1932, and concluded the following: there is a Hawthorne Effect that led to a change in human behavior; the influence of the group on the individual is strong; recognizing the importance of the individual´s need to be integrated into a group are much more important factors than the salary and working conditions.

Teachers, auxiliary teaching staff, non-teaching staff, pupils, parents and members of the local community are the human resources of an educational establishment. Specifically, the concept refers to staff employed in schools and draws attention to the development and practical use of human resources (Davidoff, Lazarus,2002).

If in the past one teacher per class was enough until the seventh grade, nowadays, there are specialized teachers in each discipline not only starting from secondary school, but even some of the subjects of the primary cycle are taught by specialist teachers. With the diversification of the requirements needed in the labour market, new specializations have appeared, and therefore new disciplines that need specialized teachers. Alongside schools, new related institutions have been set up, such as Children's Palaces, sports schools, after-schools, etc. which were focused on developing children's vocational skills, at the same time taking over some of the family's tasks in preparing lessons and doing homework. Institutions for children with disabilities have also been established in order to meet specific social needs.

Education plays a crucial role in the preparation of human capital and its development. The importance of education is also relevant for A. Krueger who shows that the differences in human capital stock are due to half of the gap between resident's income in the US comparing to the income in developing countries, which leads to the conclusion that this factor is more important than all the other factors together (Krueger, 1968).

We are considering two categories of changes that are required regarding teachers: quantitative changes and qualitative changes.

Quantitative changes refer to a correlation of the demand with the supply of teachers in special fields, this way it wouldn't be a shortage of teachers in some school subjects, in which case we will have to turn to unqualified teachers, as opposed to an overage in other subjects in which case some of them would not be needed any longer. This relation between the demand and the supply can be possible with rigorous planning of the staff needed in education, based on demographic studies at a national and local level.

Qualitative changes target closer recruitment and selection of teachers presently with their adequate scientific and psycho-pedagogical training. To this end, they can

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implement educational policies and strategies according to the demands of future society.

All these needs and their associated institutions require a specialized and motivated human resource to carry out its activity in this field. For this great purpose is essential funding, mainly from the State, starting with initial vocational training, wages and also for continuous vocational training, in order to be up to date with the latest developments in the activity's field and to update the curriculum to this news.

Teachers must demonstrate competence, i.e.: the proven ability to select, combine and use appropriately the knowledge, skills and other information available to them, consisting in the ability to responsibly solve situations arising in the teaching activity for professional development chasing the purpose of obtaining the performance (www.formare.eu, without year).

The professional standards for advancing in the didactic career are represented in
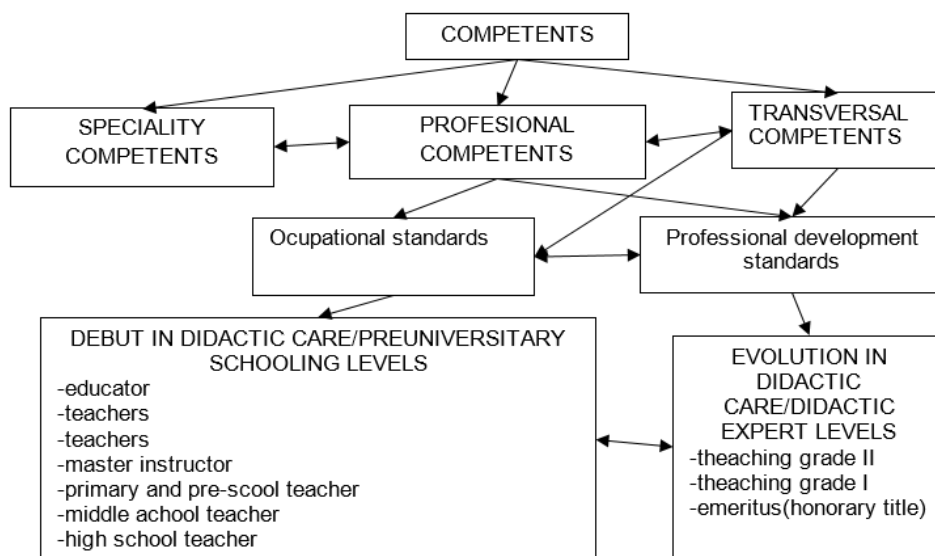
Figure no. 1: Professional standards for advancing in the didactic career

Teacher´s motivation and productivity levels may become a concern of society as financial resources allocated to them will continue to be less in a service model economy and teachers' professional requirements will continue to grow due to social change (Robert C .;, Judith, no year)

3. Material resources

Along with human resources, material resources are also of major importance in the educational process. From blackboard and chalk, textbooks available for several generations, to computers, tablets, internet, servers, learning platforms, access to

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online learning resources, cameras, teaching software, etc., these resources become more, better improved, but also more essential.
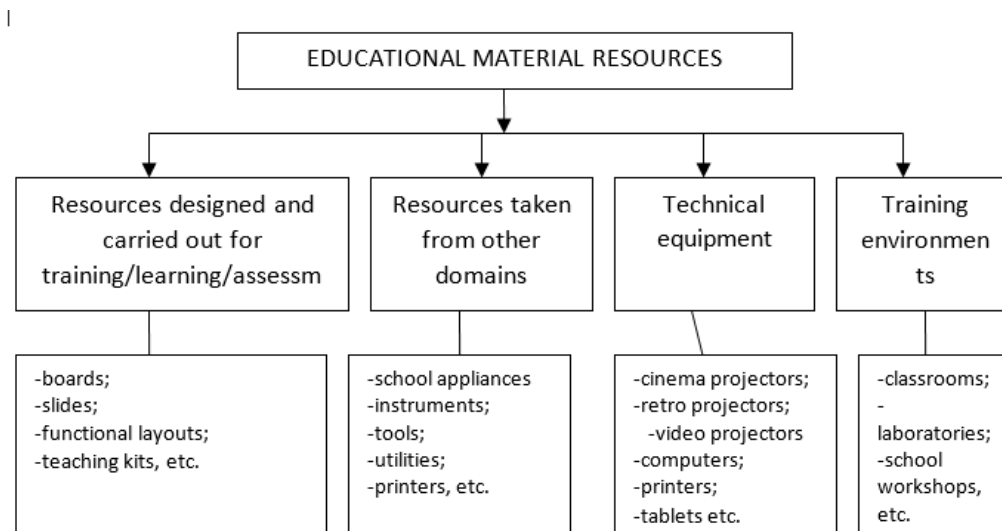
Figure no. 2: Educational Material Resources
Source: processing by, (https://www.academia.edu/, 27.10.2020)

4. Financial resources

Nicholas Barr, in his paper, *Higher Education Financing: Lessons from Economic Theory and Reform in England,* pointed out that "education funding faces a clash between technological advances, increased demand for skills and fiscal constraints". (Barr, Nicholas, 2009)

In Romania, according to the Law of National Education (Law No. 1/2011, with subsequent amendments and additions), community education is free and includes *basic funding,* based on the standard cost per pupil, according to which "financial resource follows the *student*", without the additional *instatement* providing capital expenditure, social expenditure and other expenses associated with the state pre-university education process and additional *funding* (funding of national programmes of the Ministry of Education and Research, financing of national social protection programmes, financing of competitions organised for pupils, sports competitions, national and international Olympics, expenditure on the issue of study papers, scholarships for pupils, organisational expenses and conduct of national exams, vocational training, etc.). (Education Act, 2011)

The financing of pre-university education is provided from the state budget and the local budgets: the state budget provides staff costs, increases of any kind, the food norm and contributions to the social security budget, and the administrative-territorial units with material expenditure, expenditure on the staff professional training, social assistance, repairs and investments in educational establishments.

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In the countries of the European Union, the funding responsibility lies in the school's management, with exceptions where teachers are also involved in decision-making. The full Director's responsibility for financing the educational establishment can be found in countries such as Hungary, Slovakia and Estonia. In England, Slovenia, Belgium, Northern Ireland the responsibility lies in the Director's hands, in Germany, Austria, Scotland and Malta, teachers and the Director are responsible for funding. The only countries where the system financring decisions are not taken at the school level are Romania and Cyprus. The schools' esponsibility is related to the operational expenses and the purchase of the technological materials and equipment necessary to carry out the teaching activity (Tuşa, Voinea, Dumitrascu, 2012).

5. Human capital

Along with the term "human resources" another term was conceptually analyzed in the seventh decade of the twentieth century, named "human capital" by Kiker, B.F., This term was used long before the economic and social life as we know it. Kiker, B.F. aimed at estimating the monetary value of the human being, identifying two methods: the production cost procedure - estimating the net costs of the "production" of the human being in its development, without taking into account the "maintenance" costs; and the capitalized earnings procedure - estimating the current level of past and future income (Kiker, B.F., 1971). Referring to the same concept of "human capital", Adam Smith defines it as the skill and training necessary for man represented as a mechanism involving expenditure, but also profit through his ability to produce (Adam Smith, 1962). Employees were observed, in the traditional theory of the institution, as per their ability to perform in a "disciplined" certain predetermined working tasks, used certain machines and technological devices or carried out certain activities. This is how the concepts of "labor" or "labor force", unfortunately, are used today. The objective was to carry out the decisions of the leaders, according to the pre-established rules.

Three other theorists: Theodore Schultz in the 1960s and Arthur Lewis followed by Gary Beker in the 1980s and 1990s developed the concept of human capital. They issued and supported the idea that people, in addition to a reachable financial capital (bank accounts, stocks, reserves) have other kinds of capital that consist of knowledge, skills, abilities, and qualities. Based on this idea, Gary S. Beker (1975) pointed out, for the first time, that it is worth trying to invest in human capital, consisting the spending on education, training, health care as a tool to increase work efficiency and respectively, economic development. Most of the resources should be invested in human capital more specifically investment in training and education that will increase the income of individuals following their education level.

Gary S. Beker considers education and training to be the most important investments in human capital. Analyzing this aspect, he finds out the following: the earning of an individual increase; as they get older but usually at a decreasing rate. The growth rate has a positive correlation with the qualification level; unemployment rates tend to be inversely correlated with the level of unemployment; those who change jobs more often are younger people, who also benefit from more training and preparation

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at work compared to older people. The distribution of earnings, in the case of specialists and other qualified employees, has a positive rate. The beneficiaries of education and other types of training are more professionally prepared; market dimensions limit the division of labor; the employers who invest more in the human part of the business have a clearer vision of the market and therefore it is possible to have an advantage over the employer who pursues only the financial / material part of the business (Gary S. Becker, 1997).

He sustains his theory with compelling examples of direct expenditure on education, health, and internal migration that have capitalized job opportunities. Such are the earnings anticipated by the adult students who attend to school, get hired and are trained in the workplace.

Scientists along with the creators of the concept advocate the correct use of the two terms: "human capital" and "human resources".

They define the human element in the institution as human resources, this is different from the financial, informational, material resources, which are useful to the institution through what they can do. Human capital is something that someone owns, it has an intrinsic value for individuals and society, while the resource is what can be transformed, used or exploited in order to have a benefit.

The governments and the private institutions in the market economy (private schools, consulting firms, departments/services for employee training within institutions) play an important role in directing the human capital formation and development, they pursue a higher human capital formation. The financing is made from the public budget and the people´s private expenses. The main beneficiaries of human capital development are the participants in training and development courses.

Among the physical capital, the knowledge capital can be acquired through education and can be improved through continuing education, as well as the physical capital, and it can make a profit in the form of productivity, which is the wealth of anyone who owns it. Human capital cannot be separated from its holder, while other types of capital can be detached, and its value depends on the ability of the human capital holder to apply their knowledge in an economically profitable institution.

6. Investing in education, premise or effect of economic development?

The transition to a market economy requires changes on the problems of training and ability to increase professional level. In order to achieve a satisfactory result in this domain, efforts must be made so that the process to be a natural one and have a great quality and especially to concorde with to expected goals of the set by the general manager in this field. New employees and young members must be guided in order to become independent as soon as possible, to be able to demonstrate their capabilities, to be prepared to take on technical-productive and economic-social responsibilities.

The professional training of the active population is of major importance for the entire national economy, but also for the economic success of the organization from which is part of. As a result, investments in vocational education will prove profitable in the

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medium and long-term, being considered investments for the future. This ascertainment is the basis for the decision of the organizations and administrative bodies to ensure, at their expense, the vocational training of adults and to allocate considerable resources for professional development.

The quality of the entire process of training and raising the professional level is, without doubt, the result of a set of interdependent actions related to modernization; speed; ensuring the intellectual mobility in which the capacity of the graduates' preparation process competes according to the current experiences/expectations, arming them with the necessary knowledge, with study and lifelong learning skills, forming prospective, anticipatory thinking; structuring the training process; endowment with teachers, with the technical-material base and didactic equipment; monitoring; obtaining a higher yield of the entire permanent education, etc.

Consequently, all these requirements imply convergent actions and prompt reactions to the development needs in order to reach the performance standards pursued in the scientific and technical training of human resources (Petrescu Ion, 2003).

Countries such as Finland and Switzerland are recognized through the performance of a quality education offered to children of all levels, so the main factor that prevents early school drop off is the quality of education.

Therefore, investing in education is inevitable and adds value to the beneficiaries in the first place and to society. Educational policies should focus on quality, efficiency and performance.

Ensuring quality teaching services, the activity of teachers from all levels of education has a medium and long-term influence on the evolution of student training and also for society. Teachers are required to have a high level of training, skills and complex skills to fulfill the role of trainer. Vocational training links the level of training of teachers with quality services in interaction with students and society. Hence the need for continuous professional training of teachers in the process of the resilience of skills that require modern but realistic approaches to education reforms (https://aid-romania.org/wp-content/uploads/2020/02/   A.3.1_livrabil-final-fara-anexe.pdf, 2019).

Adam Smith, in "The Wealth of Nations" states that "an educated person by his extraordinary dexterity and skill can be compared to an expensive machine" (Smith, 1962). A 1974 study reveals the correlation between the increase in lifetime earnings and the number of school years (Mincer, Schooling, 1974).

Investments in education, training and migration, but also a part of the current living expenses (food and journeys' costs if the beneficiary of the educational service cannot commute daily) are elements identified in the structure of investments in human capital.

The inclusion of the investments in productive human capital increases their corresponding benefits and leads to a surprisingly increased real labor income.

Due to the ignorance of the role of human capital in general, in poor countries nonhuman capital has been slowly absorbed (Shultz Theodore, 1968), (Gary S. Becker, 1997).

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Investments in human capital are identified as economic value for individuals, institutions and society. The effects of these investments produce global economic mechanisms.

The theory of human capital extends the concept of capital, starting from the relationship between education-qualification, skills-gain.

Expenditures on formal education, adult education, education services in various fields that help individuals to place on the labor market, are considered investments in human capital.

Investment in education is characterized by the attribute of producing effects that cannot be separated from the people's knowledge, skills, health or values, as may be the case with other forms of investment in tangible or financial assets, which may have a different movement than their owners.

Monetary and non-monetary efforts have as a result an improved human capital. Its effects are complex and there are not just gains in the labor market. So investments in human capital are preferably measured in terms of their effects because it is difficult to identify the contribution of different categories of monetary and non-monetary efforts and to delimit investment effects from those of a consumer and mixed nature. This alternative is based on the assumption, supported by the classical theory of human capital, according to which any capacity acquired as a result of investing in human capital, which influences its earnings, although it cannot be sold, results in increased income (Fabricant Solomon, 1959).

Education and training play an important role in the European strategy, especially in the integrated guidelines, the Member States 'national reform programs and the country-specific recommendations, to guide Member States' reforms. One of the main objectives of the Europe 2020 strategy is an early school leaving and the rate of graduation from tertiary education or equivalent (strategic, 2012).

The specialists, Ana Popa, Anghel Nicolae and Mirela Cristea claim that education is an unproductive field, and the efficiency of investments made in this field follow three main elements: the investment effort necessary to achieve the goal; the effort to maintain and capitalize on their operation; the effects achieved following the execution of these objectives.

Investments made in education produce direct and indirect effects: direct effects: -social nature such as increasing the quality of education, which are difficult to measure; -economic nature, assessed in terms of various incomes and savings as well as reducing the time which requires a better identification; and indirect or propagated and very complex effects, which are considered to be the economic effects, evaluated according to the increase of the gross and net domestic product, the decrease of the material expenses and the increase of the economic agents' profit.

In education, the indicators of assessing the efficiency of investments are natural and valuable.

Education is considered by all states as a decisive factor in economic development and a significant investment.

By including the productive population in educational activities, the expenses regarding the cost per student and the expenses regarding the material investment

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for the good functioning of the educational process and the expenses for constructions are considered as investment effort.

The direct effects are recognized at the economy's national level as well as at the individual's beneficiary level by the numerical determination of the educated individuals on various levels, and indirectly are found in the increase of the national product, the increase of the export, etc. (POPA. A., NICOLAE, A., CRISTEA. M,, 2000).

There is no doubt that developed countries provide more consistent funding to education, as presented in the following graph:

Chart no.1: Percentage of GDP allocated to education in EU countries, in 2018
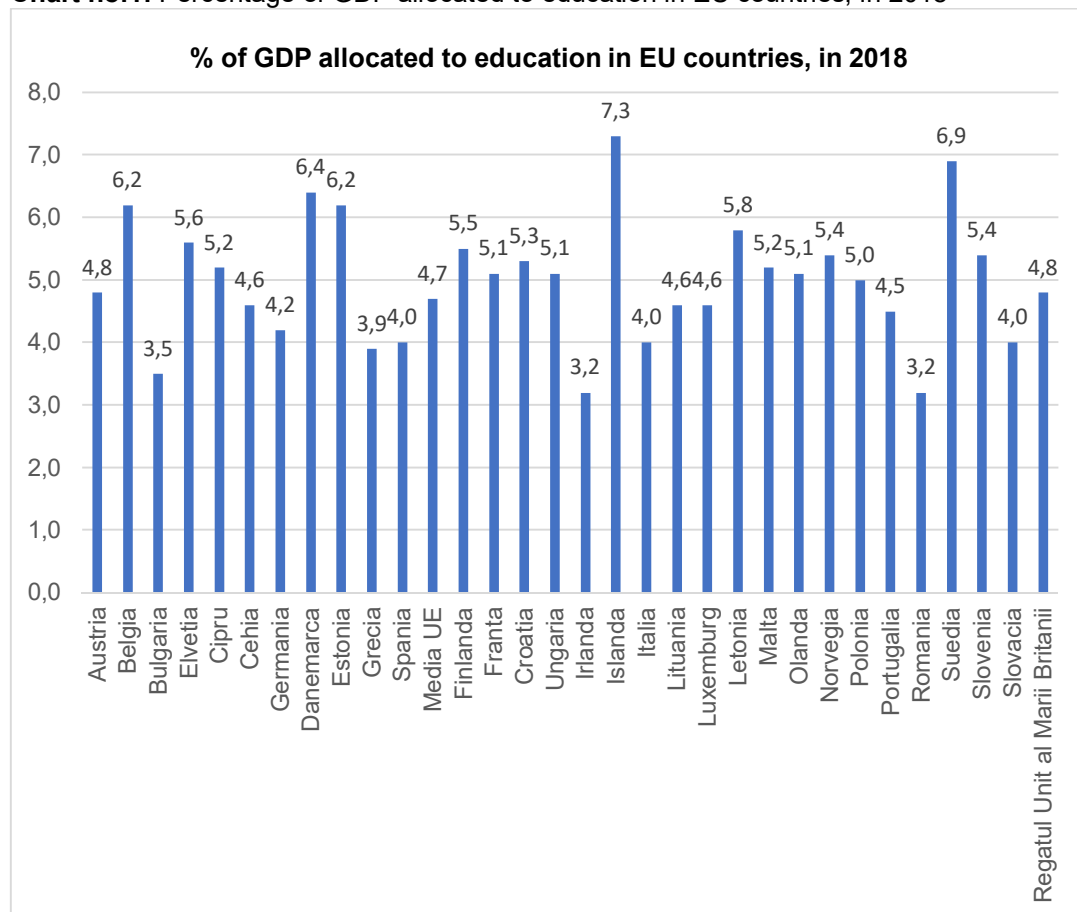
Source: Eurostat, http://appsso.eurostat.ec.europa.eu 28.10.2020

It can be observed that countries such as Iceland, Sweden, Belgium, Denmark and Estonia allocate more than 6% of GDP to education, Iceland even 7.3%, followed by Switzerland, Cyprus Finland, France, Croatia Hungary, Latvia, Malta, the

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Netherlands, Norway, Poland and Slovenia, countries where education funding represents more than 5% of GDP, therefore above the European average of 4.7%. The level of the rest of the countries corresponds to the European average or even lower, Romania allocating only 3.2%, the same as Ireland.

However, there is also an emphasis on the economic effects of quality education, and this has been demonstrated by numerous studies (...).

The relationship between education and economic growth is going in two-ways:
education ↔ growth

In these circumstances, the question is *what should we start with?* With sustained economic growth which, in turn, allows for a consistent investment or with a major investment in education leading to economic growth. Some theories support one or the other of the two alternatives.

In fact, there must be a perpetual balance, flexibility and adaptation of educational and economic policies, a correlation of them so that the two wishes can be achieved.

7. Conclusions

Education, to a greater extent than other fields of activity, is under pressure and needs a change, which is the reason why it is constantly looking for solutions that could make possible the preparation of the present generation for the demands of the future. The anticipatory nature of education involves creativity and innovation both curricular and methodologically. This can be achievable with a solid initial training of teachers, conjunctively with continuous vocational training with the help of material, financial, informational and methodological resources.

Government policies face the dilemma of increasing spending on education, versus allocating funds for several punctual and imminent problems. Investing in education shows its effects in a long period of time and it should not be lost from sight of this reason. The future of a nation depends on the quality of education, and quality education requires expensive resources.

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ROMANIAN BALNEARY RESORTS PROMOTION ON SOCIAL MEDIA

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Abstract: *On the whole world level, the number of social media users is increasing. Even though it is assumed that social media in hospitality and tourism industry is used under its own potential. According to the statistics the most frequent used social media channel in Romania is Facebook, considerably in front of other social media channels. The aim of the research is to analyze the presence of balneary resorts promotional activity on Facebook and YouTube, from the specific indicators' perspective analysis. The results show an under valuation of these channels in spite of their use.*

Keywords: *social media; balneary resorts; promotion; tourist destination; Romania.*

JEL Classification: *M30; C80; L83.*

1. Social media and tourist destination promotion

Social media is a set of applications based on web 2.0 technology which allows the transmission and retrieval of content by their user. Users can share thoughts, exchange opinions, upload photos and videoclips, they can create groups based on common interests and participate in live discussions. Social media can be communicating support for promotional messages but also important means for information retrieval, direct interaction, reaction recording and direct exchange of information between consumers and so on.

The diversity of social media channels is very high and constantly dynamic. They exist under different forms: social networking sites such as Facebook, Twitter and LinkedIn; review sites, such as Booking, Yelp and Trip Advisor; image sharing sites such as Instagram, Imgur, Snapchat, Flickr; video hosting sites – 52% of the marketers say that video clip is effective for brand awareness (Zeng and Gerritsen, 2014), such as YouTube or Vimeo; community blogs like Tumblr, CNET.com, P&G's Vocalpoint; discussion forums such as Reddit, Gaia Online, Quora; collaborative (or shared) economics network such as Airbnb, Rover; collaborative websites like Wikipedia; virtual worlds or virtual reality such as Second Life; social games (Mafia Wars); business communities (eBay, Amazon.com, Craig's List, iStockphoto, Threadless,com); podcasts; news sites (TV current); social bookmarking sites which allow users to communicate stories online, music, videoclips (Digg, del,icio.us, Newsyne, Mixx it, Reddit).

Worldwide, the number of social media users is continuously increasing reaching as of 2020, 2.96 billion users.

"Growing dynamics of SM (social media) suggest that it is not a fad" (Bonson et al, 2015). Promoting has to follow the targeted clients on their social media preferred channels; thus, advertising on social media channels became a necessity.
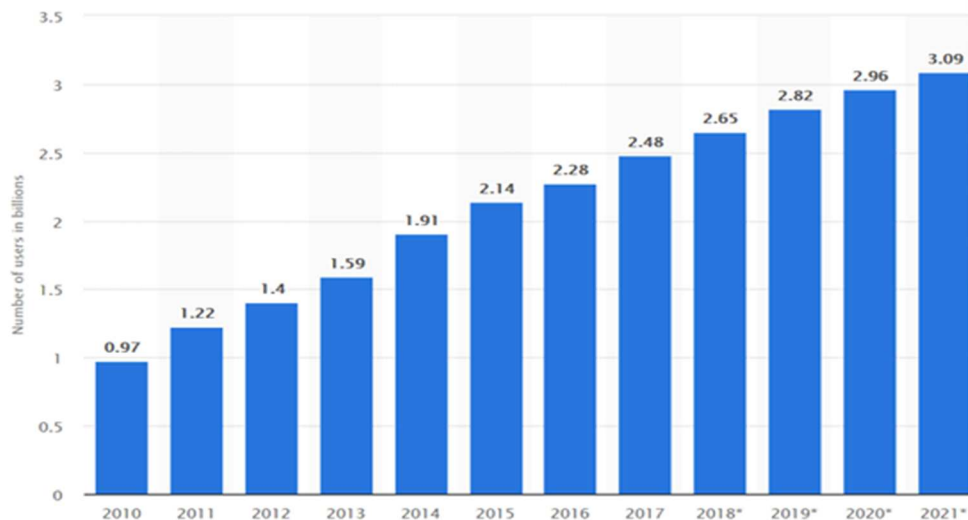
Figure 1: Number of social network users worldwide from 2010 to 2021
Source: Statista 2020, https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/ accessed in 7 February 2020

Advertising on social media sites has many advantages (Dehghani and Tumar, 2015):
- "to attract consumers' attention and address customization of their needs,
- (...) to encourage users to share the brand image and to develop free advertising,
- (...) is a less expensive solution than taking the risk of paying large sums to advertise in non-virtual media,
- (...) brands can speed up consumers' information dispatch,
- (...) consumers have more opportunities to increase viral messages created by advertisers to their contacts through Facebook,
- social media such as Facebook act as a check on the credibility of brands.

(Jorge et al., 2020) states that "is a growing interest in social media usage in tourism industry and the existence of empirical evidences that support the strategical importance of these platforms to achieve a better competitiveness of this industry...".
(Leung et al., 2013) analyzed 44 articles regarding the use of social media by consumers and providers, especially in the field of tourism and hospitality. The findings of their study show that "social media appear to be a strategic tool that plays an important role in tourism and hospitality management particularly in promotion, business management, and research functions" (Leung et al., 2013). Also, social

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media increasingly influence destination awareness and decisions on destination selection (Tussyadiah and Fesenmaier, 2009).

However, it is appreciated that social media is used by the tourism and hospitality industry below its potential. "The online world is rapidly evolving and some companies may embrace new technologies due to the pressure to "be digital" but are not thinking about what it means to the business in a virtual environment" (Leung et al., 2013). The mere presence on the Internet is not enough; this can show the weaknesses of a company: rigidity, inability to interact (in a timely manner), inability to dialogue, etc.

2. Research Methodology

The purpose of the research is to analyze the Romanian balneary resorts presence on social media channels in order to promote their offer.

The research objectives are:

- to identify which social media channels are the most used by the Romanian balneary resorts;
- evaluation of the balneary resorts presence on social media channels, according to the performance indicators specific to the channel.

The research methodology consisted of analyzing the presence of Romanian balneary resorts on social media channels. Each social media channel was analyzed according to specific indicators. The data was collected directly from the internet during February 2020-March 2020.

The research hypotheses were made starting from the already registered data. Compared to the European average, Romania expose lower values related to the advertising over the Internet. Compared to an average of 25% in European Union, only 12% of Romanian companies make use of Internet advertising. In what concern social networking only 29% of Romanian companies use them for promoting activities, compared to 42% in the E.U. (Bertea, 2019).

By far, the most used social media in Romania is Facebook, followed, at great distance by other channels, as shown in Figure 2.

In this study we analyzed the presence of the balneary resorts on two of the social media channels, namely, Facebook and YouTube.

The hypothesis considered in the study were as follows:

H1. Over 50% of the analyzed balneary resorts are present on Facebook;

H2. Less than 50% of the balneary resorts having Facebook pages make use of all the indicators needed to assess the success of the presence on Facebook

H3. The age of the Facebook page does not affect the number of likes.

H4. Over 50% of the analyzed balneary resorts are active on YouTube.

H5. The age of posting on YouTube does not affect the number of likes for that post.

H6. The length of the videoclip does not affect the number of likes.

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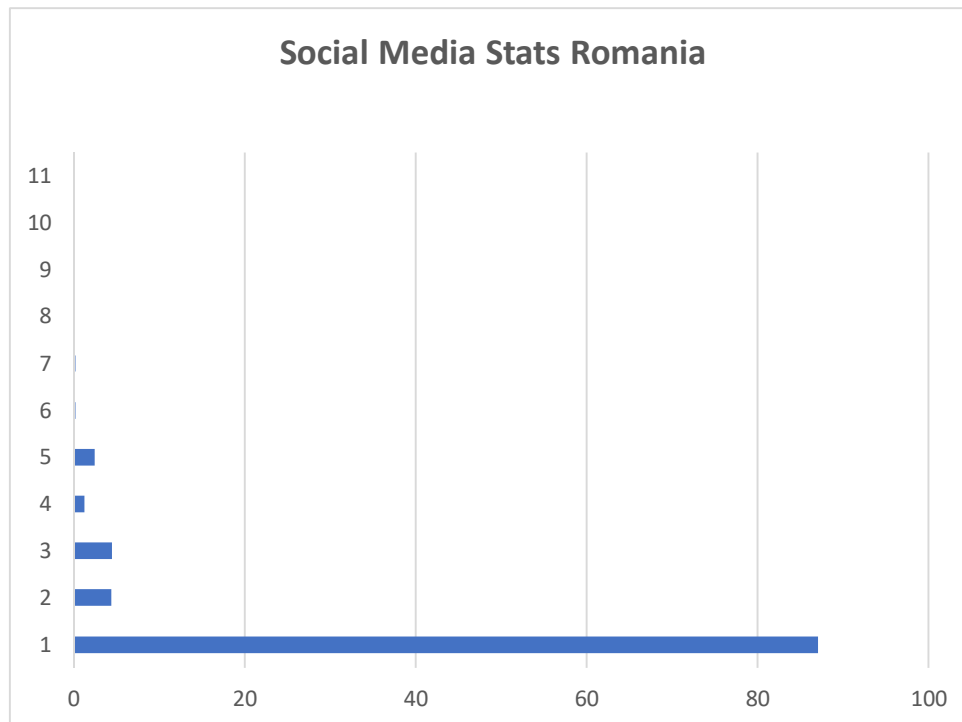
Figure 2: Social Media Stats in Romania in January 2020
Legend: 1-Facebook, 2- Pinterest, 3-Instagram, 4-You Tube, 5-Twitter, (6-Tumblr, 7-reddit, 8-LinkedIn, 9-VKontakte, 10-Google+, 11-Other)
Source: StatCounter, Globalstats, https://gs.statcounter.com/social-media-stats/all/romania accessed in 7 January 2020

The research stages were:
- The identification of balneary resorts, using for this the existing official sources;
- Collecting the official social media webpages (Facebook, YouTube) which promote the destination – touristic resort as touristic destination;
- Analysis of the social media webpages according to criteria specific to that channel.

For this research, we selected a number of 34 balneary resorts from the list offered by the Ghidul stațiunilor balneare (Ministerul Dezvoltării Regionale și Turismului, 2011), as shown in Table 1. According to Ordinance no. 109 of August 31, 2000, (Art.1, pct.a) balneary resort is defined as "the locality and / or the area that has resources of mineral substances, scientifically proven and traditionally recognized as therapeutically effective, of specific facilities for the cure and that has an organization that allows the granting of balneal medical assistance in appropriate conditions".

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According to H.G. no. 1016/2011, for 29 resorts was granted the status of balneoclimatic resort and for 4 the status of balneary resort. According to H.G. no. 1072/2013 was granted the status of balneoclimatic resort for 23 resorts. Some of the balneary resorts from Ghidul stațiunilor balneare (Ministerul Dezvoltării Regionale și Turismului, 2011) have been declared balneoclimatic resorts (in late 2011 and 2013). We kept the classification from the Ghidul stațiunilor balneare (Ministerul Dezvoltării Regionale și Turismului, 2011) because this aspect does not influence the present research. For each of them we search for both their official pages on social media (for the case they have one) as well as forms of promotion initiated by third parties (physical or legal), being included in the results only those sites which promote the entire resort.

3. Results and discussion

Searching and collecting information from the official Facebook pages has been done in February 2020 (Table 1). Facebook pages were created between 2009-2017. Among the stations analyzed, 82.35% have Facebook page, so H1 hypothesis is validated. Each page has as indicators of popularity measurement: number of Likes on the Facebook page, number of Facebook page followers, average of evaluation on Facebook page, evaluations number on Facebook page, number of recommendations.

Table 1: The Facebook pages of Romanian balneary resorts

Balneary resort/ Facebook address/created page	L	F	V	ME	NoE	R
Amara/18 februarie 2015 https://www.facebook.com/statiuneaamara/	1940	1982	3621	4.3	82	-
Bazna/21 februarie 2014 https://www.facebook.com/statiuneabazna/	1570	1590	3121	4.5	120	-
Băile 1 Mai/ 20 mai 2014 https://www.facebook.com/VisitBaile1Mai/	898	919	31	-	23	2
Băile Felix/19 august 2012 https://www.facebook.com/Statiunea.BaileFelix/	11.413	11.567	-	4.0	32	22
Băile Govora/26 ianuarie 2010 https://www.facebook.com/baile.govora/	8.792	8.844	5.137	4.9	44	25
Băile Herculane/22 februarie 2012 https://www.facebook.com/baileherculane.ro/	2.317	2.307	4	-	-	-
Baile Olanesti/21 decembrie 2016 https://www.facebook.com/OrasBaileOlanesti/	675	698	16	-	-	-
Tușnad/8 august 2013 https://www.facebook.com/tusnad/	4.918	4921	-	-	-	-

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Balneary resort/ Facebook address/created page	L	F	V	ME	NoE	R
Borsec/2 iulie 2013 https://www.facebook.com/LogicHost Ro/	1241	1244	19.768	4.3	408	53
Buzias/11 decembrie 2013 https://www.facebook.com/statiunea.buzias/	1.422	1.451	5.912	4.7	52	28
Calimănești-Căciulata /29 ianuarie 2012 https://www.facebook.com/ILoveCalimanesti/	4034	4046	-	-	-	-
Covasna/25 februarie 2016 https://www.facebook.com/visit.covasna/	17860	18034	-	4.5	32	23
Geoagiu Băi/20 mai 2011 https://www.facebook.com/pages/category/Community/Geoagiu-B%C4%83i-163569080372376/	2.331	2.353	-	-	-	-
Lacul Sărat	-					
Moneasa/13 februarie 2012 https://www.facebook.com/moneasaofficial/	2003	2020	-	4.8	21	2
Ocna Sibiului/29 martie 2013 https://www.facebook.com/ocnasibiu/	1281	1286	-	-	-	-
Ocna Șugatag	-	-	-	-	-	-
Praid/12 iulie 2009 https://www.facebook.com/pages/category/Local-Business/PRAID-TRAVEL-102039718462/	133	126	-	-	-	-
Pucioasa/19 aprilie 2012 https://www.facebook.com/statiunea.pucioasa	-	-	-	-	-	-
Sărata Monteoru/17 octombrie 2017 https://www.facebook.com/sarata.monteoru.ro/	1127	1151	6647	-	-	-
Sîngeorgiu de Mureș	-	-	-	-	-	-
Sîngeorz Băi/27 septembrie 2010 https://www.facebook.com/pages/category/Community-Organization/Sangeorz-Bai-1504260763200626/	4625	4717	2	-	-	-
Slănic Moldova https://www.facebook.com/SlanicMoldovaOfficial	11.569	11.724	-	-	-	-
Slănic Prahova	-	-	-	-	-	-
Sovata/20 noiembrie 2015 https://www.facebook.com/visitsovata/	1.056	1082	6	-	-	2

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Balneary resort/ Facebook address/created page	L	F	V	ME	NoE	R
Turda	-	-	-	-	-	-
Vatra Dornei/17 iunie 2013 https://www.facebook.com/IubescVatraDornei/	14.832	14.857	168	4.8	148	10
Vața de Jos/13 ianuarie 2011 https://www.facebook.com/pages/category/Community/Vata-de-Jos-183863564971213/ /	572	580	-	-	-	-
Voineasa/19 februarie 2011 https://www.facebook.com/StatiuneaVoineasa/	29.181	29.025	-	4.5	204	45
Eforie Nord/25 iunie 2013 https://www.facebook.com/Eforie-Nord-502122253201198/	958	965	-	-	-	-
Techirghiol/24 iunie 2017 https://www.facebook.com/StatiuneaBalnearaTechirghiol/	9.244	9.673	591	4.9	73	31
Neptun/24 iulie 2017 https://www.facebook.com/StatiuneaNeptunOnline/	554	568	-	5	3	2
Saturn	-		-	-	-	-
Mangalia/15 aprilie 2014 https://www.facebook.com/mangaliadragosteamea/ https://www.facebook.com/ILoveMangalia/?eid=ARB19jgnchlBrZ_DM5pfUTrqTbAJnpmB-FwZRd0szn6pJYDQzCxqGVWU370NeCvWBVW7n3Fghw_SSwE4 / 19 iulie 2013	11.407	11.478	-	-	-	-
	10.557	10.509	153	4.9	53	3

(Legend: L- likes on facebook page; F- followers on facebook page; ME- average of evaluation on facebook page; NoE- evaluations number on facebook page; R-number of recommendations)

Only 21,42% of the 82,35% balneary resorts having a Facebook page present values for all indicators which measure popularity on Facebook. Under these conditions we assume that H2 hypothesis is validated.

In order to verify the H3 hypothesis, we made an average of the Likes recorded on the page according to the year of setting up the page. Naturally, elder pages should have brought more likes since there was more time available for registering the Likes. Anyhow, we assumed that not the page's age gives its success, but the posting frequency, interaction, attractivity, etc. According to chart in Figure 3 neither ascending nor descending trends of the Likes according to the year of setting up the page can be noted. In conclusion, hypothesis H3 is validated.

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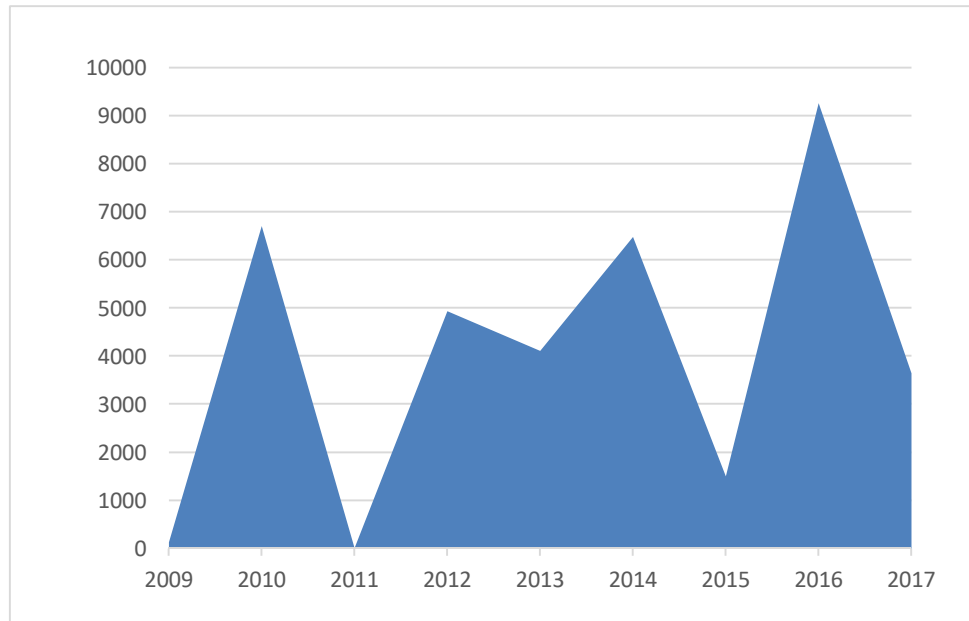
Figure 3: Average of the recorded Likes according to the year of setting up the page

In what concern the searching and collecting information YouTube pages the activity has been conducted during February-March 2020 (Table 2). We noticed that 94,12% of the balneary resorts use third parties (physical or legal) for promotional activities. Also, we noticed that all of the analyzed balneary resorts are present on YouTube, so that hypothesis H4 is validated. Each presentation videoclip has as popularity indicators: number of views, number of likes, number of dislikes.

Table 2: The Youtube videoclips of Romanian balneary resorts

Balneary resort/ Youtube	Dp	T	Nv	L	D
Amara https://www.youtube.com/watch?v=XIuHCtvfY1U https://www.youtube.com/watch?v=CrVni3KaMoo	15.03.2015 29.03.2015	3:02 2:56	69.491 17.181	243 34	66 10
Bazna https://www.youtube.com/watch?v=INQ827hCHRI	19.04.2011	4:35	34.218	112	17
Băile 1 Mai https://www.youtube.com/watch?v=wZtEIXs7uWE https://www.youtube.com/watch?v=u8E_Lj7N0q8 https://www.youtube.com/watch?v=Ay0va1te5Bw	15.03.2015 3.07.2017 29.04.2016	2:26 2:15 2:39	11.097 6.321 5.366	39 33 18	1 0 0

Balneary resort/ Youtube	Dp	T	Nv	L	D
Băile Felix https://www.youtube.com/watch?v=n5j6984kv3g https://www.youtube.com/watch?v=lIGYwYo5ewE https://www.youtube.com/watch?v=ywZKFNfHJV8	7.07.2013 15.03.2015 26.02.2018	13:50 2:10 2:54	56.464 31.703 6.864	214 145 37	21 9 2
Băile Govora https://www.youtube.com/watch?v=OzIsbsDue_c	15.03.2015	1:47	15.506	63	7
Băile Herculane https://www.youtube.com/watch?v=wCDomuT2eFU&t=34s https://www.youtube.com/watch?v=o7TKkY2Rs2Q&t=25s https://www.youtube.com/watch?v=xeiAcdRZyhg https://www.youtube.com/watch?v=QmElMI69YMg	13.08.2013 30.04.2014 7.08.2013 9.04.2017	25:00 10:22 24:59 11:09	177.655 60.221 55.645 37.786	508 303 226 127	70 23 14 38
Baile Olanesti https://www.youtube.com/watch?v=h1lWnD9bTu4	17.05.2016	17:24	18.347	94	16
Tusnad https://www.youtube.com/watch?v=vzDGjMsTyH8 https://www.youtube.com/watch?v=yInyztBirag https://www.youtube.com/watch?v=AykCuexML1o	10.06.2009 10.07.2012 10.07.2012	3:47 11:52 5:25	65.266 27.891 16.072	139 72 34	16 14 10
Borsec https://www.youtube.com/watch?v=lcT8u5XmQM4 https://www.youtube.com/watch?v=tW9gZHUJtIY https://www.youtube.com/watch?v=Gmk_-0F1QWc	2010 11.2019 16.09.2016	3:22 17:45 1:41	13.314 643 15.277	27 14 88	3 0 8
Buzias https://www.youtube.com/watch?v=QCB9rIFv5AI https://www.youtube.com/watch?v=DVp7p8nd3cs	15.03.2015 1.11.2017	3:22 5:43	24.598 2.923	116 28	11 1
Calimănești-Căciulata https://www.youtube.com/watch?v=821p6jI_-TQ https://www.youtube.com/watch?v=9uFzZkm510w	22.09.2016 28.05.2017	5:00 20:02	131.829 9.776	820 71	59 5
Covasna https://www.youtube.com/watch?v=869zDlzfOLs	28:2019	15:39	3.908	74	0

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Balneary resort/ Youtube	Dp	T	Nv	L	D
Geoagiu Băi https://www.youtube.com/watch?v=iNfDDmsm4FE https://www.youtube.com/watch?v=fsvqawa5k18	2.07.2017 2015	3:44 6:02	12.360 15.441	45 66	10 7
Lacul Sărat https://www.youtube.com/watch?v=NiEdj9iOZfo https://www.youtube.com/watch?v=9Xyl2dLNRY8	13.06.2019 28.07.2018	7:20 0:58	1.381 2.792	13 14	1 1
Moneasa https://www.youtube.com/watch?v=jZhdn8raOYE https://www.youtube.com/watch?v=vZu0tX9RQM8 https://www.youtube.com/watch?v=q2kjZKJ8rao	19.01.2014 25.08.2018 04.2008	5:27 3:41 3:26	11.977 5.876 18.505	36 41 17	6 7 3
Ocna Sibiului https://www.youtube.com/watch?v=D_Bzrxp54sE https://www.youtube.com/watch?v=2IDx5qPnddY	7.03.2015 2011	6:15 8:50	27.900 23.333	76 41	12 7
Ocna Șugatag https://www.youtube.com/watch?v=iuaWKrO-5ZU https://www.youtube.com/watch?v=9Xyl2dLNRY8	7.06.2019 28.07.2018	3:08 0:58	3.463 2.793	21 14	0 1
Praid https://www.youtube.com/watch?v=8IaFnxoGsEM https://www.youtube.com/watch?v=BL0LBoovVw8	6.02.2014 4.08.2014	6:41 1:09	71.585 46.295	343 84	32 9
Pucioasa https://www.youtube.com/watch?v=q40J7QJ_Q5s https://www.youtube.com/watch?v=OOhSDDpiYSI	27.09.2018 5.08.2010	3:29 4:05	1.928 4.288	17 8	0 0
Sărata Monteoru https://www.youtube.com/watch?v=9aajBYgAoDU https://www.youtube.com/watch?v=IGfsuDw42fQ	9.10.2017 11.05.2011	7:54 4:14	2.459 79.329	10 195	1 32
Sîngeorgiu de Mureș https://www.youtube.com/watch?v=dZ857vMuT2g https://www.youtube.com/watch?v=3FXpAyyDJjk	17.08.2009 6.02.2018	3:0 3:23	22.064 2.012	35 8	2 2
Sîngeorgiu Băi https://www.youtube.com/watch?v=zUyn	23.11.2018	13:14	1.369	20	1

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Balneary resort/ Youtube	Dp	T	Nv	L	D
6OHaxRM https://www.youtube.com/watch?v=xF7nEhOo-9c	23.11.2018	5:30	2.415	31	2
Slănic Moldova https://www.youtube.com/watch?v=ONa1U6_bu7E https://www.youtube.com/watch?v=A2Mqg_0Y4pk	8.03.2014 3.09.2015	4:32 3:21	20.041 61.875	108 447	6 18
Slănic Prahova https://www.youtube.com/watch?v=V8qAXNxrNHg https://www.youtube.com/watch?v=qj5PL4F8qCQ	6:11.2014 24.03.2019	10:20 5:13	57.485 7.968	250 132	32 13
Sovata https://www.youtube.com/watch?v=LW4N2gFFxGA https://www.youtube.com/watch?v=3DZyKUXkFNM	3.12.2016 8.06.2018	7:11 39:42	20.611 5.524	99 32	9 6
Turda https://www.youtube.com/watch?v=psgsWZTrK2Q https://www.youtube.com/watch?v=3x6ZPzO_4PQ	29.09.2016 21.01.2018	4:04 2:17	4.799 76.486	40 513	3 29
Vatra Dornei https://www.youtube.com/watch?v=BWCeYzGBrVc https://www.youtube.com/watch?v=T2J9MhTaAkg	2.12.2011 6.01.2017	2:09 3:19	23.782 21.046	82 203	11 3
Vața de Jos https://www.youtube.com/watch?v=GzpsofV8Ang&t=4s	18.08.2019	2:23	147	12	1
Voineasa https://www.youtube.com/watch?v=jspaKGrVJXI https://www.youtube.com/watch?v=svWZKGhqwyM	3.09.2012 26.09.2015	2:06 1:19	10.856 2.206	36 13	2 0
Eforie Nord https://www.youtube.com/watch?v=FIs5z_3-X0k https://www.youtube.com/watch?v=Gt8ViMdOV9o https://www.youtube.com/watch?v=eNIkSR_el-g	14.08.2014 21.04.2015 27.07.2019	2:19 1:51 14:48	2.312 8.354 19.285	8 16 111	0 2 11
Techirghiol https://www.youtube.com/watch?v=5crdan1_DfA https://www.youtube.com/watch?v=6A7-ELRZbUg	19.08.2016 12.09.2019	20:11 5:21	23.676 647	88 17	9 0
Neptun					

Balneary resort/ Youtube	Dp	T	Nv	L	D
https://www.youtube.com/watch?v=em94CYihjEU https://www.youtube.com/watch?v=W4ug6wdiND8 https://www.youtube.com/watch?v=D-5hf3L5AC8	3.06.2019 2.07.2019 3.06.2019	10:43 27:57 14:10	36.735 1.571 11.918	292 14 85	32 4 7
Saturn https://www.youtube.com/watch?v=RabxWPQxVEc https://www.youtube.com/watch?v=H68jSorEOQQ	17.08.2015 11.07.2019	2:33 3:53	9.567 2.312	21 21	1 0

Legend: Dp - date of posting; T – videoclip length; Nv – number of views; L- likes; D - dislikes

Identified posts have been made during 2008-2019. For all videoclips the number of Likes if far smaller compared to the number of views; also, the number of Likes is bigger compared to the number of Dislikes. Therefore, many of the viewers didn't provide a feedback.
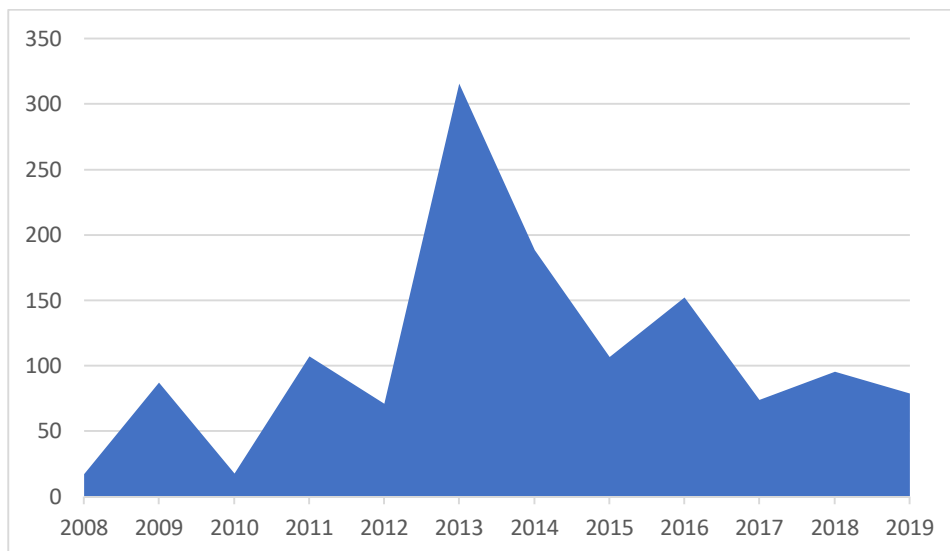
Figure 4: The average of Likes per videoclip according to the year of the videoclip posting

To verify the H5 hypothesis we averaged the Likes registered of the page considering the year when the videoclip was posted (Table 2). Both Table 2 and Figure 4 shows that neither number of views nor the number of Likes is influenced by the age of the page, even though an elder page should have brought more of

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these indicators since there was more time available for viewing or registering the Likes. Therefore, the visualization/appreciation of a videoclip could depend on factors such as for example an increased interest for certain balneary resorts, willingness in seeing recently made videoclips, the quality of information contained in the videoclip, or the professionalism of its realization from a marketing perspective. Figure 4 shows that no trend for Likes can be established according to the year of the video posting (H5 hypothesis is thus validated). The duration of the videoclips (which vary between 0,58 and 50 minutes) does not influence either the number of views or the number of likes. This way, the H6 hypothesis is also validated.

3. Conclusion

The analysis of the balneary resorts' presence on Facebook and YouTube show that:

- Over 80% of the balneary resorts own official Facebook pages as well as videoclips (the majority of them made by third parties, physical or legal) for promoting purposes. However, there are situations when it cannot be stated if a Facebook page is official or not, as well as situations when two official pages coexist, which leads to the split of appreciations.
- Facebook offer companies a set of indicators for pages' attractivity analysis which can be analyzed during a period of time, but only a few owners (approximative 20%) are aware of these indicators and make use of them.
- The age of the Facebook page and, as well, the age of a videoclip doesn't automatically bring Likes, which mean that other factors are involved in the success of a webpage (or videoclip), an aspect which will be analysed in future research.
- The length of a videoclip does not influence the number of views or the number of Likes for that videoclip.

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EMPLOYEES' PERCEPTIONS REGARDING THE STRATEGIES FOR MOTIVATING HUMAN RESOURCES WITHIN A PRIVATE ORGANIZATION IN ORADEA

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Abstract: *The article aims at approaching in the first part some theoretical considerations, based on the premise that the manager's use of appropriate strategies meant to increase work motivation will lead to an increased employee performance. Thus, the theoretical considerations take into account the aspects that define the positive and negative motivational climate within an organization, the theories of motivation grouped according to the thematic criterion, but also the pecuniary and non-pecuniary motivation strategies, among which we mention: basic salary, merit salary, various bonuses, special bonuses for important employees (with special contributions), job rotation, job expansion, increased job attractiveness, flexible work schedule, delegation, increase of employees' self-confidence in order to determine them to become more motivated to engage in complex activities. The second part of the article, with the highest degree of originality, is the part of concrete research, conducted within a private organization in Oradea, a qualitative research that is based on employees' perceptions regarding the motivational strategies within the organization. The research objectives consist in identifying the financial and non-financial motivation strategies that employees benefit from and in highlighting the implications of the type of management on employee satisfaction. The used research method is the interview-based sociological survey, and the research instrument is the interview guide. The interview guide contains 18 questions and is structured on two dimensions: Financial and non-financial motivation and Implications of the type of management on employee satisfaction. The research highlighted that the organization applies a policy of motivating its own personnel by granting various financial rewards, such as: merit salaries, financial incentives, 13th salary, bonuses etc. The criteria that employees must meet in order to benefit from all these financial rewards are known to employees and consist of the following: attendance without unjustified absences, fulfillment and respect for the work norms, punctuality, commitment, involvement, availability, planning and organizational skills, flexibility and ability to solve problems, appropriate behavior, interest in the workplace, exceptional results and achievement of the goals imposed by management. Along with financial rewards, the company also offers employees non-financial rewards, such as: the possibility of promotion, flexible work schedule, insurance, company telephone, hot meal, work laptop, the possibility of a day of working remotely, company car (for some employees), transport settlement and free ophthalmologic examinations, annually. The conclusions of the study emphasize that the management of the organization should contemplate realistically on the situation and intervene in the human resource management strategy, by focusing more on*

the application of policies meant to stimulate the need for the employees' professional and human development, by maximizing commitment, involvement and creative potential, based on the acknowledgment and stimulation of performance, a climate based on trust and cooperation within work teams.

Keywords: *motivation; performance; motivation strategies; reward; attitudes; needs.*

JEL Classification: *M52; M54.*

1. Introduction

The attitude of human resources towards work is closely related to motivation. Thus, managers must constantly monitor the needs and the degree of motivation of human resources because only motivated staff perform their tasks responsibly, without the need for direct and permanent managerial control. The dissatisfaction of the personnel determines various attitudes starting with the indifference towards their tasks to lack of involvement, which can sometimes lead to sabotage, labor conflicts, which altogether may generate great damage to the organization.

The research carried out and presented in this article took place in May-June 2020, within a company in Oradea, with private capital, its purpose being to identify financial and non-financial strategies and other benefits, as well as the means and the way of rewarding the employees, applied within the company, meant to contribute to the improvement of the quality of work, to the reduction of staff turnover.

2. Motivation strategies used in human resources within the organization

The motivational climate within an organization can be *positive*, involving: free expression of opinions, taking over and valorization by managers of ideas and initiatives from subordinates, informal interpersonal relationships, recognition and encouragement of success, visible and easily resolved conflicts, or *negative*, highlighted by: reduced responsibilities for members of the organization, lack of positive feedback from managers, unrealistic tasks assigned by managers, tense / stressful atmosphere within the organization, insufficient time to perform tasks and inadequate working conditions. (Gherguț, 2003)
The theory of motivation examines the process of motivation: it explains why people behave in the way they do, from the perspective of their efforts and the direction towards which they act, and describes what organizations can do in order to encourage people to use their efforts, and capabilities in ways that not only meet their own needs, but also further promote the achievement of the organization's objectives. (Armstrong, 2003: 139)
In the reference literature, we find a series of theories of motivation, and the most commonly used criterion for systematizing these theories, to which most specialists in management and organizational-managerial psychology adhere is the thematic

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criterion, according to which theories are grouped into three main categories: theories of content, process theories and consolidation theories. (Lefter, Deaconu and Manolescu, 2012; De Vito et al, 2016)

In *theories of content* (Maslow's hierarchy of needs theory, Taylor's theory of instrumentality, Adair's theory of group personality and group needs, Alderfer's ERG model, McCllelland's model of accomplishment motivation etc.) the emphasis is on specific factors that motivate employees, these theories being focused on determining the individual factors that energize, support and stop behaviors.

The *process theories* (Vroom, Porter and Lawler's theory of expectations, Adams' theory of equity, Locke's theory of objectives) emphasize the psychological forces and processes that underlie motivation. The premise of these theories is that motivation begins with the desire to do something, generating expectations. The best-known process theories are the theory of objectives, the theory of expectation and the theory of equity.

Consolidation (reinforcement) theories emphasize the relationship between specific outcomes and individual behavior, showing that managers can change the level and direction of their own actions. By means of these theories, we focus on observing the behaviors of employees in order to find out what are the most appreciated work results. The manager can change the behavior and motivation of employees by changing the place, reasons and manner for which rewards are offered.

Managers can use various strategies for motivating human resources within the organization, and the choice of appropriate strategies for the increase of motivation at work will help improve employees' performance. Thus, the manager can appeal to (Vlăsceanu, 1993): enhancing people's self-confidence, developing positive feedback towards work, meeting people's expectations and achieving the latter's goals, there is a relation of dependence between work motivation, professional studies and people's life cycles, as well as the changes in production and technologies - motivational strategies must take into account these characteristics, competition, which also represents a strategy developed in most managerial styles.

The manager's motivation in obtaining performance is influenced by two categories of factors: internal (individual) factors - attitudes, needs, interests and individual behaviors; external or organizational factors - employees' competence, specification of tasks, salary, communication and control system, manner of reward, organization of free time. (Păuș, 2006)

Motivation strategies can be grouped into two broad categories: pecuniary motivation strategies and non-pecuniary motivation strategies. According to Pânișoară and Pânișoară (2016) the main types of pay that can be granted to an employee because the latter performs a certain job are: basic salary, merit salary, bonuses after achieving the company's profit, bonuses following profits obtained by the department/ project work-team, individual bonuses obtained by an employee, after the activity of performance evaluation, bonuses according to the skills developed after the involvement in practical or personal development projects, holiday bonuses, special bonuses for important employees (with special contributions) meant to prevent them from leaving the company.

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The main non-pecuniary motivation strategies mentioned in the reference literature are (Certo, 2002; Mathis, Nica and Rusu, 1997; Radu, 2003): assessing employees' achievement, frequent reports about the financial situation and the stage of achieving objectives, encouraging initiative and novelty within the company, providing a creative climate within the work team by increasing autonomy and freedom in decision making, acquisition of talent and intelligence, effective manager-subordinate communication, which can meet basic human needs, such as: the need to recognize merit, a sense of belonging to the group, as well as the need for security, job rotation, job expansion, increasing the attractiveness of the job, flexible work schedule, delegation, increasing workers' self-confidence so that they become motivated to engage in complex activities, building a climate of appreciation for a well done job. Reference literature and empirical research attest to the inseparable link between employee motivation strategies, included in organizations' human resources policies and labor productivity, labor stability, and, finally, in the profit made by the organizations concerned (Elector Odukah, 2016; De Vito et al, 2016; Pang and Lu, 2018).

3. Employees' perceptions regarding human resources motivation strategies within a private organization in Oradea. Qualitative research

3.1. Research methodology
The study aimed at identifying financial and non-financial strategies within a private company, such as the means and remuneration of employees and other benefits that would improve the quality of work, would reduce staff turnover, and would also prove beneficial for the organization ensuring it of the loyalty of its employees.
The first objective of the research is to identify the financial and non-financial motivation strategies that employees benefit from, followed by the analysis of the first dimension of research. The second objective of the research is to highlight the implications of the type of management on employee satisfaction, which is captured by the second dimension of the interview guide. The used research method is the interview-based sociological survey, and the research instrument is the interview guide.
The interview guide is structured in 2 dimensions and has 18 questions. The first dimension, *Financial and Non-Financial Motivation*, aims to identify the financial and non-financial strategies that the organization implements and the strategies used for the benefit of the organization's employees. The questions related to this dimension refer to the means and the way of rewarding the employees in the organization, namely, the financial rewards *("What are the financial rewards, other than the salary offered by the organization you work for?"*), the criteria (*"Which are the criteria you must meet in order to benefit from each of these? "*), non-financial rewards (*" What are the non-financial rewards offered by employing organization? "*), other benefits (*" Which other benefits, besides those offered to you by your employer would determine you to work harder and/or better? "*), the stimulating factors (*"Name some factors that would stimulate the employees to work harder"*) and the level of

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employee satisfaction concerning the benefits offered by the employing organization (*" Are you satisfied with the benefits you currently receive at work?").* This dimension of research aims to identify the rewards that the organization offers to its employees and the rewards that should be introduced in the organization's policy for proper functioning and for the quality of work.

The second dimension, *The implications of the type of management on employee satisfaction* included questions on the implications of the type of management on employee satisfaction or in other words the management-motivation-satisfaction relation and identifies the manager's relationship with employees and the satisfaction level of the company's employees. This dimension contains questions about the employee-manager relationship *("How do you appreciate the relationship with your direct boss?*"), *("To what extent do you consider your relationship (communication, the way your work tasks are distributed etc.) with the direct boss affects the quality of your professional activity?"),* acknowledgement of merits *("Does the organization's manager recognize the results of your work?"),* promotion (" *Would the possibility of promotion determine you to work harder?"),* (*Does the company organize promotion contests for various positions? If so, did you have the chance to participate in a contest? Were you promoted?"),* the possibility of personal and professional development at work *("Does the organization management invest in the professional and personal development of employees?).* This dimension identifies the manager's relationship with employees, the acknowledgement of employee merits by the manager, the possibility of employees to be promoted within the organization, and the manager's involvement in employees' problems.

Limits of research: The research is qualitative and is not statistically representative, because the interview guide was applied to a low number of interviewees, more exactly 15 employees, randomly selected from the organization; the research has an exploratory character, and it can represent a starting point for a broader research. Therefore, it should be mentioned that the results obtained and the conclusions of the research can only be generalized at the level of the organization in which it was carried out.

3.2. Results of the research
3.2.1. Socio-demographic characteristics of the sample
The participants in the research were 15 employees from a multinational company in Oradea, the subjects were aged between 24 and 42 years (5 women, 10 men) and their seniority within the organization was between 10 months and 12 years. Their professions are varied: Operator (3), Toolmaker, Engineer, Procurement specialist, Human Resources Manager, Human Resources Specialist, Marketing Specialist, IT specialist, Economic Director, Production Manager, Quality Manager, Technical Manager.

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3.2.2. Analysis of the answers according to the projected dimensions of the research.

In order to achieve the two, previously mentioned objectives of the research we focused on two dimensions, each captured by several variables (transposed in research questions), as follows:

The financial and non-financial motivation of employees aims to identify the rewards offered by the organization to its employees and the rewards that should be introduced in the company's policy and implemented for the proper functioning and quality of work, dimension analyzed through five questions.

The first question within this dimension refers to *financial rewards*, other than the salary offered by the employing organization.

The answers provided by the 15 interviewees were varied: most (6 respondents) mentioned that they benefit from *meal vouchers* from the company; others (3 respondents) *Easter and Christmas gift vouchers*; various *bonuses*, such as *night work bonus* (2 respondents), *weekend work bonus* (one respondent), *seniority bonus* (2 respondents), an employee reported that he receives *bonuses depending on the obtained results* (according to the company policy); various *bonuses*, such as *performance bonus* (4 respondents), *attendance bonus* (one respondent), *productivity bonus* (one respondent); *merit salaries* (3 respondents); *incentives* (2 respondents); *loyalty award* (2 respondents); *management award* (one respondent). One employee said that he received a *holiday voucher*, and another stated that he receives *the 13th salary* from the company, which he negotiated when he signed the employment contract.

Therefore, the company's employees declare that they are financially rewarded by their employing organization in several ways, such as bonuses, merit salaries, financial incentives, meal vouchers, various bonuses etc. From this point of view, the policy of stimulating human resources is appropriate, various stimulation means being applied.

The second question within the dimension concerned the *criteria* used by the organization in the attribution of the mentioned incentives.

The answers formulated by the subjects concerned: *work attendance, without unmotivated absences* (4 respondents); *fulfillment and respect for work rules* (4 respondents), a respondent stating that it is necessary to meet the 5S, which means *Sort*-remove unnecessary items from each area, *Set in command* (order) -organize and identify storage for efficient use, *Shine* (cleaning) -clean and inspect each area regularly, *Standardization*-incorporate 5S into standard operating procedures, *Support* (discipline) -allocate responsibility, track progress and continue the cycle; two employees reported the need to have more than 2 years of seniority at the current job in order to receive a seniority bonus; *maximum three days of absence* (one respondent); *commitment, involvement, availability* (one respondent); *punctuality* (one respondent); *planning and organizational skills, flexibility and ability to solve problems* (one respondent); *fulfillment of KPI indicators* (one respondent), interest in the workplace (one respondent), an employee stating that certain results must be achieved during a working month; *appropriate behavior and interest in the*

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company (2 respondents); *achievement of the objectives imposed by the management* (2 respondents), *exceptional results* (one respondent); and another respondent said that *discipline* is needed in order to benefit from certain financial rewards in addition to the monthly salary.

Therefore, most employees know what conditions they must meet within the company in order to benefit from financial rewards. Out of their enumeration it results that most of the criteria aim at the quantitative and qualitative fulfillment of the organization's objectives, but also criteria related to the transversal competences of the employees, the type of discipline, punctuality, responsibility etc.

Another variable (question) refers to the *non-financial rewards provided by the organization*. The subjects mentioned: *the possibility of promotion* (5 respondents), *flexible work schedule* (3 respondents), *insurance* (one respondent), *transport settlement* (one respondent), *telephone* (4 respondents), the telephone being a source of reward only for administrative staff. Only two of the 15 interviewees said that the employing organization offers *a hot meal*, although the company's policy stipulates that all employees benefit from a hot meal every working day. The *work laptop* is also a way of non-financial reward that only administrative employees (3 respondents) benefit from, one employee stating that he has the possibility to work one day a month *remotely*, and another specified that within the employing company one can be promoted if he is serious, one can get days off in order to solve problems, benefit from counseling at work if he has problems, giving the personal example, "I managed to take two days off because one person in the family was ill and needed help." Other employees pointed out that the organization offers *team-building* (one respondent), *company car* (one respondent), *free subscription to travel to work* (one respondent) and *free ophthalmologic examinations* (one respondent).

The fourth variable within the dimension regarding the benefits obtained in the organization concerns *other benefits that the subjects would expect*, in addition to those promised at employment and which would lead to the improvement of their activity.

From the answers provided by the subjects it resulted that they would expect other additional benefits, materialized in: *training and personnel training courses*, so that the job is considered not only a source of income, but also as a valuable source of information (two respondents),) *keeping the job for as long as possible* (one respondent), *performance-based salary increases* (one respondent), *company car, health insurance, team-building* (one respondent), *increased toxicity bonus* (one respondent), *the manager's interest in creating more favorable conditions for development* (one respondent), *more free time with the family* (one respondent), *a higher salary* (two respondents), *job restructuring and help concerning basic accountancy* (one respondent), *holidays* (one respondent), and three of the employees stated that they consider sufficient the benefits they have at this point in their careers.

Therefore, employees have many other expectations from the employing organization, expectations that would motivate them to be as interested as possible in the work performed every day, expectations especially related to working

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conditions, good relations with bosses and co-workers, opportunities for promotion to the detriment of expectations of additional financial gain.

The finding was also confirmed during the processing of the answers to another question, formulated mainly with control role, through which we requested a presentation of the factors that stimulate employees in their work. We learnt that in the subjects' perception, on the first place there are the factors related to the atmosphere at the work place: *communication, appreciation for what the employee does, acknowledgement of efforts and achievements, transparency in decisions, motivation, understanding, good communication both among colleagues and with the hierarchical boss, trust, team, direct manager, pleasant working environment, calm attitude of the boss* (9 respondents)*, followed by good working conditions and improvement* (4 respondents) *and, on the last place, higher salaries and additional bonuses* (2 subjects).

The last variable we introduced within the dimension concerning the financial and non-financial rewards granted to employees concerns the *degree of satisfaction of the subjects in relation to the offered rewards.*

The subjects' answers are relevant because they help us assess not only the degree of employees' satisfaction in relation to the motivational strategies used by the organization, but also to identify the dysfunctions in the motivational strategies and to improve them. In this respect, it is relevant that only 9 (more than half) of the 15 subjects expressed attitudes of satisfaction in relation to the benefits obtained at work; one employee states that he is quite satisfied, another adds that there would be room for improvement, while 4 of the interviewed employees stated that they are *not satisfied* with the benefits they currently receive at work. Based on the data presented, we believe that the organization should improve its strategies for motivating human resources and intervene to adjust them according to the expectations of all employees.

The second dimension of the research aimed at knowing *the implications of the type of management on employee satisfaction*, identified by means of six variables: the relationship of bosses with employees; the extent to which the relationship with the direct boss affects the quality of the activity, in the subjects' perception; managerial acknowledgement of the merits of employees; the employees' possibility to be promoted within the organization; organizing contests for promotion on the job; the implications of the organization (manager) in terms of professional and personal development of employees.

The first variable that operationalizes the second dimension refers to *employees' perception of the relationship with their direct boss.*

The subjects' answers to this question are positive, even if they are expressed in different nuances: only two of the respondents explicitly stated that they have a very good relationship with the boss; other 8 respondents appreciate their relationship with the boss as good; one respondent specified that he had a good relationship with his boss, based on trust; one respondent said it was ok; 2 respondents said it was normal, and one employee replied that he had a formal-normal relationship with his boss. Based on these answers, one can conclude that the company's employees are in good relations with their direct boss, which is beneficial for both the company

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and its employees. However, the fact that only two of the subjects expressed unreservedly that they had a very good relationship with the direct boss and the others suggested certain second thoughts, without mentioning them, entitles us to consider that there are still possibilities to improve this type of motivational non-financial rewards at the level of the analyzed company.

Another variable, through which we aimed to deepen the information on the relationship with the direct boss, refers to the extent to which the relationship with the direct boss (communication, the way work tasks are distributed etc.) affects the quality of professional activity, in the subjects' perception.

Only one respondent specified that the relationship with the direct boss affects to a very large extent the quality of work, most employees, more exactly 12, answered that their relationship with the direct boss affects to a large extent the quality of work and only 2 respondents stated that their relationship with their boss affects to a low extent their quality of work. Therefore, the relationship between the boss and the employee is perceived by employees as having an important role in the activity carried out within the company, the fact that only two of the subjects deny its role, confirms the conclusion we formulated above.

The third variable of this dimension concerns an important element of the relationship with the management of the organization, consisting in *the managerial acknowledgement of the employees' merits.*

In line with the previous answers, the answers are mostly positive. Ten of the interviewed employees said that their good work is appreciated by the organization's manager, one specifying that *most of the time, yes,* their merits are recognized. Another employee said that his merits are recognized, but *sometimes we are overworked*, while another employee replied that *the boss is not pleased no matter what we do and wants more*. In addition to these answers, 2 other respondents added that their merits are not recognized or, at least not always, by the manager of their employing organization.

As it resulted from the answers recorded during the analysis of the first dimension, *the possibility of promotion* is an important factor for motivating the organization's staff, which is why we included it in this level of analysis.

Regarding this question, most respondents, more exactly 11, said *yes*, this possibility would determine them to put extra effort into work. One employee says *yes, I think anyone would like to evolve professionally*, another employee's response emphasized that the possibility of promotion would determine him to put in more effort, *although I currently put in effort because I like to do things professionally.* Other three interviewees answered negatively to this question, specifying that the possibility of being promoted would *not* determine them to make additional efforts at work. In conclusion, it can be said that most of the employees would like to have the opportunity to be promoted and would be willing to work harder to achieve this goal.

We considered that a sensitive point in any organization, including the one under analysis, is the organization of contests for the *promotion of employees in various positions*.

Most of the answers to this question were negative (9 respondents), an employee specifying that no contests are organized, but there is the possibility to access a

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hierarchically superior position after the assessment of the obtained results. In addition to these negative responses, 4 other respondents stated that promotion contests are organized within the company. We continued the investigation with an additional question that referred to personal experience in this regard and we have noticed that only a few respondents formulated an answer, as follows: *I also had the chance to participate and be advanced from technician to engineer* (a respondent), *I was promoted without a contest* (one respondent), *I was promoted due to seniority and work experience* (one respondent). An employee claims that he did not have the chance to be promoted, because he is at the beginning of his career, and 3 other employees answered negatively. Therefore, it can be concluded that the organization uses to a low extent contests as a promotion strategy, in favor of promotion on other criteria: seniority and work experience.

The last variable investigated within the second dimension refers to the subjects' perception regarding the concern of the organization's management for the investment in the *professional and personal development of the employees.*

Related to this question, most of the interviewees answered affirmatively (8 respondents), the management of the organization invests in the development of employees. One respondent claims that this facility applies only *in some departments*, while another respondent claims that he even benefited from *training in the development of workplace relationships* in the previous year and another employee talks about the involvement of management in the employees' development, more precisely, *courses, trainings and regular meetings* are organized related to activity reports. Two employees believe that the management of the organization is involved only to a low extent in their development, and one employee claims that the management of the organization *is not involved* in the professional development of the company's employees.

The answers provide sufficient basis to attest to the idea that in the organization there is consistent concern for the employees' professional and personal development, with the exceptions we have noticed when we analyzed the other variables, namely that there are 2 subjects who express dissatisfaction with all variables related to managerial involvement in increasing workplace performance. If we extrapolate the phenomenon to the entire staff, we could say that about 13% of the organization's staff is not satisfied with the policy of motivating the employees in the organization, which would suggest that the management should intervene in what concerns such policies.

4. Conclusions

The research analyzed, as previously mentioned, aspects of staff motivation strategies within a private company in Oradea, captured through two dimensions of the concept, namely financial and non-financial strategies and implications of the type of organization management on the employees' satisfaction, each dimension being operationalized through several variables.

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The research highlighted that the organization applies a policy of motivating its own staff through granting various financial rewards, such as: merit salaries, financial incentives, the 13th salary, bonuses etc.

The criteria that employees must meet in order to benefit from all these financial rewards are known to employees and consist of the following: attendance without unjustified absences, fulfillment and respect for the work rules, punctuality, commitment, involvement, availability, planning and organizational skills, flexibility and ability to solve problems, appropriate behavior, interest in the workplace, exceptional results and achievement of the goals imposed by management. Therefore, the company's employees know quite well what are the criteria they must meet in order to benefit from the financial rewards offered by the employing company. In the last 6 months, these employees have benefited from most of the financial rewards presented above, namely: various bonuses, weekend bonuses, attendance bonus, performance bonus, night work bonus, productivity bonuses, meal vouchers, merit salaries, incentives, monthly bonuses. Out of these answers, it appears that the employees have been financially rewarded in the last 6 months by the employing organization, motivating the former with all the possible rewards at their disposal.

Along with financial rewards, the company also offers employees non-financial rewards, such as: the possibility of promotion, flexible work schedule, insurance, transport settlement, company telephone, hot meal, work laptop, the possibility of a day of working remotely, company car (for some employees), transport settlement and free ophthalmologic examinations, annually.

Although the company offers many financial and non-financial rewards, it seems that these are not enough among employees. Employees want to benefit from training courses, salary increases based on performance, company car, health insurance, increased toxicity bonus, higher salary, more free time, a higher salary than the one offered, only a few being satisfied with the rewards offered by the organization. Consequently, the organization's management rewards its employees, both financially and non-financially, but to an insufficient extent, because life is constantly evolving, the requirements are always at a high level, both from employers and from the employees who want quality of life at the level of current standards.

In the structure of employees' preferences regarding the types of rewards that should be supplemented, priority is given to non-financial rewards, such as: optimal communication with colleagues and managers, especially with the direct boss; appreciation for what the employee does; professional development courses, recognition of efforts and achievements, transparency in decisions, relationships based on trust, teamwork, fewer work tasks, performant working conditions, high salaries and bonuses being on the second place. The organization should implement these suggestions in order to have loyal employees, who would work with pleasure every day with their team colleagues within the company. Although the company's employees want a variety of incentives implemented by the organization, most of them express satisfaction with the benefits they currently receive at work.

Regarding the influence of management on the quality of work performed by employees, the research showed that employees appreciate mostly both the

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relationship with their direct boss, which they consider important in the efficiency of activities and the acknowledgement of the employees' merits by the organization manager. The same positive assessments are registered regarding the possibility of promotion at the workplace, with the observation that the organization's policy uses only to a low extent the organization of contests for higher positions, positively valuing other ways of promotion, especially seniority and work experience.

The research provides sufficient basis to attest the idea that within the organization there is consistent concern for the employees' professional and personal development, with the observation we made when we analyzed the other variables, respectively that there are 2 subjects who express dissatisfaction with all variables related to the management's involvement in increasing workplace performance.

As it resulted from the analysis of all data, within the company under study, the vast majority of employees show a positive attitude towards human resource management, answering to some questions, explicitly, that they are satisfied or very satisfied. However, in the case of each variable, we noticed that there were some employees who manifested certain hesitations in their answers and others (even if there are 2 - which would represent about 13% of the sample and, by extrapolation, from the research universe) who constantly expressed disagreement or dissatisfaction with the human resource management policies within the organization.

That is why we believe that the management of the organization should contemplate realistically on the situation and intervene in the human resource management strategy, by focusing more on the application of policies meant to stimulate the need for the employees' professional and human development, by maximizing commitment, involvement and the creative potential, based on the acknowledgment and stimulation of performance, a climate based on trust and cooperation within work teams.

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A DETAILED ANALYSIS OF THE PROFITABILITY OF CHINESE BANKS FROM 2016 TO 2019

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Abstract: *Although, there is no generally definition for the term "Emerging Markets", there are two representative features for emerging countries. First, these markets are characterized by rapid growth which is usually expressed in terms of income levels and population. The term of emerging economies refers to nations with social and business activity in the process of fast growth and industrialization. Emerging markets countries are assumed to play a decisive role in international trade and finance as well as to contribute significantly to the global economic growth. Entering an emerging market is not easy. Opportunities in the emerging markets come with their own set of challenges. Doing business in Emerging Markets reflects the challenges and opportunities facing international businesses and professionals when operating in emerging markets. There is intense competition among emerging countries to capture their share of the global economy. Emerging markets are commonly considered relatively riskier than developed markets as they carry supplementary political, economical and currency risks. As a result, these markets could be good investments for diversification purposes. These economies are growing fast, so the information that is defining them is easily outdated as their structure is quickly evolving. My research contains a theoretical introduction, literature review and also applied statistics on a dataset. In this paper I apply linear regression using IBM SPSS Statistics in order to measure the profitability for 51 banks from China during the period 2016 to 2019. The purpose of my research paper is to analyze the profitability of Chinese banks using two important profitability indicators: Return on Assets and Net Profit Margin. ANOVA is used to verify if the regression model is a good fit for the data. Also, I present descriptive statistics that show a general overview for the variables. The variables that are in the center of analysis are Return of Assets and Net profit Margin. For a more detailed analysis, Pearson Correlation was performed in order to verify the association between the variables that are in the interest of my research paper.*

Keywords: *bank profitability; regression; statistics; China.*

JEL Classification: *M21; G21.*

1. Introduction

Although, there is no generally definition for the term "Emerging Markets", there are two representative features for emerging countries. First, these markets are characterized by rapid growth which is usually expressed in terms of income levels and population. Emerging markets usually start from a lower base than developed

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markets in terms of per capita Gross Domestic Product (GDP) and are in the process of catching up.

Emerging markets mutual funds are investment portfolios that offer foreign investors chances to invest in alternative markets based in Eastern Europe, Asia and Latin America. These funds are in the area of interest for individual and also institutional investor which aim to increase their returns and diversity risks.

This type of funds experienced an accelerated growth over the past 25 years following the liberalization of economic and financial policies in diverse countries in Eastern Europe, Asia and Latin America.

Emerging markets are usually considered relatively riskier than developed markets as they carry additional political, economical and currency risks. The term of emerging economies refers to nations with social and business activity in the process of fast growth and industrialization.

The seven largest emerging economies according to nominal gross domestic product (GDP) are: Brazil, Russia, India, China, Mexico, Indonesia and Turkey. Investing in emerging countries may lead to volatile return, like the probabilities of large profits and large losses are high. The performance of investing in emerging markets is often considered less correlated with developed markets.

As a result, these markets could be good investments for diversification purposes. These economies are growing fast, so the information that is defining them is easily outdated as their structure is quickly evolving.

Diversification in global trading benefits international business investments, especially in emerging markets, which have become a outstanding feature of the financial globalization sweeping the world over the last decade.

Whether supervising business or investing in emerging countries, corporations and investors are always exposed to political environments that are not typically present in developed economies.

Entering an emerging market is not easy. Opportunities in the emerging markets come with their own set of challenges. Sometimes, lack of education of the workforce require a lot of patience, perseverance and specialized assistance. Also, legal frameworks with regard to trade policies can be absent or underdeveloped. It is necessary to mention that infrastructure remains a significant problem in most emerging markets. Only China is investing seriously in roads, railway and ports, but somewhere else the progress is weak. Emerging markets such as India and China have huge and growing populations and thus demand rapid growth rate if they are to make any headway in social development. If India's economic growth falls below six percent the nation would be in crisis.

It is very important to understand the market, so the following aspects need to be considered of when it is an interest for investing in emerging markets: market potential, understanding the local customers, reaching the customers, competition, lessons learned by non-competitors, local culture, economic outlook, political outlook, government policies, finance, labor market, taxation, legal environment, bureaucratic obstacles to business, crime and corruption, infrastructure, and of course cost of building a business and a brand.

Therefore, at this time, developing countries are considerable investment targets, and these fast-growing economies are usually a growth relay for major banks.

2. Literature review

The term emerging markets entered the vocabulary of the investment world in the late 1980s. The International Finance Corporation described an emerging country this way: "A market growing in size and sophistication in contrast to a market that is relatively small, inactive, and gives little appearance of change." At that moment, the appellation was a expression of hope and faith on the part of those of us who were studying emerging stock markets, because many of these markets—such as those of Argentina, Peru, and Venezuela—were submerging quickly than they were emerging.

The problem of financial performance classification has been tackled in the literature for nearly 50 years. The general consent from the literature regarding modeling bank profitability favors a linear analysis approach.

Short (1978) and Bourke (1989) considered several functional forms and concluded that the linear model produced results as good as any other functional form.

Short (1978) and Bourke (1989) considered several functional forms and concluded that the linear model produced results as good as any other functional form. In the situation of factors within the control of management, the immediate factors that would have an impact on bank profitability would be those factors that affect a bank's net interest income (Guru et al., 2000). To this extent, the net interest margin could be expected to have a positive influence on the bank's profitability.

Statistical concepts and calculations form an important foundation for understanding applied financial methods and formulas.

The long-term fundamentals for emerging market growth are directly linked to the potential for emerging market companies to tap into the favorable long-term economic growth prospects for all the emerging economies.

Compared with other industries, China's outward investment across its financial sector represents a relatively small proportion of its total dollar investment abroad. However, China's outward financial investment has been increasing gradually, especially since 2006.

You are invited to use figures and tables in your paper wherever they will help to illustrate your text. The proceedings are delivered to conference participants in electronic format and therefore support colour figures, however, the book version is printed in black and white and therefore you are advised to refrain from using colours to deliver important information in your figures.

3. Analysis and results

The dataset used in this paper contains financial information about 51 banks from China during the period 2016 to 2019. The sample size contains 204 observations. The purpose of my research paper is to analyse the profitability of Chinese banks using two important profitability indicators: Return on Assets and Net Profit Margin.

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The dataset was imported in IBM SPSS Statistics and all the variables were coded accordingly. The variables used in my research are: Company Name, Year, Net Income, Total Assets, Total Revenue, Return on Assets and Net Profit Margin. The below figure shows the Return on Assets for the 51 banks from China during the period 2016 to 2019.
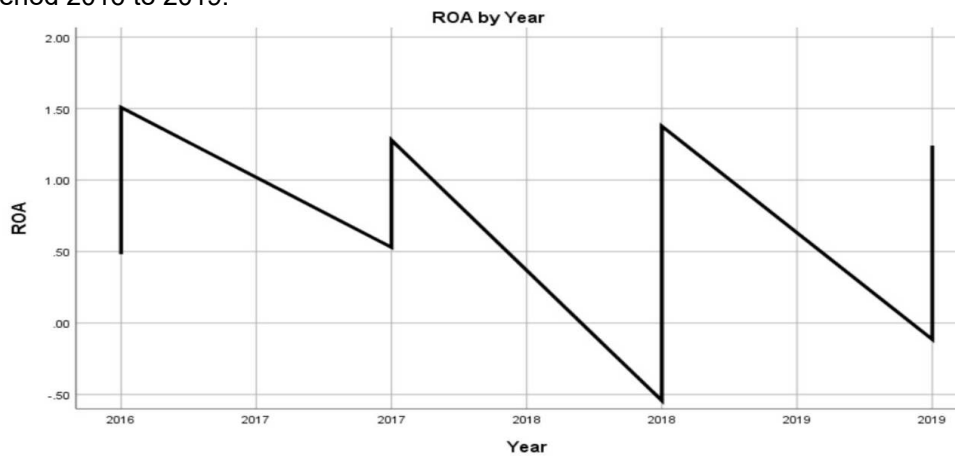
Figure 1: Return on Assets time series by year
Source: Author own research results in IBM SPSS Statistics

In order to see the profitability of Chinese banks I use in this paper linear regression where the dependent variable is Return on Assets (ROA) and the independent variable is Net Profit Margin.
Regression analysis is a statistical technique for investigating and modeling the relationship between variables. Equation of regression is: $\gamma = \beta_0 + \beta_1\,x$, where where β_0 is the intercept and β_1 is the slope.
ROA is an indicator of how profitable a company is relative to its total assets. Net Profit Margin is a measure of profitability.

Table 1: Regression results of ROA and Net Profit Margin

Model Summary	
R	.738
R Square	.545
Std. Error of Estimate	1.141
Sig. F Change	0.000

Source: Author own research results in IBM SPSS Statistics

Using linear regression in IBM SPSS Statistics, there are generated the R and R Square. R Value equals 0.738, which indicates a high degree of correlation. R Square indicates how much of total variation in the dependent variable (ROA) is explained by the independent one (Net Profit Margin), so it is the correlation between the observed and predicted value of dependent variable. R Square=0.545,

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so 54.5% of the variance in ROA can be predicted by Net Profit Margin. Coefficient Beta is measured in standard deviation and has a value equal with 0.738. So, a one standard deviation increase in Net Profit Margin leads to a 0.738 standard deviation in predicted ROA. Net Profit Margin has a positive impact on ROA.

Table 2: Coefficients

Coefficients	
Constant B	.171
Slope	.019
Sig	.000
VIF	1.000

Source: Author own research results in IBM SPSS Statistics

The Coefficients Table provides the needed information to predict ROA from Net Profit Margin and also if Net Profit Margin contributes statistically significantly to the model. This can be verified by looking at the Sig. (which is less than 0.05). The variance inflation factor (VIF) = 1.000 is less than 10, which indicates that there is no multicollinearity.
ROA and Net Profit Margin are continuous variables. The regression equation is ROA= 0.171+ 0.019 * Net Profit Margin.
Below, is is presented the regression line when the dependent variable is Return on Assets and the independent one si Net Profit Margin.
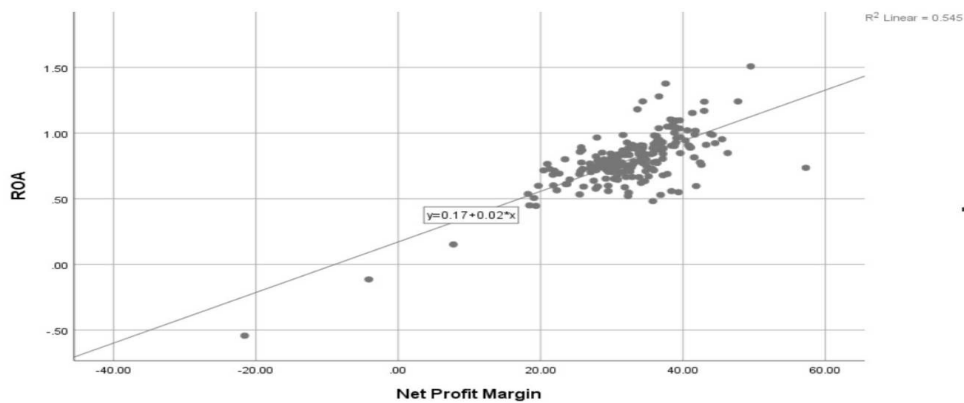
Figure 2: The Regression Line
Source: Author own research results in IBM SPSS Statistics

In order to verify if the overall regression model is a good fit for the data, I use in my paper ANOVA. ANOVA is the analysis of variance and consists of calculations that provide information about levels of variability within a regression. The dependent variable is ROA and the predictor is Net Profit Margin.

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Table 3: ANOVA

	Sum of Squares	F	Sig.
Regression	4.845	241.988	0.000
Residual	4.045		
Total	8.890		

Source: Author own research results in IBM SPSS Statistics
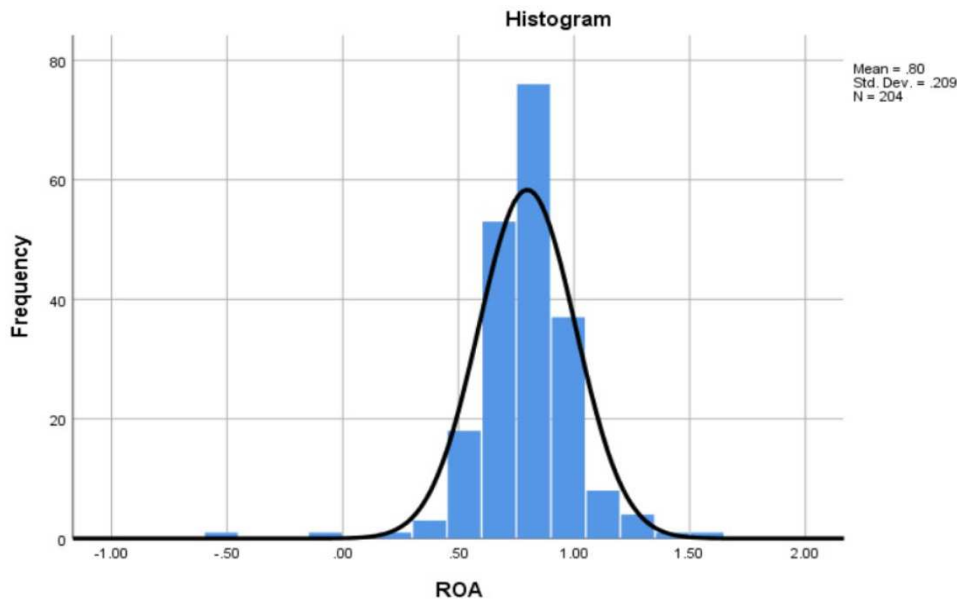
Figure 3: Return of Assets Histogram
Source: Author own research results in IBM SPSS Statistics

ANOVA is used for answering a question that sounds like this: "Do the Net Profit Margin reliably predict the ROA?". In this case, Sig = 0.000, which is less than 0.05, and it can be concluded that Net Profit Margin reliably predict Return on Assets. Also, the regression model is a good fit for the data and is statistically significant.

Regarding descriptive statistics, Skewness is a measure of the asymmetry of the probability distribution of a real-valued random variable about its mean. For ROA, Skewness = -1.362 meaning that the asymmetry is negative and the distribution is tilted to the right and has extreme values on the left side.

Like Skewness, Kurtosis describes the shape of a probability distribution. Kurtosis for ROA= 9.918 which indicates that the distribution is leptokurtic, so there are more values concentrated around the mean.

Coefficient of variation $= \frac{Standard\ Deviation}{Mean} * 100$

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Coefficient of variation (ROA)= 26.12%, which is less than 35%, so it can be stated that the mean is representative for the sample. The sample is homogeneous for ROA variable.
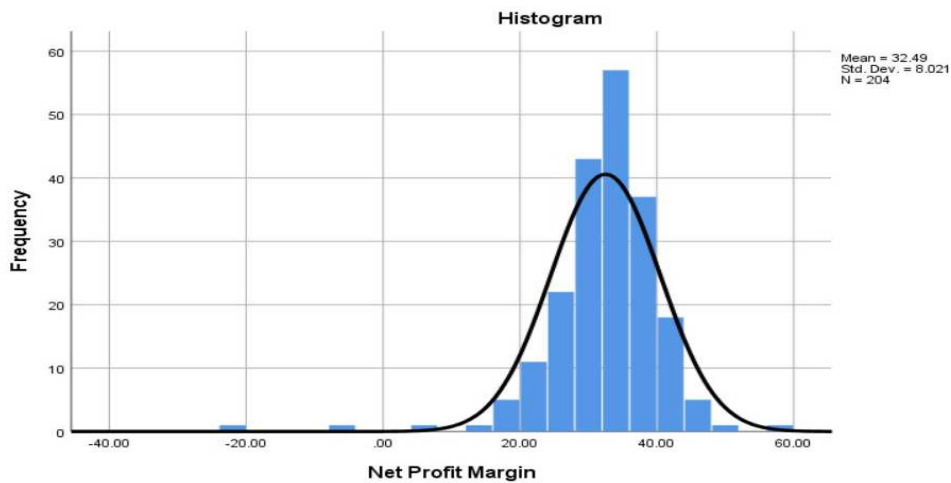
Figure 4: Net Profit Margin Histogram
Source: Author own research results in IBM SPSS Statistics

For Net Profit Margin, Skewness is -1.982, which means that the asymmetry is negative and the distribution is tilted to the right and has extreme values on the left side. Kurtosis= 11.631, so the distribution is leptokurtic.
Coefficient of variaton (Net Profit Margin)= 24.68% < 35%, so the mean is representative for the sample. The sample is homogeneous for Net Profit Margin variable.

Table 4: Pearson Correlation which is significant at the 0.01 level (2-tailed)

		ROA	Net Profit Margin
ROA	Pearson Correlation	1	0.738
	Sig. (2-tailed)		0.000
	N	204	204
Net Profit Margin	Pearson Correlation	0.738	1
	Sig. (2-tailed)	0.000	
	N	204	204

Source: Author own research results in IBM SPSS Statistics

For a more detailed analysis, it is recommended to verify the association between the variables Return on Assets and Net Profit Margin. As a result, the correlation

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matrix between the variables selected for analysis is obtained. A cell in the table contains the value of the correlation coefficient, the critical probability of the significance test and the sample size.

The hypotheses are:
$H_0 : \rho = 0$
$H_1 : \rho > 0$
According to the decision procedure in a statistical test, if Sig. (2-tailed) is less than 0.01, then the correlation coefficient is statistically significant. In this case, Sig.(2-tailed) is equal with 0.000, so the null hypotheses is rejected and Pearson Correlation is statistically significant. There is sufficient evidence to conclude that there is a significant linear relationship between ROA and Net Profit Margin because the correlation coefficient is significantly different from zero. Pearson Correlation measures the strength and direction of linear relationship between pairs of continuous variables, in this case ROA and Net Profit Margin. Pearson Correlation Coefficient is 0.738, so that indicates that the correlation is direct, strong and guaranteed with a probability of 99%.

4. In conclusion

In this paper, I generated a model of the profitability of Chinese Banks during the period 2016-2019 for Return of Assets and Net Profit Margin. The main objective of this method was to evaluate how banking has been affected by these measures.
R Value equals 0.738, which indicates a high degree of correlation between Return on Assets and Net Profit Margin. Also, 54.5% of the variance in ROA can be predicted by Net Profit Margin. A one standard deviation increase in Net Margin Profit leads to a 0.738 standard deviation increase in predicted ROA. So, Net Margin Profit has a positive impact on ROA. Because VIF is equal with 1.000, that indicates that there is no multicollinearity.
I used ANOVA to verify if the regression model is a good fit for the data. It can be concluded that Net Profit Margin reliably predict Return on Assets and the regression model is a good fit for the data.
Also, descriptive statistics was used in order to observe how the distribution is for both variables and to check if the mean is representative for the sample. For Return on Assets asymmetry is negative and the distribution is tilted to the right and has extreme values on the left side. The distribution is leptokurtic, so there are more values concentrated around the mean. For ROA it can be stated that the mean is representative for the sample. The sample is homogeneous for ROA variable.
For Net Profit Margin, asymmetry is negative and the distribution is tilted to the right and has extreme values on the left. For this variable, the distribution is also leptokurtic. Regarding the representativeness of the sample for Net Profit Margin, the coefficient of variation is less than 35%, so the mean is representative for the sample and is also homogeneous.
After that, for a more detailed analysis, I verified the association between the variables Return on Assets and Net Profit Margin. As a result, the correlation matrix

between the variables selected for analysis is obtained. It can be stated that there is sufficient evidence to conclude that there is a significant linear relationship between ROA and Net Profit Margin because the correlation coefficient is significantly different from zero. Pearson Correlation Coefficient is 0.738, so that indicates that the correlation is direct, strong and guaranteed with a probability of 99%.

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AN INQUIRY ON TOP BANKS BY TIER 1 RANKING FROM CENTRAL AND EASTERN EUROPE

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Abstract: *Tier 1 capital ranking represents an important instrument that measures a bank's financial strength and efficiency and The Banker Database, a service provided by The Financial Times it is an important source of data and analysis for the banking sector. Under these circumstances, the objective of the article is to examine the financial and non-financial indicators that might have an impact on the Tier 1 capital ranking banks from Central and Eastern Europe. The research starts with a brief theoretical review of the indicators that influence the financial performance of the banks, the profitability, efficiency and the capital structure. The empirical research was conducted on the first 200 banks from Tier 1 capital ranking and the data was collected from The Banker Database, in the period 2015 - 2018. The banks included in analysis were from 23 countries with a total of 800 observations. The empirical research consists in a qualitative and a quantitative analysis of the banks, with focus on their structure, characteristics and their financial indicators. Using a panel data econometric model, the study highlighted the correlations between the financial and non-financial indicators and the rank of the banks. The researched results revealed that the highest number of the top banks were from Russia (57 banks), Poland (17 banks), Bulgaria (12 banks) and Romania (12 banks). The econometric analysis highlighted that the dependent variable had a positive correlation with Return on Asset (ROA), Total Liabilities to Total Assets (LTA), Loans to Assets Ratio (LTA) and Risk-Weighted Assets Density (RWA). A negative correlation was found with the number of employees and Return on Equity (ROE). The results obtained are in correlation with the recent studies in the field, a bank with smaller liabilities and higher revenues is more efficient and has a higher position in the Tier 1 capital ranking.*

Keywords: *Banks; Financial indicators; Tier 1 Rank; Central and Eastern Europe.*

JEL Classification: *G21; G32.*

1. Introduction and background

There is an extended literature studying the main factors that influence the financial performance of banks. Considering the objective of the article, to examine the financial and non-financial indicators that have an impact on the Tier 1 capital ranking banks from Central and Eastern Europe, in this section was done a brief literature review of the indicators used in the empirical analysis. Therefore, the paper focus on the following financial indicators: Capital Assets Ratio (CAR), Return on Assets (ROA), Return on Equity (ROE), Non-Performing Loans (NPL), Loans to

Assets Ratio (LAR), Risk-Weighted Assets (RWA) Density, Profit Margin (PM), Total Liabilities to Total Assets (TLTA) and Cost Income Ratio (CIR).

This research was focus only on the Tier 1 capital banks. Tier 1 capital is composed of core capital (Basel Capital Accord, 1998), that considers primarily the common stock and disclosed reserves (BIS, 1998) and it represents an important measure of a bank's financial strength from a regulator's point of view. (Chodnicka-Jaworska, 2019). Also, Tier 1 capital include elements of common equity, like paid up equity, share premium resulting from issue of common equity, statutory reserve, capital reserve, other disclosed free reserves, if any. (Kishore, 2018) This, is strictly connected with Basel II and Basel III regulations, because it is one of the newest factors that can be taken into consideration only for a short-term period of time.

The depositors have asymmetric information about bank's assets and the deposit structure might lead to runs when real assets value falls (Ibimilua and Adebayo, 2018) that's why the banks can be view as vulnerable due to provision of liquidity services. Therefore, the bank's capital, provides a "cushion" against losses for depositors (Diamond and Dybvig, 1983, Morrison and White, 2005).

Banks are required to maintain a certain amount of capital through legal capital requirements (Grzelak, 2019), a reason why the bank's capital it has to be at least at the minimum requirements level. Mishkin (2000) also states that banks are obliged to do so by supervisors and regulators.

Capital Asset Ratio (CAR) represents, in general, a method of credit control. In case of banks, this variable represents the ratio of capital a commercial bank should have to its total assets. When a bank registers a high value of CAR, it's considered to have enough capital to cover the risk-weighted assets and to protect the depositor's assets. (Smith, 2020)

Cooke (1990) believe that an Increase in leverage leads to an increase of the cost of financial distress and if the cost of financial distress rises, then the capital ratio declines. The measure of how a company turns its capital into profit it's done by Return on Capital. This financial indicator shows if a bank is using its investments effectively to maintain and protect the long-term profits. (Li Cain, 2020)

A similar financial indicator is Return on Assets (ROA), which measures the profit a bank can generate considering its total assets. If its value is high, the risk it's low (Chodnicka-Jaworska, 2019).

Return on Equity (ROE) measures the performance of the banks, which represents "the degree of success in attaining a state objective" (Sathye, 2005) and in this specific context the objective is to maximize the shareholder's wealth. It reflects how effectively a bank management is using shareholders' funds (Rega, 2017).

The ratio of Non-performing loans to total loans (NPL) shows the quality of the bank's loan portfolio and measures the credit risk of the bank's clients (Grzelak, 2019). If this indicator has a high value, the bank is considered to be risky.

Another important financial indicator that measures the impact of capital structure is Loans to Assets Ratio (LAR) (Pinto and Joseph, 2017). Abbadi & Abu-Rub (2012) studied the relationship between the market efficiency and capital structure of Palestinian financial institutions considering LAR and obtained a strong positive correlation between the indicators.

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Even though Basel III norms introduced and considers a non-risk weighted parameter, in the primarily guidelines the capital ratio was defined as proportion of Risk-Weighted Assets (RWA). This financial indicator can be used to understand the changes in risk profile of assets portfolio of the banks (Kishore, 2018).

Banks may be seen as special institutions, but they are primary business organizations with the objective to generate profit (Ibimilua and Adebayo, 2018). However, the profit margin was found by Pradhan and Paudel (2017) to be negatively related with stock prices.

Another proxy for capital structure can be considered to be Total Liabilities to Total Assets (TLTA), which was studies by Pinto & Joseph (2017) and found that it has a significant impact on the financial performance in the banking industry.

The expenses in correlation with the income are calculated in Cost Income Ratio (CIR) indicator, dividing the operational costs by the operational income. It's an efficient indicator to measure the operation margins, in special how costs are changing compared to income (Rega, 2017)

In the context of banking sector, besides all these financial indicators there are also non- financial ones that have an importance in studying the banks, like the size of the bank, that can be expressed in number of employees (Nakamura and Roszbach, 2016, Hau et al., 2012) but also in number of branches or the volume of the business (Pinto and Joseph, 2017).

Considering the literature on the financial indicators, in Table 1 was presented the calculation method for each studied variable, for a better understanding of the empirical analysis.

Table 1: Calculation method of the financial indicators

Variable	Code	Formula
Capital Assets Ratio	CAR	The bank's capital is divided by the risk-weighted assets (%)
Return on Assets	ROA	Net profit scaled by total assets (%)
Return on Equity	ROE	Net profit scaled by equity (%)
Non-Performing Loans	NPL	A loan for which wasn't payed the agreed instalments or interest in more than 90 days
Loans to Assets Ratio	LAR	Loans provided to clients scaled by total assets
Risk-Weighted Assets Density	RWA	Risk-weighted assets scaled to total assets
Profit Margin	PM	Net profits divided by net sales
Total Liabilities to Total Assets	LTA	Total liabilities divided by total assets
Cost Income Ratio	CIR	Operating costs divided by operating income

Source: made by author based on reference list

The rest of the paper is structured as follows: Section 2 describes the methodology and the data used, Sections 3 presents the main findings with discussions and Section 4 concludes and gives some future research directions.

2. Methodology and data

The analysed data was collected from The Banker Database provided by the Financial Times, and consists of the Tier 1 capital ranking banks from Central and Eastern Europe in the period 2015-2018. The banks included in the analysis are from 23 countries: Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kosovo, Latvia, Lithuania, Macedonia, Moldova, Poland, Romania, Russia, Serbia, Slovakia, Slovenia and Ukraine.

A panel data econometric model was employed to test the correlations between the analysed indicators and the Tier 1 ranks. The dependent variable was the Ranks of the banks and the independent variables were the financial indicators: Capital Assets Ratio (CAR), Return on Assets (ROA), Return on Equity (ROE), Non-Performing Loans (NPL), Loans to Assets Ratio (LAR), Risk-Weighted Assets (RWA) Density, Profit Margin (PM), Total Liabilities to Total Assets (LTA) and Cost Income Ratio (CIR) and two non-financial indicators: Number of Employees (E) and the number of Branches of the banks (B) .

First, an OLS regression was built to test the multicollinearity of the independent variables by calculating the variance inflation factor (VIF) to see if there is a multicollinearity problem. Also, the Modified Wald test has been done to check for homoscedasticity. The Prais-Winsten regression with heteroskedastic panel corrected standard errors was further used in the analysis, with the following form:

$$Rank_{it} = \alpha_i + \beta_1 CAR_{it} + \beta_2 ROA_{it} + \beta_3 ROE_{it} + \beta_4 NPL_{it} + \beta_5 LAR_{it} + \beta_6 LAR_{it} + \beta_7 RWA_{it} + \beta_8 PM_{it} + \beta_9 LTA_{it} + \beta_{10} CIR_{it} + \beta_{11} E_{it} + \beta_{12} B_{it} + \varepsilon_{it} \qquad (1)$$

This model was tested on all 238 banks from the sample, regardless of the number of years they appeared in the Rank, and all the panel data testing and coefficient estimation was done using Stata Statistical Software: Release 13.

3. Results and discussion

The empirical analysis begins with a qualitative analysis of the banks and their particularities. The structure of the banks, based on the number of observations collected, can be seen in Figure 1.
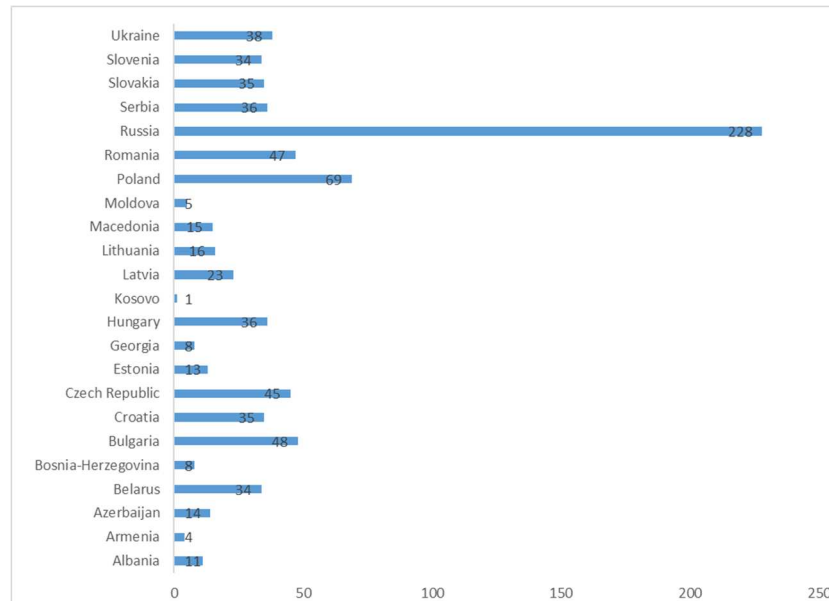
Figure 1: The structure of the analysed banks
Source: own computation using data from The Financial Times Ltd 2019.
TheBankerDatabase.com

The countries with most banks in the Tier 1 Ranking are: Russia, with 57 banks, the higher rank being 1 and with an average rank of 101; followed by Poland, with 17 banks, rank 5 being the average one and Bulgaria and Romania, both with 12 banks and an average rank of 105, respectively 100.

The next step of the analysis represents the descriptive statistics of all banks, which are presented in Table 2.

In the ranking were 200 positions and a total of 800 observations, but the banks changed from year to year. In average, in the sample, there were 120 banks from a certain country, with a minimum number of 1 from the same country and the maximum number of 238 banks from the same country.

Data with 800 observations were available only for two variables: Capital Assets Ratio (CAR), which registered a mean value of 11.56%, with a minimum value of 2.43% and a maximum value of 73.89%, and Return on Assets (ROA), which registered a mean value of 0.77% with a minimum of -42.63% and maximum of 9.73%. The negative values obtained are due to the losses the banks registered in the analysed period.

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Table 2: Descriptive statistics

Variable	Observations	Mean	Min	Max
CAR	800	11.56	2.43	73.89
ROA	800	0.77	-42.63	9.73
ROE	790	5.12	-285.77	805.85
NPL	496	10.06	0.16	74.12
LAR	790	67.65	12.5	210.4
RWA	745	70.50	12.45	203.47
PM	786	8.89	-2558.71	684.3
LTA	799	86.74	9.01	112.32
CIR	787	52.01	-170.29	1264.51
E	627	6955	95	330677
B	629	341.21	1	18000
Banks	800	120.52	1	238

Source: own computation using data from The Financial Times Ltd 2019. TheBankerDatabase.com

For Return on Equity (ROE) variable were available 790 observations and the indicator registered a mean value of 5.12, with a minimum of -285.77% and a maximum of 805.85%.

For Non-Performing Loans (NPL) indicator were available 496 data. In average, the banks have 10.06 Non-performing loans, the minimum number was 0.16 loans and the maximum number of non-performing loans was 74.12.

Loans to Assets Ratio (LAR) has 790 observation and registers an average of 67.65 which means that most of the bank's assets were financed through debt.

For Risk-Weighted Assets (RWA) Density were collected 745 observations and the banks register in average the value 70.50, with a minimum of 12.45 and a maximum value of 203.47, which shows that the risk profile of the banks was deteriorated.

For Profit Margin (PM) were available 786 observations and the banks registered an average value of 8.89. The highest margin losses were -2558.71 and the highest margin profit was 684.3

For Total Liabilities to Total Assets (LTA) variable were collected 799 observations and the banks register a mean value of 86.74.

For Cost Income Ratio (CIR) indicator were available 787 observations and the mean value registered was 52.01.

As for the non-financial indicators, two of them were introduced in the model, both of them measuring the size of the banks. Employees, for which 627 observations were available, showed a mean value of 6955 employees in a bank, the minimum number being 95 and the maximum number of employees was 330677. This variable was converted into natural logarithm when included in the econometric model. The other variable was the number of Branches, with 629 observation available and their number varied from 1 to 18000.

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In Table 3 is presented the correlation matrix for all the analysed indicators and it can be observed that the Rank has a positive correlation with CAR, NPL, RWA and CIR and a negative correlation with ROA, ROE, LAR, PM, LTA, E and B.

Table 3: Correlation matrix

Var	Rank	CAR	ROA	ROE	NPL	LAR	RWA	PM	LTA	CIR	E	B
Rank	1											
CAR	0.0282	1										
ROA	-0.02	0.26	1									
ROE	-0.077	0.15	0.86	1								
NPL	0.241	-0.04	-0.34	-0.4	1							
LAR	-0.15	0.01	-0.08	-0.13	0.12	1						
RWA	0.115	0.33	-0.09	-0.07	-0.07	0.18	1					
PM	-0.05	0.19	0.58	0.63	-0.23	-0.06	-0.02	1				
LTA	-0.080	-0.72	-0.26	-0.13	0.001	-0.02	-0.21	-0.19	1			
CIR	0.072	-0.26	-0.34	-0.39	0.13	0.09	-0.12	-0.76	0.22	1		
E	-0.69	-0.27	-0.07	-0.06	-0.09	0.24	0.17	-0.09	0.28	0.04	1	
B	-0.02	-0.06	-0.03	-0.02	-0.04	0.11	0.15	-0.03	0.08	-0.04	0.55	1

Source: own computation using data from The Financial Times Ltd 2019. TheBankerDatabase.com

The results obtained from the pre-estimation tests show there is not a multicollinearity problem, the variance inflation factor (VIF) was 3.82, lower than the threshold of 7. Modified Wald test revealed a $chi2(149)$ of 9.4 with a p-value of 0.000, thus the null hypothesis was rejected.

From the Prais-Winsten regression with heteroskedastic panes corrected standard errors, applied on 378 observations, was obtained an R-squared of 0.88 which means that the variation of the dependent variable can be explained 88% by the variation of all independent variables. Wald $chi2(11)$ was 2209.83 with a p-value of 0.000, which means that the model is statistically significant at 1% significance level. The results from the regression model are presented in Table 4.

Table 4. The results of the regression model

	CAR	ROA	ROE	NPL	LAR	RWA	PM	LTA	CIR	E	B
Coef.	-.271	5.71	-0.46	1.84	-0.05	1.01	0.07	2.91	0.38	-34.5	0.002
Std. dev.	0.48	1.33	0.11	0.23	0.19	0.09	0.04	0.37	0.17	2.91	0.008
Z	0.56	4.28***	-3.96***	7.71***	-0.29	10.54***	1.67*	7.80***	2.17**	-11.89***	3.31***

*, ** and *** mean 10%, 5% and 1% level of significance
Source: own computation using Stata 13 Software

The results obtained in the table above show that two of the studied variables were not found statistically significant, CAR and LAR. All the other ones were validated to be significant at 1%, 5% and 10% level.

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A positive correlation was found between the rank and ROA, NPL, RWA, PM, LTA, CIR and Branches. The highest coefficient of correlation is with Return on Assets (ROA) of 5.71, which means if the ROA increased by 1%, the rank might increase with 5.71 levels, followed by Total Liabilities to Total Assets (LTA), of 2.91, which means that is LTA ratio increases by 1 point then the rank might increase with 2.91 levels, both significant at 99% level of confidence.

A negative significant correlation of the dependent variable was found with ROE and the number of employees. The highest coefficient is for the number of employees, -34.5, which means that if the number increases by 1, the ranks might decrease by 34 levels. And the coefficient of ROE was -0.46, which means that if ROE increases with 1%, the rank of a bank might decrease by -0.46 levels.

The results obtained are in accordance with the recent publications in the field. Grzelak (2019) also studied the Tier 1 commercial banks in Central and Eastern Europe and analysed the significant influence factors, like Size, Non-Performing Loans (NPL), Return on Equity (ROE) and Liabilities to Total Assets (LTA). Fijałkowska et. al (2018) concluded also that a bank it's more efficient if it recorded higher revenues and smaller liabilities. Similar studies, using these financial indicators were also done on non-banks entities: Return on Assets (ROA) and Return of Equity (ROE) were analyses in correlation with the company's value (Hategan & Curea-Pitorac, 2017), Liabilities and Assets were studied in correlation with the market value by Hategan at el. (2017), and Tomczak (2017) realized a complex study on the stability of the financial indicators on 1600 companies.

4. Conclusion

The objective of this paper was to examine the financial and non-financial indicators that have an impact on the Tier 1 capital ranking banks from Central and Eastern Europe. To achieve this purpose an empirical research that consists in a qualitative and a quantitative analysis of the banks was done. The focus of the research was on the structure, characteristics and financial indicators of the first 200 top banks from Tier 1 ranking.

The results highlighted that the highest number of the top banks were from Russia (57 banks), which also had banks on the first rank, Poland (17 banks), Bulgaria (12 banks) and Romania (12 banks). The econometric analysis revealed that the dependent variable had a positive correlation with Return on Asset (ROA), Total Liabilities to Total Assets (LTA), Loans to Assets Ratio (LTA) and Risk-Weighted Assets Density (RWA). From all the indicators the highest correlation is with ROA, if ROA increased by 1%, the rank might increase with 5.71 levels. A negative correlation was found with the number of employees and Return on Equity (ROE).

A limitation of this study represents the availability of data, the results would have been more robust with same number of observations for all the analysed variables and also a longer period of time. Considering this, a further research direction for this subject would collecting more recent and complete data and also consider other non-financial and financial indicators in the analysis.

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APPROACHES TO THE CONCEPT OF SUSTAINABILITY IN ECOLOGICAL AND ENVIRONMENTAL ECONOMY

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Abstract: *In the economy, there are different approaches to sustainability. In this article I want to present the differences of approach of sustainability in the environmental economy and the ecological economy although the line between the two tendencies is not always emphasized. Focusing on differences by systematizing positions on the sustainable dimension of the economy and decision-making procedures related to nature. For this I will present the definitions of the environmental and ecological economies drawing attention to the differences and similarities. Using a high degree of simplification, they are the growth-oriented environmental economy, and the stable (equilibrium), dimension-oriented ecological economy (Turner, 1999). It is particularly tempting to combine these approaches with the two concepts of sustainability that stand out in professional debates, the theory of weak and strong sustainability. Perhaps this is also why this distinction is often used in international literature in relation to sustainability (Schaltegger – Burritt, 2005). Researchers usually see the difference between weak and strong sustainability in terms of natural and artificial capital. According to the theory of poor sustainability, natural and artificial capital are fundamentally substitutable. Thus, in order to meet the sustainability criterion, it is sufficient that the combined value of the two types of capital does not decrease, i.e. the destruction of a natural resource creates an artificial capital of at least the same value. According to the theory of strong sustainability, natural capital is not, or to a very small extent, substitutable for artificial capital, and therefore constitutes an absolute constraint on external sustainability, the minimum level of which must be maintained in order to be sustainable. However, this distinction is problematic in several respects. On the one hand, different authors define - up to four - different theories along the strong / weak sustainability dimension (Goodland – Daly, 1996, Turner, 1988). On the other hand, sometimes different concepts are behind the same names (Goodland – Daly, 1996, Turner, 1988, Gutés, 1996, Kerekes, 2006, Fleischer, 2006). Moreover, the theories of strong and weak sustainability do not necessarily differ in determining the path to sustainability. According to some interpretations, the theory of strong sustainability defines the conservation of the value of natural capital as a criterion of sustainability, which in itself reflects a traditional approach of the environmental economy.*

Keywords: *sustainability; environmental economy; ecological economy.*

JEL Classification: *A10.*

1. Introduction

Environmental economics is a sub-field of economics concerned with environmental issues. It has become a widely studied subject due to growing environmental concerns in the twenty-first century. Environmental Economics "...undertakes theoretical or empirical studies of the economic effects of national or local environmental policies around the world... ." Particular issues include the costs and benefits of alternative environmental policies to deal with air pollution, water quality, toxic substances, solid waste, and global warming.

Ecological economics, also known as "bioeconomics" of Georgescu-Roegen, "ecolonomy", or eco-economics, is both a transdisciplinary and an interdisciplinary field of academic research addressing the interdependence and coevolution of human economies and natural ecosystems, both intertemporally and spatially. By treating the economy as a subsystem of Earth's larger ecosystem, and by emphasizing the preservation of natural capital, the field of ecological economics is differentiated from environmental economics, which is the mainstream economic analysis of the environment.

Nicholas Georgescu-Roegen was one of the first economists to argue that an economy faces limits to growth as a result of resource depletion.

Nicholas Georgescu-Roegen in his 1971 work "The Law of Entropy and the Economic Process", in which he argued that all natural resources are irreversibly degraded when used in economic activity.

In the economic debate, sustainable development is most often described as the need to maintain a permanent income for humankind, generated from non-declining capital stocks (Hicksian income).

"Sustainable development is that development process that responds to current needs without jeopardizing the ability of future generations to meet their own needs. (.....) In order to achieve the goal of sustainable development, environmental protection will be an integral part of the process development and cannot be approached independently of it. " Source: Declaration on Environment and Development, Rio de Janeiro, 1992.

In addition, the environmental economy and the ecological economy are practically unified in the fact that nature (natural capital) is the basis of the whole economic activity (Turner, 1999). Thus, differences of opinion regarding sustainability in these tendencies are not primarily (or at least not only) determined by the debate on the relationship between artificial and natural capital linked to poor or strong sustainability. Rather, the difference is found in the starting points of the approach of the environmental economy and the ecological economy.

Several studies have examined the differences between the interpretations of the environmental economy and the ecological economy of sustainability (and the two disciplines in general), indicating that there are actually different approaches to sustainability in the economy (Munda, 1997), Kocsis, 1999), Spash, 1999), Turner, 1999), van den Bergh, 2001), Pearce, 2002), Gowdy - Erickson, 2005), Röpke, 2005), Venkatachalam, 2007).

The ecological and environmental economic approaches differ in that, while the first does not necessarily consider economic growth as a sustainable process, the second does not question the sustainability of economic growth. The reasons for this difference are practically three differences of perspective: different perceptions about the nature of the economic process, the role of nature in the economic process and technological change.

2. Methodology of the research

The material aims to analyze the differences regarding the approach of sustainability in the perspective of the environmental economy and the ecological economy. The research methodology for this work was mainly secondary research, the collection of information found from the processing of data from secondary sources, data that were collected, systematized and analyzed by other researchers.
Browse articles were selected from Google Academic by number of citations.

3. Differences of perspective on sustainability in the environmental economy and the ecological economy

3.1 Nature of the economic process
Environmental economy models try to capture the role of nature in the economic process, primarily through the notion of externalities. In the field of welfare economics, the possibility of separating the individual and social marginal costs was known due to the appearance of costs that are not reflected in the price and are not borne by the manufacturer. If these costs caused by external economic effects (such as pollution) are internalized, the market mechanism uses natural resources efficiently, social optimum is ensured (van den Bergh, 2001, Pearce, 2002, Gowdy – Erickson, 2005). In order to ensure an optimal level of social externalities, the environmental economy offers several tools. These are, on the one hand, administrative tools or rules for pollution, which, however, due to their low efficiency, are not usually supported in particular by economic thinking (Gustaffson, 1998).
The research of the environmental economy focuses on the possibilities of reducing pollution at an efficient, economically optimal level. According to this approach, the sub-optimal transformation of nature is primarily a problem of market failure, that is, efficiency. In this process, nature (natural resources) traditionally appears as a production resource, an environment that absorbs pollution and offers a direct value of pleasure (this is the role of nature in the economic process in this trend) (Röpke, 2004), that is, the purpose of the environmental economy is to extend the neoclassical methodology developed to the recently recognized problems.
In comparison, the ecological economy, examining the economic process from a physical point of view, concludes that it is not necessarily inseparable from the biosphere's growing transformation. The economy does not create or destroy matter and energy, but only absorbs and releases them continuously. Consequently, the important effect of economic growth (more precisely, the increase in the value of physical goods produced in today's economy) in our subject is that the amount of

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material and energy absorbed by the environment increases. According to this approach, resource extraction and waste disposal - essentially biosphere transformation - are not exceptional events, but rather integral parts of economic activity, almost necessary at the same time (Röpke, 2004, Vitousek et al., 1997, Takács-Sánta, 2004). Translated into the language of the environmental economy, every economic moment necessarily involves a transformation of the biosphere, that is, an external influence.

As a result, an important area of research in the ecological economy is the evolution of the absolute extent of the transformation of the human biosphere. To this end, indicators such as net primary production (PPN) or proportion of net primary onshore production (PPNO), expropriated by humans, are used (Rojstaczer et al., 2001, Haberl et al., 2007a, 2007b). A second group of methods tries to take into account material flows at different levels of territorial units. These include material flow analysis, which already has a standard methodology and is also used in environmental economics (Hinterberger et al., 2003), and input-output analysis of material flows (Hubacek – Giljum, 2003). Included is the method of ecological footprint, which aims to capture sustainability in relation to land use.

Although the increase of the size of the economy (which is usually identified as a growth of GDP) can, in principle, be separated by the extension of the biosphere transformation, according to the ecological economy, there is no evidence in this regard in practice. Moreover, based on available empirical data, we tend to see the opposite (Stern, 2004).

Thus, according to the ecological economy, the problem of changing the biosphere is not a consequence of a major or minor deficiency of a possible efficient mechanical mechanism, but an integral part of the economic activity and potentially growing continuously as the size of the economy grows. Thus, if nature is a "resource" necessary for all economic activities and human needs and cannot be replaced by others, then the question arises as to the size of the economy that the biosphere can still support. In order to do this, however, it must be examined whether nature really offers "services" irreplaceable to the economy.

3.2 The role of nature in the economic process

In the economy of the environment nature has emerged as a productive resource, an environment that absorbs pollution and offers a direct value of pleasure (Röpke, 2004). However, this position seems to change, as natural capital and its properties are also increasingly cited by environmental economics (Turner, 1999), Pearce Researchers agree that nature provides different services for the functioning of the economy. and society, for which there are several different groups (Ekins et al., 2003, MEA, 2005, Fisher et al., 2009). One of the most common definitions of ecosystem services to date is the definition of Ecosystem Assessment. of the millennium, which refers to the tangible and intangible benefits that society offers to society from natural and man-made ecosystems (MEA, 2003). The most accepted typology of ecosystem services to date is also the Millennium Ecosystem Assessment. This functional typology distinguishes four groups: these are production-related services (such as food, raw materials, forages), regulatory

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services (such as climate regulation, flood protection, pollination), cultural services (such as education, recreation, artistic inspiration) and support services (such as the nutrient cycle). (MEA, 2005).

All groups agree that nature provides essential services to the economic system and human life (ecosystem services) through ecological processes (ecosystem processes) maintained by biodiversity. The relationship between ecosystem services and ecosystem processes can be defined in such a way that the former can only occur as a result of the latter - while ecosystem processes are the result of biodiversity.

Due to the more severe damage to biodiversity and ecosystem processes (UNDP et al., 2000, WWF, 2004, 2006, MEA, 2005), human biosphere transformation activities that threaten ecosystem services are increasingly much a cardinal problem in the social economic system. This is due to the fact that at least three major economic problems arise in relation to the change in the functioning of the biosphere by humans (Ehrlich - Wilson, 1991):
- deterioration of the aesthetic quality of nature;
- reducing economic opportunities and
- loss of vital services of the ecosystem

These effects occur because the human modification of the biosphere affects the quality of ecosystem processes. This change can greatly reduce the future possibilities of tangible goods, increase the uncertainty about their availability, since natural processes are direct or indirect sources of human welfare, goods provided to human societies. On the other hand, according to our knowledge, certain ecosystem services (such as ecosystem processes or biodiversity) are virtually irreplaceable to one another or to human technology on a larger scale (UNDP et al., 2000, Gustafsson, 1998, Daily, 1997).

Environmental economics and ecological economics are united in that as the rate of human biosphere transformation activity increases (through loss of biodiversity and damage to ecological processes), ecosystem services may be lost, leading to a large reduction in human potential.

This is also indicated by the large-scale survey already mentioned on environmental economists and ecological economists (Illge - Schwarze, 2009), according to which both environmental economists and environmental economists reject Solow's utility-based approach to what regards sustainability and sustainability as a conservation of development capacity. There is also a consensus that the resources that will be essential to humanity for a very long time will not be identified at present.

However, this does not mean that followers of both tendencies would draw similar conclusions about nature and the quantity and quality of natural resources that should be preserved for future generations. On the one hand, it can be concluded that as a result of uncertainty, as many natural resources as possible should be conserved, in accordance with the precautionary principle. On the other hand, it can be concluded that it is not necessary at present to limit the use of resources, because the lack of key resources currently encourages technological innovation to replace them.

The "prudent" position of sustainability is characteristic of the ecological economy and the "techno-optimistic" position of the environmental economy, and this difference is due to the different perceptions of the technological change in the two tendencies.

3.3 The role of technological changes

Technological change is important for sustainability, if it is very receptive to start-ups, starting with the valid growth and sustainability of technologies in the form of the main movement.
1. the problem of replacing eco-efficiency,
2. the uncertainty related to the reflexivity of the technological change and
3. the effect of recoil.

Traditional economic thinking highlights two basic aspects of technological change: increasing productivity (changing the shape of the production function) and new possibilities for substitution between factors. It is clear that market processes encourage the conservation of natural resources, that is, increasing the ecological efficiency, based on the same mechanisms as the labor-saving innovations. By increasing the environmental efficiency, the innovator will be able to obtain a lower unit cost than its competitors and will offer more favorable solutions to consumers (such as a very significant reduction in the energy consumption of the bulbs or the fuel consumption of the vehicles). However, even with large increases in eco-efficiency, it may be necessary sooner or later to replace some resources with others. The technological change that allows the replacement is mainly generated by market processes (changes in relative price ratios). The effect of relative price ratios on the direction and speed of thirteen changes is examined in detail by induced innovation theories (Ruttan, 1997). Basically, I return to Hicks's 1932 hypothesis that "changes in the relative price of resources are themselves an incentive for an invention or a certain type of invention - to make it more economical to use a factor that has become relatively expensive" (Jaffe et al., 2003, P. 470).

Therefore, the market mechanism allows for an increased energy supply and a greater role for economic operators. And we can achieve continuous sustainable growth as well as through our ability to increase ecological efficiency.

At the same time, the ecological economy is based on quite skeptical changes, while the evolutionary economy is hereditary. There are two fundamental sets of critical observations against induced innovation theories.

The first critical criterion comes from the use of technology, which comes from positive feedback and starts from its dependence on changing path. Choosing a particular technological solution can bring additional benefits to both the producer and the consumer, as well as creating negative externalities compared to other competing solutions. Thus, the world of technological change is characterized by positive feedback and dynamic increasing returns (David, 1985, Arthur, 1989, 1990, 2006). Therefore, the various properties of the technologies are completely transparent and subsequently create main allocation problems (Arthur, 1989, 1990):
- unpredictable: long-term holdings are unpredictable, some uncertainties are not mediated.

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- inflexible: a single technology allows support or benefits if everyone is able to influence future choices.
- path dependent (non-ergodic / path dependent): different series (optional) can be directed to different outputs.
- inefficient route: it may be the case that it is only worth choosing one solution because it has already been chosen by several people. In other words, it can happen as a "shutdown", this solution will be better than another, because many people have already chosen it.

In addition, the resulting structure can not only screen out incompatible innovations, but also influence the direction of the search for novelties. (Nelson, 1995) A general opinion is formed about the desired development directions, the significant problems, a technological regime or paradigm is formed. (Dose, 1982, Kemp et al., 1998).

In this way, there may be a number of obstacles to the spread of technological solutions that are more eco-efficient or offer new possibilities for substitution; historically established structures and systems can be a very serious obstacle to the replacement of existing (possibly less favorable) versions. Thus, changes in price ratios are only one - and not necessarily the most important - influencers of technological change.

Another fundamental set of critical remarks against theories of induced innovation calls into question the implicit assumption that economic actors would in all cases be able to anticipate their needs, to force the creation of a solution with optimal productivity. According to the evolutionist explanation of technological change, the global objective function, a defined set of choices, maximization, and rational decision-making are unsustainable assumptions about innovation processes (Nelson – Winter, 1982, Dosi – Nelson, 1994).

Uncertainty is an essential element of technological change. It is not just a problem of cognition, but an inseparable element of the process (Hronszky, 2005). This is clear from the positive feedback mechanisms analyzed earlier, but it is also central to theories that discuss the innovation process in depth (Marinova – Phillimore, 2003, Fagerberg, 2005).

Uncertainty is not only about the direction of technological change, but also about the social and environmental impacts of individual innovations. The previously explained systemic operation of the biosphere and the multitude of factors influencing the given technical conditions (Ropolyi, 2004) make it theoretically impossible to predict the effects of new solutions. In addition, a new technological solution can change the conditions under which it was created and thus its own potential effects (reflexivity). A significant portion of today's new technological solutions seek to remedy the (often unforeseen) problems caused by previous solutions (Beck, 2003).

With regard to the introduction of new technological solutions, there is therefore good reason to assume that they will have effects (for example on the natural environment) which cannot be foreseen. In addition, as a result of increasing innovation activity, the time available for possible adaptation is decreasing.

It is further complicated by the fact that many of them are not detectable in the usual way (by the senses). These, to use Beck's, 2003) terminology, are modernization

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risks and are based on causal interpretation and are created in the (scientific) knowledge that applies to them. In this way, however, social processes and institutions significantly influence their recognition (recognition of their existence at all) and the search for solutions.

This is well illustrated by the change in the discipline of technology assessment, which studies the future effects of new technologies. Initial hard (expert) methods have been confronted with limitations, so the focus has increasingly been on channeling the widest possible range of possible perspectives and interpretations (Schot, 2001, Hronszky, 2002). The emphasis on evaluation has become more and more influential (even in the early stages of development), as at the time of impact recognition, due to the positive feedback mechanisms analyzed earlier, the scope for change may be limited.

Examining the relationship between technological change and sustainability, we considered the phenomenon of rebound effect to be the third fundamental topic. This suggests that an increase in the productivity of a natural resource does not, in most cases, reduce factor use to the extent that would be expected from the extent of efficiency gains. Moreover, in many cases it is directly related to the increased use of the resource (the latter case is called the Jevons paradox).

For example, an increase in the fuel efficiency of motor vehicles has been accompanied by an increase in the number of cars and kilometers traveled (Kemp et al., 1998, York, 2006). In parallel with the introduction of energy-saving solutions in households, we observed an increase in the size of residential units, higher room temperatures, and increased use of electrical household appliances (Hanssen, 1999).

The articles dealing with the rebound effect are relatively uniform in that some of the savings that can be gained through efficiency gains are "taken back" by users. There can be many direct and indirect channels for this (Alcott, 2005, York, 2006, Sorell, 2009):

- The relatively cheap factor becomes attractive, so the number of consumers may increase compared to the previous one, and the actors prefer technologies based on the given factor in investment decisions. It can also help develop previously unknown applications for the resource.

- The savings gained through efficiency gains can be spent by consumers on increased consumption of a given product or on the consumption of another (sometimes more resource-intensive) product. By reducing unit costs, companies can gain a competitive advantage that can result in increased sales volumes.

However, the literature on the extent of the rebound effect and the causal relationship between efficiency gains and increasing use is far from uniform. The extent of the rebound effect should be expressed as a percentage of the expected resource savings based on the efficiency increase.

This is greater than zero in almost all cases, but some authors say only more than a hundred in special cases (so it actually causes an increase in use). It is currently difficult to resolve this debate, as the cases supporting the Jevons paradox mostly concern energy-intensive technologies with a wide range of applications (Sorell,

2009), while empirics are necessarily limited to a certain period, sector, or country / group of countries (Alcott, 2005).

However, many of the previously mentioned examples and other empirical data (e.g. Polimeni – Polimeni, 2006, Herring – Roy, 2007) show that it is not uncommon to move together to increase the efficiency of a resource and increase its absolute use. However, proof of causation poses a number of problems, as on the one hand, increasing use may be due to many other factors, and on the other hand, the methodology of studies supporting the Jevons paradox is not conclusive in this respect (Alcott, 2005, Sorell, 2009).

In any case, however, the savings that can be gained through increasing eco-efficiency can almost never be fully realized. In particular, in the case of resources that can be widely used and the strong dependence of the technologies associated with them, it is expected that the absolute use of resources for a given resource, but even more so for the economy as a whole, will actually increase. In terms of the rebound effect, it can therefore be assumed that increasing eco-efficiency alone is not enough to increase sustainability, and may even have the opposite effect.

In this chapter, we have identified radically different positions in all three areas related to the sustainable size of the economy. While research topics and positions in the environmental economics literature do not fundamentally question the sustainability of economic growth, the literature on ecological economics clearly does so.

The reasons for this difference are mainly to be found in the fact that environmental economics is typically market- and money-centric (i.e. treats environmental characteristics as external), while ecological economics shows that empirical studies so far show that economic growth is increasingly transformed by the biosphere. which can lead to the loss of vital ecosystem services. Moreover, according to ecological economics, we are / will be much less likely to be able to replace these ecosystem services with artificial capital through technological change than according to environmental economics. Contrary to the latter's "techno-optimistic" approach, ecological economics takes a kind of "cautious" view of sustainability, which is why the most important thing today is to become aware of what we do not know about sustainability (O'Hara, 1996). Thus, contrary to Bartus's, 2008) statement, it does not seek to determine the optimal size of the economy, in fact, it seeks to avoid or go beyond the instrumental optimization-centric approach of environmental economics, given primarily the scientific uncertainty related to sustainability

4. Conclusions

In the study, different economic approaches to sustainability was analyzed, systematizing them into positions of the environmental economy and the ecological economy. Some aspects in which the two tendencies can be considered relatively uniform, was identified, even from these "common points" the two paradigms often draw different conclusions.

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The economy of the environment approaches sustainability with the approach and tools of the neoclassical welfare economy, while the ecological economy uses a transdisciplinary, problem-oriented approach. Based on the integration of other social and natural sciences knowledge, important for sustainability, the ecological economy questions the reductionist points of view and the solutions of the environmental economy. The causes of environmental problems are considered to be far deeper than a market failure problem and urges radical institutional changes to be made towards sustainability.

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DIGITAL ECONOMY AND THE DSM

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Abstract: *The new economy or the digital economy, resulting from the interaction between the personal computer, telecommunications, internet and electronics, is characterized by series of features completely different from the traditional economy. It is about building a business model, e-comerce, e-banking, etc., through intra-internet, wich radically will change the efficiency, in the sense of reducing the costs, including transactional ones, based on: business to business reationships(B2B), business-employee(B2E), business and government (B2G), government and business(G2B), etc. The change has to go beyond the patterns we have become accustomed to. The competitive advantage represents that differentiating factor, financial or qualitative, perceived by the target audience as superior to competition. This is what justifies brand loyalty, although in recent years this is no longer a guarantee. This is also where sustainability comes in. Gaining competitive advantage means keeping the line in digital markets and increasing the performance of companies through technological and IT innovation. The companies that benefit of competitive advantage are being more cooperative than the noncooperative ones, that gain lower competitiveness. Success is caused by the good relation between structures in the industrial sector and competitiveness. Digital transformation is the concept involved in gaining the competitive advantage, in the first place. The true digital transformation, will not happen in a Big Bang, or as a result of a beautiful slogan, for us to be in trend, but it is a process, a journey so dependent on the connection between each participant in the daily activities, within the organization and the processes at department or company level, as well as the technology partner chosen.*

Keywords: *digital transformation; digital market; DSM (Digital Single Market); competition; innovation; competitive advantage.*

JEL Classification: *O35; O36; D41; D42; L1; L8.*

1.Introduction

The data shows that in order to face stiff competition, new companies need to adapt to the specific requirements of the digital economy. The Internet and digital tehnologies are changing the face of our world. Competitiveness standards are imposed by the degree of implementation of the digital productive transformation process. Digital transformation causes many situations that need solutions, like: digitalization of industry is lagging behind; incomplete DSM(digital single market); digital divide; lack of digitally competitive workforce; low number of digital champions; lack of cybersecurity readiness; building trust in digital transformation; lack of investment; increased productivity and jobs; increased efficiencies;

empowerment, etc. All these problems create the need to implement models specific to technological revolution. Digital innovation centers are yet one of the main elements of the digitalisation strategy, of the European industry. Within successful Digital Europe programs, these centers would function as a one-stop shop, offering their clients: access to digital technologies and skills, an infrastructure for testing digital innovations, training courses for the development of digital skills, financing advice, market information and network collaboration opportunities, etc. The future will be governed by technology and machines. (Kitov, 1956, p. 358, Bondarenko, 2019, p. 3).

2. The Digital Economy

There are many definition for this concept. (Tapscott, 1996, Lane, 1999, Mesenbourg, 2001).

The term digital economy comes from the term information economy, wich treats the expansion of information and technology, on the grounds of the development of digital transformation in an pro- competitive environment. The concept refers to the largely unrealized transformation of all economic domains by computer digitalization. (Brynjolfsson, Kahin, 2000). Mesenbourg, (2001) divides the digital economy main sectors into production of ICT infrastructure and the application of ICT for other economic actions. The ICT infrastructure encompasses the devices, networks, protocols, procedures designed for telecoms and IT, with the purpose of encouraging competition, the information exchange and technology infrastructure as an ensemble.

Organizations can become more and more efficient if they obtain the competitive advantage from the digital markets. This is possible if the level of use for IT, grows. (Porter and Millar, 1985, Brynjolfsson, Hitt and Young, 2000, McAfee, 2001, Blinder, 2001).

There are three main features of the digital economy: it is unevenly distributed; it is growing faster than overall economies, especially in the global South; it contributes significantly to employment. (Bukht, Heeks, 2017, p. 19).

The digital economy is evolving at a fast pace, its growth is being determined by the intensification of competition on the digital markets. Digital markets are really making progress, when technology on technology markets, is advancing very fast through innovation on the IT fields.

Table 1. Big Data and Advanced Analytics (BDAA) 2020-2040

EDT(Electronic Data Transfer)	Technology Focus Areas	Impact	Attention	TRL(Technology Readiness Levels	Horizon
Data	Advanced analytics	Revolutionary	Expectation	4(Component and/or breadboard validation in	2025

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EDT(Electronic Data Transfer)	Technology Focus Areas	Impact	Attention	TRL(Technology Readiness Levels	Horizon
				laboratory environment)	
	Communications	High	Enlightenment	6(System/subsystem model or prototype demonstration in a relevant environment)	2030
	Advanced Decision Making	Revolutionary	Dissillusionment	6(System/subsystem model or prototype demonstration in a relevant environment)	2025
	Sensors	High	Expectation	4(Component and/or breadboard validation in laboratory environment)	2030

Source: Wells, Peach, Nato, Science and Technology Trends 2020-2030, p. 21, 2020

The table indicates the areas of interest for the research activity, in the field of new technologies, their impact upon competition, areas of focusing on technology and competition and the degree of completion for modern technologies. It is observed that the communications and decision-making management, have priority for the research, while the advanced research for certain fields is occupying a second place.

3. Digital transformation and the competitive advantage

The internet process started during 1950, with the development of electronic computers and after 1969 internet networks were launched with the help of Pentagon computers called Arpanet.
When we think about digital transformation we think about automation, speed, technology, machines, robots, artificial intelligence, mobility, augumented reality, face recognition, fingerprints, biometric data, 5G, genetic manipulation, internet of objects, sensors and many other modern technologies.
Competitive digital markets have the role of implementing digital transformation.
Digital transformation means a fundamental change in the way an organization serves the customers, and it is concerned about radical thinking and the methods

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of how an organization uses technology , people and processes, for the purpose of profit. Digital transformation has to lead to the digital revolution and must accelerate the economic competition.

Table 2. The keywords that constituted the emerging technologies fot the machine tools

Technology	Keywords
Big data	Big data, data collection, data transmission, transfer protocol, Ethernet, industrial wireless network, Message Queuing Telemetry Transport(MQTT), NC-Link, MT-connect, wireless transmission, distributed platform, Hadoop
Cloud computing	Cloud computing, edge device, edge module, fog calculation, fog end equipment, cloud platform, cloud service, cloud storage, cloud industrial, cloud, distributed computations, parallel computing, cloud manufacturing
Internet of things	Internet of things, industrial, internet of things, industrial internet, IoT, iIoT
Cyber-physical systems	Cyber-Physical sistem, CPS, Digital twins
Intelligent methods and applications	Artificial intelligence, machine learning, logistic regression, support vector machines, naïve bayes, decision tree, random forest, transfer learning, deep learning, virtual reality, augumented reality, convolutional neural network, recurrent neural network, restricted Boltzmann machine

Source:Mdpi (Chen, Zhang, Zhou, Liu, Li, Yin, 2019, p. 18)

The table describes the most important keys for implementing new technologies, in order for the society and economy, to become more and more competitive, in a competitional world.

Michael Porter, among others, an economist, researcher and professor at Harvard Business School, is the author of a book published in 1985, Competitive Advantage, which later became a reference material for anyone interested in the business environment. Mr. Porter considers that the competitive advantage represents a concrete benefit related either to the purchase value or to the characteristics of the product or service offered, which, through their uniqueness, would justify a higher price. In other words, you can't win unless you're either cheaper or different (and thus perceived by customers as better or more relevant). From the perspective of the digital economy, the competitive advantage is a concept, whose applicability is determined by the degree of technologicalization, in other words by the technological progress and the speed of assuming new IT values in the organization. Digital transformation is formed and perceived as the sum of the competitive advantages for IT and new technologies. (Fuentes, Camara, Hernandez, Sanchez, 2003, p. 2-10).

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Developing new competitive digital markets and gain competitive advantage by implementing new technologies is the key for solving price and quality competition dilemas. (Maksimovic, Kostic, 2010, p.39-56, Kostic, 2018).

4. The Digital Single Market

The Digital Single Market requires strategies from the European Commision that will easy the acces to online world for individuals and businesses. A Digital Single Market(DSM) is a market where each person is free to move and the circulation of services and capital is also free.
This Market also applies policies that belong to the European Single Market and it covers digital marketing, Ecommerce and telecommunications domain. DSM is also a part of the Digital Agenda for Europe 2020-2021.
The DSM strategies promoted by European Commision are based on three Pillars:
1.   Acces: aiming at better digital products and services for consumers and businesses all over Europe;
2.   Environment: refers to making better conditions and building a higher level in the playing field for digital networks, where innovative services will grow;
3.   Economy and Society: aims at maximizing the potential of growth for digital economies;
The DSM politics should follow the principles of six areas of control: Digital Culture; Digital Future; Digital Life; Digital Trust; Digital Shopping; Digital Connectivity.

Table 3. A comparative perspective on possible initiatives to realise more of the potential of the Digital Single Market

Thematic area	Potential magnitude of gains	Implementation difficulty	Measures needed and identified	Political difficulty	Subsidiarity difficulty	More public resources needed	Action needed
High payback areas where prompt action is feasible							
Public funding for AI and robotics	H	L	Y	M	L	Y	Further increase funding
Private funding for start-ups and scale-ups(CMU)	H	M	Y	H	H	N	Political resolution needed
Corporate taxation	M	L	Y	H	H	N	Political resolution needed

Thematic area	Potential magnitude of gains	Implementation difficulty	Measures needed and identified	Political difficulty	Subsidiarity difficulty	More public resources needed	Action needed
High payback areas where more study is needed to formulate plans							
Training and re-training	H	M	N	M	H	Y	Study and funding needed
Employement and social protection	H	H	Y	H	H	Y	Many needs are understood
E-government	M	H	Y	M	H	Y	Study barriers, then push ahead
Network and information security	H	H	N	M	H	Y	More EU activism needed
High payback areas where the way forward is not clear							
Cross-border sales of goods that require delivery	H	H	N	H	H	N	Study, better mutual recognition
Rethinking the structure of the EU audio visual sector	H	H	N	H	H	N	Comprehensive study
Medium payback areas where more study is needed to formulate plans							
Expand scope of consumer protection	M	M	N	M	M	N	Study of promising sectors
Further improve access regulation	M	M	N	M	M	N	Study

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Thematic area	Potential magnitude of gains	Implementation difficulty	Measures needed and identified	Political difficulty	Subsidiarity difficulty	More public resources needed	Action needed
Lower cross border parcel delivery NPO prices	M	L	Y	H	H	Y	Political resolution needed
Areas where both study and research are needed							
Liability and new technologies	L	L	N	M	M	N	Study
Fake news and inappropriate content	H	H	N	M	M	N	Study and technical progress
Identifying collusion	M	M	N	L	L	Y	Study and technical progress

H=high, M=medium, L=low, Y=Yes, N=No

Source: Bruegel estimates based on European Commission Impact Assessment reports other sources identified in the next, www. Bruegel.org, The European Digital Single Market

The table above describes the potential of the DSMs, and the determination of some important criterias. Markets like Public funding for AI, training and retraining, employement and social protection, have a high potential for Incomes, when markets like liability and technologies, have a low income potential. On the other hand, when we consider criterias like political difficulty, implementation difficulty on the DSMs, we are approaching a medium level of potential, for areas like funding for AI and robotics, or training and retraining, network and information on security, etc. The differences of potential on the DSMs are also determined by the fact that, the areas where they function, are feasible for actions, or they require more planning. The table also offers solutions for each thematic area, depending on the level of potential. For example areas like network information and security, will need
more EU activism, or areas like liability and new technologies will require more study.

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Table 4. Digital Single Market, (DSM): Legal instruments adopted or proposed during the 8th Legislature, (2014-2019)

E-commerce	Intellectual Property	Data and AI	Trust and security	Consumer protection	E-commerce	Electronic communications networks and services
Regulation on cross-border portability of online content services (2017)	Directive Trade Secret (2016)	Regulation General Data Protection (2016)	Reg. eIDAS (2014)	Regulation on Consumer Protection Cooperation (2017)	Regulation establishing a Single Digital Gateway (2018)	Regulation Open Internet / roaming / TSM (2015)
Regulation addressing unjustified geoblocking (2018)	Regulation and Directive permitted uses in copyright for print-disabled persons (2017)	Regulation on Free flow of nonpersonal data (2018)	Directive on Network Information Security (2016)	Directive on contracts for the supply of digital content - P2015	Directive on the reuse of public sector information (recast) P2018	Decision on use of 470-790 MHz frequency band (2017)
Regulation on cross-border parcel delivery services (2018)	Regulation on Copyright and broadcasting organisations – P2016	Regulation e-privacy – P2017	Directive on combatting fraud and counterfeiting of non–cash means payment P2017	Directive Better enforcement and modernisation of EU consumer protection rules – P2018		Regulation to promote Internet Connectivity in local communities (Wi-Fi4EU) (2017)
Directive AudioVisual and Media Services (2018)	Directive on copyright in the Digital Single		Regulation e-evidence (P2018)	Directive Collective redress – P2018		Directive on European Electronic Communications Code (2018)

E-commerce	Intellectual Property	Data and AI	Trust and security	Consumer protection	E-commerce	Electronic communications networks and services
	Market – P2016					
Payment Services Directive 2 (PDS2) (2015)			Regulation EU Cybersecurity Centers (P2018)			Regulation BEREC (2018)
Regulation on promoting fairness and transparency for business users of online intermediation services – P2018						
Regulation on the implementation and functioning of the .eu Top Level Domain name – P2018						
Directive on the reuse of public sector information						

E-commerce	Intellectual Property	Data and AI	Trust and security	Consumer protection	E-commerce	Electronic communications networks and services
(recast) P2018						

Source: Bruegel, Petropoulos, Yeung (2019), "Benefits of European Digital Single Market",
IMCO Committe, www.bruegel.org, The European digital single market, p. 40

The table above describes the instruments for the DSMs and the documents that contain the regulations and the directives for each instrument. For example e-commerce is being regulated by official documents like, Directive AudioVisual and Media Services (2018) and the Directive on the reuse of public sector information (recast) P(2018), in order to protect the proper functioning.

5. Pillars of interest for Europe and Romania

The Digital Agenda for Europe and Romania 2020, follows the next structure:
a) Pillar 1 - Digital Single Market - allows free cross-border access to services and entertainment online
b) Pillar 2 - Interoperability & Standards - Allows integration of devices, applications, and data services required for interacting across borders
c) Pillar 3 -Trust and Security - increasing the confidence of Internet users in electronic services and online transactions, in order to stimulate the consumption of ICT services
d) Pillar 4 - Fast and ultra-fast access to the Internet - target investments for band infrastructure wide, in order to benefit from the latest electronic technologies and services
e) Pillar 5 - ICT Research and Innovation - stimulates adequate funding for growth competitive advantage in ICT.
f) Pillar 6 - Increase the level of digital literacy, skills and inclusion - create one bridge over the digital divide for all consumers, so that they can benefit in
equally full advantage of ICT services.
g) Pillar 7 - ICT benefits for EU society - focus on ICT's ability to reduce
to consume energy, to support the assistance of the elderly population, to revolutionize the services of health and to provide better public services. (Romanian Government, 2020).
It is important to approach those pillars, in order to develop new perspectives for the digital environment.

6. Conclusions

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To achieve the specific objectives for the digital economy, nations have to adjust competition to digital market sequences standards. The strategy for the digital markets have to follow three pillars: improving the access of consumers and businesses, to digital goods and services; creating and enabling environment for the development of digital networks and services, with the scope of maximizing the growth potential of the digital economy. Based on a comprehensive experience in configuring digital platforms across multiple domains, people will be able to identify the right technologies to convert the existing ICT(Information Comunication and Technology) infrastructure into a seamless, scalable and integrated ecosystem that will transform the way our businesses operate and will allow continuous improvement of processes. Competition and competitiveness
will make sense in the civilization of the future, tangential to the development of the technological process on technologicalmarkets.

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VOLUNTEERING - ENGINE OF YOUTH DEVELOPMENT

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Abstract: *In the last decade of the twentieth century, the phenomenon of volunteering began to take shape in Romania. Therefore, it is necessary to study its evolution, the necessary resources, the implications and benefits it brings to society at the collective level but also at the individual level. The purpose of the paper is to determine the degree of involvement of young people in volunteer activities. About volunteering it can be said that it can contribute to the development of young people on several levels: social, psychological, human and why not even economic. In the first part of the present study are presented some theoretical aspects regarding the volunteer activity, and in the second part are presented the research methodology and the results of the data analysis obtained through the questionnaire.*

Keywords: *volunteering; youth; benefits; correlation ratio.*

JEL Classification: *J31.*

1. Introduction

Volunteering can be considered an important part of modern social and economic life, as it can contribute to strengthening globalization through increasingly frequent intercultural exchanges.

Volunteering integrates any type of individual, engaging him in various situations and providing a favorable framework for the accumulation of diverse experiences. Human development is materialized through education, through various contacts within society and certainly through volunteer activities.

Volunteering is also a phenomenon that can cover a wide range of people, regardless of age, race, culture, religion, sexual orientation, political orientation, social class, level of education, even overcoming the language barrier.

The objectives of this research are the following:

1. Determining the degree of involvement of young people in volunteering activities, taking into account issues such as gender; the environment of origin; occupation.

2. Determining the main reasons why young people choose to get involved in volunteer activities.

This paper has the following structure: the current state of knowledge; research methodology; research results; proposals for action, conclusions and bibliography.

2. Literature review

The European Youth Forum considers that "volunteering activities are not based on profit and appear at the initiative of the volunteer or in an organized setting" (European Youth Forum, 2019). Attractive activities for volunteers are considered the following: sports, social activity, culture, recreation, education (formal; non-formal), vocational training, personal development.

The Explanatory Dictionary of the Romanian Language defines volunteering as follows: "Activity carried out for the benefit of other people or society without pursuing a material gain" (Dex online, 2019).Volunteering is considered to be a sum of values such as: altruism, generosity, social responsibility, altruism (Jardim& Silva, 2018). At the same time, the European Youth Forum mentions that an activity can be considered voluntary only if several criteria are met, such as (Center for Research and Consultation in the Field of Cultures, 2018):

- Own initiative - a person, without the constraint of external factors, chooses to dedicate his time and energy to meet certain requirements or needs of society and the environment in general, but also in particular at the individual level;
- Remuneration- as is clear from the above definition, it is clear that the volunteer does not engage in such activities for the purpose of obtaining benefits of an economic nature, but especially of a social nature (self-esteem, prestige, generosity, appreciation of society, altruism, etc.);
- Organizational activity- voluntary activities are usually carried out under the auspices of non-profit institutions, non-governmental organizations.

In order to be able to emphasize the dimension of youth involvement in volunteering activities, it is necessary to make a conceptual delimitation regarding the youth segment. At the Romanian level, there is the Youth Law, according to which citizens are considered young when they are between 14 and 35 years old (Romanian Parliament, 2006).

Regarding the youth segment, it was found that young people seem to prefer informal or unconventional forms of civic and political participation, which best suit their interests and needs. At the same time, their participation is generally separate from any political affiliation. According to a 2015 statistic, about 1 in 4 young people across the European Union have been involved in a form of volunteering).

Approached from a broader perspective, it can be mentioned that volunteering has two main components, namely: the psychological component and the sociological one. In terms of the psychological component, volunteering satisfies self-esteem, it follows the motivations of the volunteers, and through altruism one individual can differ from another individual who does not practice such activities. From the perspective of the sociological component, the social changes that occur over time are followed, which changes the structure and concerns of the volunteer but also the individual (Jardim& Silva, 2018). Any activity that an individual carries out is based on motivation. When it comes to volunteering, the spectrum of intrinsic motivation is dominant. Nowadays, motivation is supported by impulses such as: career

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development, personal growth, professional experience, the development of new skills and competencies, premises to be able to get a job more easily; new friends etc.

In a general note, in order to be able to benefit from volunteering, the first step is obviously to practice it. Referring to the perspective of motivating human resources in an organization whose main purpose is to make a profit, we can extrapolate this relationship from the perspective of non-governmental organizations, where motivation must be generated by intrapersonal beliefs.

Therefore, it can be said that it is much more difficult to motivate individuals when the goal is not economic in nature, but based on intrapersonal beliefs. Due to the heightened heterogeneity of individuals, it is difficult for non-governmental organizations to engage, motivate individuals to serve a cause or voluntary activity. Based on the heterogeneity of individuals, it goes without saying that the benefits they obtain or perceive are different.

Young people have different reasons why they choose to volunteer, compared to the elderly, as they are mainly interested in gaining qualifications, experiences, skills that can be useful for their future job.

The basis of volunteering is to a large extent the awareness of a cause, whatever its nature (social, environmental, educational, etc.), but the benefits arise from the actions of the individual to combat or support the cause.

According to the sociological approach, volunteering can be seen as a social phenomenon involving models and social relationships, interactions between individuals, groups and organizations, which is why it can involve the following benefits: improving interpersonal relationships, stimulating compassion for others and their problems , improving personal qualities based on interaction with other individuals (Hustinx et al., 2010).

Taking into account the psychological perspective, volunteering brings benefits such as: increased self-esteem; improving personal satisfaction; increasing the appreciation of the company; increasing the feeling of productivity and utility in society etc. (Hustinx et al., 2010).

In terms of volunteer activities, the benefits are not only on the part of the individual engaged in such activities, but also on the part of society. Among the benefits that society can have through such volunteer activities we mention: new availability in terms of training or education of groups of people; improving the quality of life; increasing the degree of social cohesion, etc.

2.1. Volunteering in Romania

Considering that the volunteer activities materialized in most countries after the end of the Second World War, it can be said that this did not happen in Romania, because from the end of the war until 1990 the dictatorial regime in our country it focused very much on the reconstruction of the country and implicitly on the production of goods, leaving individuals very little time to carry out other activities, such as volunteering. From this point of view, it can be considered that the incipient moment of volunteering in Romania is the year 1990.

In post-communist Romania, dictatorial doctrine persisted for a long time in collective memory and customs. Therefore, the values that volunteering implies hardly penetrated the behaviors and new habits of the Romanian society, which can be observed at the statistical level when in 2001, the percentage of volunteers from at least one association was only 8%, the percentage being largely made up of the young urban population modeled on the population of Western Europe (Corduban et al., 2014).

The first really important step in reducing the gap between Romania and Western Europe came late, only in 2014 when the Romanian Senate voted the law on regulating volunteer activities in Romania. The law regulates the framework for the participation of individuals in volunteer activities organized by other individuals or public organizations. At the same time, volunteering is considered an exponential factor for creating a competitive labor market, education, vocational training (Romanian Parliament, 2014).

In order to be able to carry out a quantitative research of the volunteer activities in Romania, the approach is a difficult one because there are no exact data on the persons who practice the volunteer activities and implicitly there are no institutions to deal with the registration of volunteers (Sana, 2016). An overview can be provided by the European Youth Report, which includes a survey on volunteer activities in European countries, including Romania.

According to the European Youth Report, in Romania (European Union, 2017):

- 17% of respondents participated in the last 12 volunteer activities
organized through clubs (sports, youth, leisure).
- 85% of respondents said they did not have the opportunity to volunteer internationally.
- 74% among the respondents considers the educational dimension of volunteering to be important and that young people should be encouraged in this direction.
- Only 15% of respondents believe that the European Union could promote itself
values through volunteer activities.

According to the National Resource Center for Volunteering of the Pro Vobis association in Romania, there are several traditional events that aim to reward good practices in the field of volunteering: National Volunteer Week (held annually in the third week of May); National Volunteer Gala and other local galas; International Volunteer Day (December 5); International Day of Volunteer Coordinators - November 5 (Pintea, 2019).

2.2. Good practices in volunteering
Due to the vast fields in which volunteering can be integrated, it is necessary to delimit it both at the legislative level but also at the level of organization and proper development of activities (bodies; programs; associations, etc.). Below will be presented some bodies that carry out various volunteer programs, based on certain target groups. At the same time, they can be considered as examples of good practice in terms of volunteering.

Pro Vobis

Pro Vobis is the first association in Romania to introduce, in 1997 with EU support through the Phare program, the concept and practices regarding the "Volunteer Center". It is also important to mention that this association has 25 volunteer centers. A volunteer center recruits and trains volunteers, informs them of volunteering opportunities; organizes training courses for volunteers; promotes the concept of volunteering and the principles of good practice in working with volunteers (Pintea, 2019).

The association also collaborates with NGOs, practitioners, public institutions, socially responsible companies. They carry out volunteer activities in areas such as education, volunteering in protected areas, child care, etc.

One of the most well-known projects is the Initiative Shelf. This project had the mission to diversify volunteering opportunities in public libraries in Romania, regardless of age (Pintea, 2019). This program aims, among other things, to increase people's awareness of the need and usefulness of involvement in volunteer activities. The program had the following results (Pintea, 2019):

- 16 beneficiary public libraries, but also 31 librarians trained in the Management of Volunteer and Volunteer programs;
- Carrying out 16 pilot volunteer programs in libraries over a period

for at least 6 months;

- Diversification of volunteer actions offered in the library, having as main

purpose actions to combat hate speech;

- Creating and promoting the concept of Library V - dynamic library, open to all ages and all social groups.

Within this program, as a result of the training period, the libraries involved develop and offer various courses (computer training for the elderly, personal development courses for young people, public speaking; time management, etc.).

Cactus Association - Academy of Economic Studies

The Academic Research Association in Tourism and Services CACTUS is a distinct structure of consultancy, studies, training, professional training, research and interdisciplinary design, organization of scientific and applied events, and the fields covered are multiple and we mention some such as: tourism, services, protection environment and nature, regional development, sustainable, etc.

Cactus Association is a non-governmental organization founded in 2008 by the Department of Tourism and Geography of the Faculty of Business and Tourism within the Bucharest Academy of Economic Studies. Starting with 2017, the Cactus Association has started various volunteer actions involving students and respectively seeks to bring benefits to the growing population.

These volunteer actions had as unit and target group the Directorate of Social Assistance and Child Protection Sector 4 Bucharest, with which the Association has a concluded agreement which provides mainly for educational and recreational activities for children and which targets the Day Center "Casa Sperantei "and" HarapAlb ".

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Within this center, 50 students are supported, who are in the preschool, primary or secondary school cycle and who come from families in difficulty, such as: single-parent families, families with a very low standard of living, etc.

The Cactus Association carried out a series of activities specifically oriented to the needs of the children in this unit, such as: homework help for children in middle school and high school in HarapAlbcenter, ecology workshop at the Casa Speranței Day Center, Creative Workshop floral, Game and personal development workshop.

Through homework help, Cactus volunteers offered meditations for various school subjects, as well as various drawing or guitar lessons. All these actions aimed to support the integration and increase the school performance of the children involved.

The ecology workshop aimed to instruct and teach children in a practical way how to protect the environment, what it means to be responsible for it, to distinguish different species of plants in protected areas. The purpose of these actions is to raise awareness of the impact of their activities on nature, the need for their active involvement in environmental protection and the opening of new perspectives on voluntary environmental activities.

The ECOTUR Tourism and Ecology Club

The ECOTUR Tourism and Ecology Club is a student association that operates within the Academy of Economic Studies in Bucharest. As the name suggests, the association is a professional one, having two fields of activity: ecology and tourism.

The association aims to engage students from the Academy of Economic Studies in Bucharest, but also from other universities. Also, the aim of the association is to inspire and train both volunteers and beneficiaries, a civic behavior.

The ECOTUR Tourism and Ecology Club has several projects, among which: ecoTUR for Paper, Earth Hour, Earth Day, Tourism Community, Ecological Responsibility in Prahova Schools. Next, we will detail two projects, namely Ecological Responsibility in Prahova Schools and ecoTUR for Paper.

The Ecological Responsibility Project in Prahova Schools, involves the club's volunteers to go to schools in rural and urban areas in Prahova County and to teach middle school and primary school students how to adopt an eco-civic behavior. This involves volunteers providing students with information about ecology, cooking healthy food with them, planting trees and flowers, and greening various green spaces. The purpose of this project is to raise awareness of the positive impact that people have on the environment, but especially to raise awareness of the negative impact and correct it through the practices involved in the project.

The ecoTUR paper project has the same goal, which is to raise awareness of the negative impact that cutting down trees has on the environment. This time, the target group is students, who are encouraged to recycle the paper they no longer need.

The volunteers of the association go to the student dormitories of the Academy of Economic Studies in Bucharest and collect the paper that the students no longer use, then send it to the companies that deal with recycling.

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3. Research methodology

The purpose of this paper is to determine the degree of involvement of young people but also the reasons that determine them to get involved in volunteer activities, taking into account the main causes for which they choose to fight but also the subsequent benfits they obtain. For data collection through the questionnaire, the target group is young people aged between 18 and 35 years. This is a pilot study. 76 respondents participated, and the research hypotheses are the following:

1. Less than 50% of respondents do not volunteer;
2. Over 60% of women in urban areas practice activities of volunteering;
3. Less than 60% of urban males are volunteer;
4. Less than 30% of all respondents from rural areas stated that they volunteered;
5. At least 50% of all respondents consider that the main reason why they chose to volunteer is to help their peers;
6. More than 80% of all respondents consider that they do not want to volunteer because they do not have enough free time;
7. Over 60% of undergraduate respondents are involved in activities volunteering.

We also tested the influence of social variables (background, gender and occupation) on the causes served by volunteer activities and on the reasons behind the practice of volunteer activities. For this we used the correlation ratio.

4. Results

The majority of respondents (71%) practiced volunteer activities, and 29% of respondents did not practice volunteer activities, so hypothesis 1 is refused. In the contemporary era, taking into account the fact that the Romanian economy is still in transition and that the era of speed also has negative consequences on people (stress), it is found that people still have a certain dose of interest in volunteering.

The structure of respondents by gender is as follows: 58 of the respondents are female and 18 are male. Also, 42 of the respondents are from urban areas. In order for hypothesis 2 to be validated, 25 of the 42 respondents must have volunteered. The hypothesis is valid, because 29 of the 42 respondents practiced volunteer activities, this means 69%. Also, 13 of the 18 male respondents are from urban areas. In order for hypothesis 3 to be validated, less than 8 respondents must have volunteered. The hypothesis is refuted, as 9 of the 13 respondents practiced volunteer activities, which means 69%.

The structure of the respondents according to the environment of origin is the following: 21 are from rural areas, and 55 are from urban areas. Hypothesis 4 is refuted, as 16 of the 21 rural respondents volunteered, which means 76%.

In order for hypothesis 5 to be validated, at least 38 of the 76 respondents must have chosen to help their peers as the main reason for practicing volunteer activities. The

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hypothesis is refuted, as 30 respondents chose among their motives the help of their peers, which means 39.47%.

In order to validate hypothesis 6, more than 18 of the 22 respondents who did not volunteer should invoke their free time as a reason that prevented them from carrying out such activities. The hypothesis is refuted, as only 7 of the 22 respondents chose free time as a reason that prevented them from volunteering, which means 32%.

In the structure of respondents by occupation, 32 of the 76 respondents are undergraduate students. In order for hypothesis 7 to be validated, more than 19 of the 32 respondents must have stated that they had volunteered. This hypothesis is validated, as 25 of the 32 undergraduate students stated that they practiced volunteer activities, which means 78%.

From a social point of view, the majority of respondents live in urban areas (72.4%), most respondents are between 18 and 25 years old (93.4%), most respondents are female (76.3%) and most of the respondents are undergraduate students (40.8%).

Starting from the premise that involvement in volunteer activities is not determined by economic factors, social factors were taken into account. In order to find out if the social factors influence the involvement of young people in volunteering activities, it was determined what is the connection between the reasons why the respondents practice volunteering activities and three social variables, namely the environment of origin, gender and occupation. It was also determined what is the connection between the causes that the respondents serve through volunteer activity and the same social variables. To determine the link between the variables mentioned above, the following references have been established:

- Independent variables: environment of origin, gender, occupation;
- Dependent variables: the reasons why the respondents practice volunteering activities, the causes that the respondents serve through the volunteering activities
- Calculation method: calculation of the correlation ratio (Multiple R) using the Regression function in EXCEL and testing its statistical significance using the FISHER test.

Based on previous references, the following results were obtained:

Table 1: Correlation ratio

Indicators	The environment of origin	Gender	Occupation	
Reasons for volunteering	0.64	0.62	0.53	**Multiple R**
Causes served through volunteer activities	0.73	0.74	0.62	

Source: made by the authors

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Observation: in the analysis was used only the main reason why the respondents carry out volunteer activities (personal development).

Multiple R = 0.64 is statistically significant because Fcalculated (11.11)> Fcritical (1.46)

Multiple R = 0.62 is statistically significant because Fcalculated (12.28)> Fcritical (1.46)

Multiple R = 0.53 is statistically significant because Fcalculated (0.98)> Fcritical (0.68)

Multiple R = 0.73 is statistically significant because Fcalculated (10.05)> Fcritical (1.46)

Multiple R = 0.74 is statistically significant because Fcalculated (11.11)> Fcritical (1.46)

Multiple R = 0.62 is statistically significant because Fcalculated (0.89)> Fcritical (0.68)

All correlation ratios are in the range [0.5; 0.75], which means that there is a medium intensity link between the independent variables and the dependent variables.Thus, it is found that social indicators are not the main indicators that create the impetus for volunteer activities among young people.

5. Proposals

1. The implementation in the school curriculum by the Ministry of Education of a discipline or the integration of some sub-themes of volunteering within an already existing discipline.
2. Starting with the high school cycle and ending with the higher one, volunteering should be included in the compulsory internships, offering students other reliable alternatives that can contribute to their human and social development.
3. Involvement of public institutions in actions to promote volunteering and the realization of public-private partnerships in order to carry out extensive volunteering campaigns in the fields of education and environment.

6. Conclusions

It is found that young people are not very well informed about what volunteering generally means, and especially about the benefits that come from volunteering. It is also found that young people put personal interests (personal development) first and not the causes for which the volunteer activity is carried out. This contradicts the definition of volunteering to some extent, but reinforces the premise that volunteering contributes to the development of young people. Volunteering is a way for young people to learn to communicate better with each other and with society as a whole, as the main competence acquired through volunteering is the ability to communicate. The online environment is the best way to promote volunteering, whereas most young people have heard of such activities through the online environment. It is also noted that student associations are a cornerstone in terms of volunteering, as most young people have volunteered in these associations. A particularly important aspect

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is that young people are aware of the problems of society, as most young people have said that the feeling that appears when they practice volunteering is the awareness of a problem. It also seems that one of the most important causes for young people to volunteer is the environment, and many young people believe that volunteering should be better promoted. It is found that most young people do not volunteer because they do not have free time, and if they had time to practice volunteer activities, they would be in the field of environment (ecology), and the main beneficiaries would be children. It is also found that over 50% of young people volunteer. Another important aspect is that the percentage of young people in urban areas who practice volunteering is equal (69%). Young people in rural areas are very interested in volunteering, as 76% of them have volunteered.

Also, in order to create and stimulate an ecological behavior, it is necessary to invest in ecological education from an early age, and this process should be continuous.

In other words, volunteering can close the gap on equal opportunities for one another, providing support and solutions for everyone and responding to increasingly diverse needs.

In conclusion, volunteering has many benefits, implications and involves various resources. It can be seen and understood as an engine with alternative fuels that can help society solve various problems, which politics and education can no longer cope with.

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EFFICIENCY AND TRANSPARENCY OF THE GOVERNANCE OF PUBLIC INSTITUTIONS

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Abstract: *In an entity, the efficiency of the use of governance systems is based on a set of principles. The main principles refer to: efficiency and transparency. The need to make citizens aware of public policy issues leads not only to the transparency of decisions taken at the administrative level, but also to the adoption of decisions in favor of the development of that community and thus, to increase public confidence in public entities. The existence of each individual is daily influenced by public services, their development directly affecting the standard living due to the degree of meeting certain needs recognized by the community as being of general interest and not available to private initiative, to ensure fundamental rights and freedoms. This paper defines the public services as a whole, generalities of public institutions as well as the efficiency and transparency concerns regarding the concept of governance, trying in the same way to answer the question "Efficiency and transparency, model of good governance of public institutions?" The present article is structured in three parts; the first part presents concise conclusions regarding public services as a whole, followed by the second part presenting the efficiency and transparency of governance, while the latter exposes the conclusions of this article.*

Keywords: *governance of public institutions; governance; public institutions; efficiency; transparency; public administration.*

JEL Classification: *H83; J18; J28.*

1. Public services as a whole

Public administration is, in a material sense, an activity of organizing the execution and concrete execution of the law, carried out through dispositional actions, which establish rules of conduct for third parties, in the form of legal acts, administrative operations, material deeds committed by the holders of public positions in the system of public administration bodies, and actions of a performance nature, carried out on the basis and in the execution of the law, in order to fulfill the general interest, by providing public services. In a formal sense, the public administration can be understood as a system of bodies, of institutions, comprising various administrative structures that carry out the activity of organizing the execution and concrete execution of the law.

Thus, Georges Burdeau appreciated that the implications of "the scientific and technical revolution amplify the prerogatives of the administration" (Burdeau, G., 1970, p.301). Another author, John Eull, considers that the function of the

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technocratic state, a plurivocal function, consists in ordering and administering (Eull J., 1992, p.61).

According to Eric Weil, two elements are specific to the modern state: the fact that the law is formal and universal, that it applies equally to all citizens, without exception, and that for deliberation and execution the government relies on the administration. Moreover, it is very clear that Weil states that the modern state could not exist without administration, but could not be pure administration (Weil E., 1994, p. 462).

Prof. Antonie Iorgovan stated that "Each notion involves the identification of dominant notes of its content, which logically order them according to the proximal rule, the specific difference, thus delimiting, in terms of abstract thinking, not only the boundaries of the phenomenon, the process it evokes, but its very essence" (Iorgovan, A., 2001, p.3).

Another author, Ioan Vida, shares the opinion that "administering is an executive activity, put under the sign of command or delegation of powers, and when this activity achieves its objectives using public power by derogating (deviating) from the rules of common law , it acquires the attributes of public administration "(Vida I., 1994, p. 11).

The purpose of public administration is to satisfy the public interest by ensuring the proper functioning of public services and by performing services to individuals. The fundamental goal is "to ensure the realization of the public interest expressed by the will of the sovereign people transposed into law" (Bălan E., 2008, p.35).

The public administration consists of: bodies of the executive branch (President, Government and ministries), local public administration authorities (County councils, local councils, mayors)

As an activity, we mention two components of public administration: executive - operative part (adoption of acts of the authority for the organization of the execution and the concrete execution of the law), provision of public services (all measures are taken for the proper functioning of public services and legal acts are concluded and certain technical-material operations are performed)

Public administration is active in all spheres of social life, having connections with many components of society.

2. Strategic planning in public management

Planning in public management can be a complex concept; an approach - in which we must describe the reality in terms of presence in the available resources and in the circumstances in which a vision of the future will be determined. The second approach, more creative and more practical, is to imagine the future according to our expectations and an attempt to adapt the current reality to the imagined state, that is the realization of the vision. In the first and second approach, the created vision of the future allows planning control in relation to the entire organization. Regarding the state as an organization, the essence of general planning that establishes tactical and operational plans - strategic plans, begins the management process, in which the basic objectives, programs or strategies are planned, to be

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implemented in the context of possible use of tangible and intangibles resources. It is related to both the preparation and the constant making of elaborate decisions (Taylor D.A., 2005, p.452). Thus, strategic planning in public management can be further identified as a systematic effort to produce basic decisions and actions that create and manage the organization. At the beginning of the process we need to set the boundaries of strategic planning by setting the scope of the methods and the techniques to be used. Next, we must assume that certain strategic planning needs will naturally change over time, which may lead to the need to fill the planning gap and the lack of competition strategy through ad hoc or systemic decisions to strengthen state capacity, of competing as a whole, in total (Brezoianu D., 1991, p.98). Planning can be called an anticipatory decision-making process, which sets out an expected arrangement of conditions, objectives and action measures in the future, recognizing the characteristics of the system in relation to which the actions were planned. The main goal of planning is to find an answer to the question of how the organization will achieve the previously set goals.

In decision-making practice, the decision-maker rarely uses rational decision-making models, because the problems are not only complex, but also difficult to quantify (Alexandru, I., 2006, p. 176). Derived from classical economics, the rationality of expectations in the context of a typical economic entity (homo economicus) is detached from reality. Decisions or decision-making can be reasonable and not rational are motivational (fight for satisfaction instead of optimization) and cognitive limitations. Therefore, models of the so-called limited rationality of the decision-making process have been developed: heuristic, behavioral, so-called double process (with a clear line of demarcation that combines decisive intuition and rational analysis, for example, in the theory cognitive continuum) (Dagenais, B, 2002, p.103). It seems that approaches that combine rationality and intuition in parallel with skills and abilities focused on conscious and unconscious thinking and conclusions are often used in managerial practice. In public management, as in commercial management, the decision maker must learn to accept the chaos that exists in the modern global economy. This means that the decisions made today and appropriate from today's perspective tomorrow can be completely different - both better and worse. (Kotler, P, 1993, p.34).

Given the communicative theory of planning together with the model of competitive values in public, we wonder if the administration is different from the imagination of those responsible for planning, in the public and private sectors in terms of the role of politics itself and conflicts of interest planning.

Does the private sector perceive political factors as having more influence on planning decisions?

At the same time, the literature recognizes that both political motives and competition in government undermine long-term goal planning. People responsible for planning in the private sector largely doubt the transparency of public sector decisions, where it is not enough to make a decision on information and the planning itself does not guarantee the correct and correct division of them, as well as public goods or maintaining the existing character of society (Hennessy, C; Hennessy, E., 1981, p.178).

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Regarding local government entities, strategic planning is "an awareness, systematic and future-oriented, of the process of constant preparation and decision-making on the level of future development of the local government entity and the level of satisfaction of the needs of the population and their coordination and integration have taken planning decisions with external (opportunities and threats in environments) and internal (weak and strong sides) recognition and the principles of sustainable development (Gosman, M., Koopmans, J.W., 2007, p .230).

3. Efficiency and transparency of governance of public institutions

In an entity, the efficiency of the use of corporate governance systems is based on the following references: shareholders must participate fully in the management of the entity through shareholders' meetings; shareholders must share in the entity's profit; corporate governance must provide full and true information about the Company in advance, including financial statements and economic indicators; harmonization and integration of the experience of the member countries of the organization, of the international financial and economic institutions in the global cooperation; increasing the private sector as a provider of capital, market and jobs; convergence of interests in domestic and international markets.

For the good organization and functioning of enterprises using corporate governance systems are considered the following: the overall management of the entire entity by accepting all internal components, which work together, and which will ultimately be integrated into management; implementation of risk management within the entity, of the financial management and internal control system, including internal audit (Demmke, C., 2004, pp. 25-92, 95-170).

One of the most popular public relations concepts is that of image. Wish image is used in public relations planning. The desired image is the image that the company's administration wants to promote inside and outside it. Its identification is the basis for formulating public relations objectives, their realism largely depending on the success of the entire public relations activity. Public relations could be defined as follows: "Public relations represent the management of communication based on the public interest" (Zémor, P. 1995, p.87).

The effective public relations manager must be in constant contact with the public of the organization, be able to differentiate at all times their communication needs, formulate and send messages according to the characteristics of each of them and monitor their reaction to receiving each between messages. The organizational image is a complex consisting of the history of the organization, its successes and financial stability, the quality of its offer, its reputation as an employer, social responsibility and research efforts. The organizational image is essential in the relations with the press, but it is very important in the relation with the financiers (be they investors, donors, members or international financial institutions). The field of public relations is very important at the level of public institutions because it offers them the possibility to communicate with the public. Also, through public relations can be transmitted information about the types of activities for the benefit of

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individuals and communities, provided by public institutions (Bovaird, T., Löffler E., 2003. pp.3-12).

The concept of decisional transparency represents the process developed by the public administration bodies in order to ensure the access of the citizens to the documents under the management of the state institutions as well as to the consultation of the citizens regarding the adoption of some regulations.

In other words, decisional transparency designates the set of tools by which the administration (institutions and authorities of the local public administration) is accountable to the citizens or taxpayers regarding the activity carried out in their service. As taxpayers, citizens have the right to be informed or consulted, as well as to participate in the decisions taken by the local and central public administration authorities, which they financially support through the fees and taxes they pay.

Transparency gives citizens the right to be consulted on the public issues of their community. Through it they can act both locally and nationally. Administrative transparency should not be seen as favoring citizens and disadvantaging administrative workers because it increases the workload.

On the contrary, the administration receives a lot of valuable and necessary information, free of charge and in person, for the draft normative act or the respective decision. It thus increases its capacity to take decisions and to adopt normative acts coherent and adapted to the needs, which will be more easily accepted and implemented.

Public authorities whose activity falls under the scope of transparency constantly adopt or draft normative acts and take decisions that influence the life or activity of people. Transparency allows citizens to comment on draft normative acts and to have their say on decisions that are taken by public authorities in public meetings (Transparency International Romania, 2006, pp. 26-27).

The public must be permanently informed about the activity of public authorities, both at the stage of evaluating the activity plans and at the time of adoption and implementation of decisions, providing them at all times with complete, objective and consistent information, of a financial nature or in connection with the mission and strategic planning of public entities. Transparency allows any person affected by an act of a public entity to know its basis. In their turn, the public entities receive from the superior entities feedback consisting in the detailed evaluation of their activity (Alistar, p. 12).

The European Constitution enshrines the principle of transparency of the procedures of the Union's institutions, bodies, offices and agencies, emphasizing a number of principles to ensure such transparency. This presupposes the obligation of the Union institutions to carry out their work as openly as possible, the public nature of the debates of the European Parliament and of the Council (it is for the first time for the latter when the meetings are public), when adopting a legislative proposal, the right citizens of the Union and legal persons established in a Member State or registered in a Member State to have access to documents of the institutions of the Union (Alistar, p. 11).

Therefore, the principle of transparency occupies a double place in the discourse of the government and in its procedural direction. On the one hand, the communication

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of political information is necessary to ensure the cognitive, legitimate and establishing functions of the procedure. Transparency must guide the behavior of the actors (leaders and citizens) and accept the approval of the criteria for what is considered to be a correct procedure – meaning the production of a correct, effective or efficient result, in accordance with the objectives assigned to it. The visibility of the institutions, their transparency, is a required condition for the establishment of the state of trust, which finally unites a necessary distrust and a hope of trust. On the other hand, the governess presents itself as a factor of transparency, in fact, the decision-making procedures established by government themselves represent a choice and interpretation of meaning and organize the way in which actors interact and thus organize their intersubjective communication. The procedure itself participates in the circulation of political information, insofar as it establishes places of interaction between actors and must generate a situation of sufficient trust for them to agree, to lay the groundwork and therefore to communicate their experiences, expectations and interests. If the principle of transparency thus retains a dimension of political publicity understood as an information visibility, it also covers a procedural dimension. Exchange, understanding, comparison, evaluation and deliberation between actors themselves contribute to the process of visibility and understanding of political information. The principle of modern publicity offers the citizen a place of critical spectator, the governing discourse including him in the decision-making process itself, without being consulted. Transparency is no longer the instrument of the distinction between state and society, but the means to reconnect them to each other (Corodeanu D, 2008, p.43).

4. Conclusion

Regarding the question at the beginning of this article "Efficiency and transparency, model of good governance of public institutions?" we realize that they should be the basis of all current or future decisions. The lack of transparency, together with other deficiencies of the regulatory activity, leads to the low confidence of the society in the strength and importance of the normative acts. The absence of consultations means that the rules are frequently amended or replaced, which causes a marked legislative instability and does not provide the necessary security to the legal framework.

The actual application of the principle of transparency (which also covers procedures and guarantees regarding both access to information and participation in the decision-making process) would lead to greater confidence in laws and regulations, since they were adopted in consultation with interested parts.

One of the most important causes of the occurrence and maintenance of the phenomenon of corruption is the lack of transparency of the administrative system. As such, on the one hand, there is a need to complete the legislative framework on public administration transparency, and, on the other hand, to continue implementing the existing provisions in order to achieve certain standards of transparency and efficiency in the public sector.

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INNOVATIVE ENTERPRISES IN SERBIA AND ROMANIA

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Abstract: *The well-being of the population depends on the ability of innovative enterprises to adapt to the needs of people in perpetual change. Workers capable of innovation are becoming more and more sought after on the labor markets, being the pillars of the innovative ensemble in national enterprises. In this article we have made a comparative analysis of existing innovative enterprises in Serbia and Romania, during the years 2010-2016. The research is based on the observation and analysis of data provided by the statistical offices of both countries. The importance of this analysis is given by the establishment of the existing discrepancies and similarities between the innovative enterprises from Serbia and Romania, as well as the identification of the existing deficiencies within the development of these activities.The companies on the Romanian territory were in a continuous decreasing trend, highlighting the low investments made in the field of innovation, as well as a poor opening to foreign markets. At the opposite pole, Serbia, which despite not integrating into the European Union, shows an increasing trend of innovative enterprises. However, there are still areas for improvement, with the aim of synchronizing innovative enterprises in the two countries with enterprises in countries around the world, recognized for their innovative activities. The innovative centers in the two countries are located in the Beogradski region of Serbia and the Bucharest-Ilfov region of Romania.*

Keywords: *innovation; enterprises; Serbia; Romania.*

JEL Classification: *O14; O31; O32.*

1. Introduction

Although there have been numerous attempts to define the term innovation and the factors that influence it, research continues for a better understanding of this concept. According to Oxford Business English Dictionary (2005), innovation is the ability to develop things/processes that have a certain degree of novelty. Another definition attributed to innovation is "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations" (OECD, 2005).Robert Stackowiak (2019) defines four types of entrepreneurial culture that influence the way enterprises operate: the culture that focuses on the production process, the collaborative culture, the culture oriented towards finding solutions and the culture that seeks to produce innovation. John Hopkins (2013), brings into question the major difference between innovation and creativity. The first allows repeatability in terms of novelty, making it accessible

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following the path of the author of the innovation. While, creativity does not offer the same permissibility to repeat, not even to the author of the original work. According to the same author, a creative process offers the possibility of innovation, but the chances of innovation influencing creativity are lower. However, in the absence of the progress provided by innovative activities, society would stagnate, preventing economic growth and development. Innovative enterprises are an important source for innovation. The changes that characterize contemporary society focus on the perishability of environmental resources, the ability to develop new renewable energy sources that support daily life, low living standards and lack of funds to support innovations at full capacity. That is why the importance of people capable of innovation has become stringent. They acquired the power they once had, those who had physical capital.

2. Comparative analysis of innovative enterprises

According to National Institute of Statistics of Romania (2018), innovative enterprises are those entities that have focused on developing products characterized by novelty and improvement. The element of innovation also appears in the production, organizational and advertising process."The term covers all types of innovators, product, process, organizational or marketing methods innovators, as well as enterprises with unfinished innovations or abandoned and refers to active enterprises" (National Institute of Statistics, Romania, 2018). Numerous studies conducted in transition countries show that process and product innovation, combined with other factors such as: exports, investment in human capital of workers through various training programs support the development of small and medium enterprises (Chit, 2018) (Veugelers R. ,Schweiger H., 2016) (Boermans M.A., Roelfsema H., 2015), but also how political power in autocratic regimes can undermine the implementation of innovative activities (Wegner, 2019). In Serbia, the criteria for hiring innovative companies are similar to those in Romania. The undertaken research was carried out by observing and analyzing the data provided by the National Statistics Offices of both countries. Innovation reports are drawn up every two years, as can be seen in the tables.

According to statistics from 2010-2018, the total number of innovative enterprises in Serbia has been growing, highlighting the importance given to the innovative sector in the economy as a whole. In the period 2010-2012, the gap between small and large enterprises was 3347 enterprises, in favor of small ones. Although the number of large enterprises was considerably lower than that of small enterprises, the share of innovative activities was 66.2% in those large enterprises, compared to 40.8% in small enterprises.Also, manufacturing and service enterprises recorded relatively large shares of innovative activities, of 48.7% and 42.4%, respectively (Statistical Office of the Republic of Serbia, 2013).

A survey conducted during the years 2012-2014, in 3587 companies of different sizes in Serbia, reveals that the biggest obstacles perceived by companies in carrying out innovative activities are: lack of own financial resources, difficulties in obtaining rewards from the state for innovation, in the form of grants or donations,

difficulties in accessing loans from banks or attracting private capital (Statistical Office of the Republic of Serbia, 2010-2019).

In Table 1, we can see that the number of innovative enterprises in Serbia reached 9546 in the period 2016-2018. Again, despite the small number of large entities, the participation of these innovative enterprises was 69,10%, compared to 47.65% of small enterprises. The share of innovative activities carried out by enterprises in the manufacturing and industrial sectors was 56.64% and 47.90%, respectively. Throughout the analysis period, the Beogradski region has established itself with a majority of innovative products/services, as well as in process innovations. The turnover structure, obtained by innovative enterprises in 2016-2018, was 86.3% of products without changes or moderately changed, 3.6% of products/services on the market for the first time and 10.1% from products/services that have a novelty character in the enterprise. This pattern can be observed throughout the analysis period (Statistical Office of the Republic of Serbia, 2010-2019).

Table 1: Enterprises by innovations, activities and size classes, 2010-2018, Serbia

	Innovators			
	2010-2012	2012-2014	2014-2016	2016-2018
Total	5280	6739	6994	9546
Small enterprises	3691	5182	5417	7566
Medium enterprises	1245	1187	1228	1573
Large enterprises	344	370	349	407
Manufacturing enterprises	2007	1977	2232	2854
Service enterprises	3273	4762	4762	6692

Source: Statistical Office of the Republic of Serbia (2010-2019)

We believe that openness to overseas markets should be encouraged, with the aim of attracting funds by selling larger quantities of innovative products, as well as large investments in the advertising of national culture and products.

Table 2: Enterprises by innovations, activities and size classes, 2010-2016, Romania

	Innovators		
	2010-2012	2012-2014	2014-2016
Total	5968	3645	2925
Small enterprises	4089	2527	2059
Medium enterprises	1400	786	643
Large enterprises	479	332	223
Industry	3415	1843	1493
Service enterprises	2553	1802	1432

Source: National Institute of Statistics, Romania (2018)

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Tables 1 and 2 illustrate that during the years 2010-2012, 5280 innovative enterprises were registered in Serbia, and 5968 carried out innovation activities in Romania. The following years, 2012-2014, in Serbia the trend continues to increase, but in Romania there is a drastic reduction in the number of innovative enterprises, from 5968, as they were registered in the previous period, to 3645 entities (Statistical Office of the Republic of Serbia, 2015; Statistical Office of the Republic of Serbia, 2010-2019).

Unlike Serbia, where the manufacturing sector has the majority taking into account the criterion of the number of innovative enterprises, in Romania, the industrial sector has the majority. However, in Romania, during the years 2014-2016, the trend of innovative enterprises is decreasing reaching 2925 entities (National Institute of Statistics, Romania, 2018; Statistical Office of the Republic of Serbia, 2010-2019).

We consider that the differences observed between the two countries are determined by the national specificity, but also by the financial resources they benefit from. In Romania, the industrial sector has been encouraged since the communist period, continuing to be developed in the next period. This sector has undergone a number of changes, caused by the privatization process of publicly owned enterprises. In terms of financial resources, in Serbia, the period 2010-2016, the gross domestic product per capita was between 420659 RSD (EUR 4082) registered in 2010 and 640558 RSD(EUR 5203) at the end of the period considered, in 2016. We observe a significant increase in gross domestic product per capita in the Republic of Serbia (Statistical Office of the Republic of Serbia, 2010-2019). In Romania, the gross domestic product per capita was 26368.7 lei (6154 EUR), in 2010 and 38690.7 lei (8520 EUR).In parentheses, the gross domestic products expressed in euro are determined at the exchange rate of the periods mentioned (National Institute of Statistics, Romania, 2015-2017).
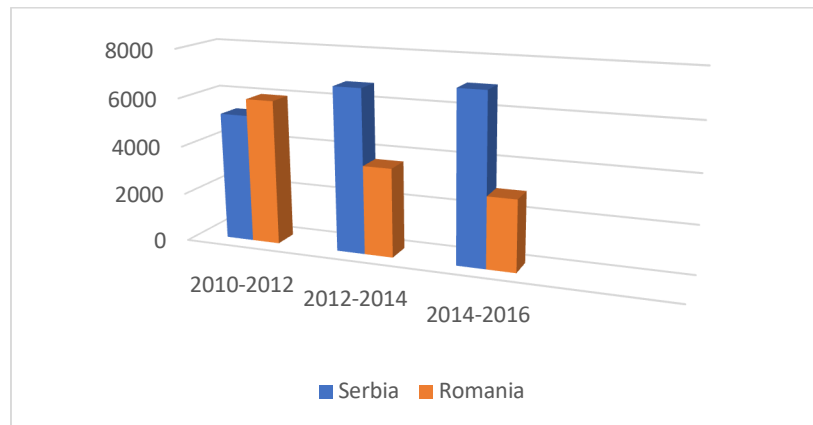
Figure 1: Comparative analysis of innovative enterprises, Serbia and Romania, 2010-2016
Source: Statistical Office of the Republic of Serbia (2010-2019), National Institute of Statistics, Romania (2018)

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As we can see in figure 1, on the Romanian territory, the number of small enterprises was 4089, during the years 2010-2012, registering a decrease in the period 2012-2014, the gap being 1562. The following years, 2014-2016, there is another decrease, up to the value of 2059 innovative enterprises. The same trend is followed by medium-sized and large enterprises (Statistical Office of the Republic of Serbia, 2015).

Table 3: Share of types of innovations by territory, 2010-2012 (%)

Territory	Innovative enterprises				
	Product/service innovations	Process innovations	Abandoned innovations or on-going innovations	Organizational innovations	Marketing innovations
REPUBLIC OF SERBIA	21,0	19,1	7,9	31,4	29,7
SRBIJA-SEVER	20,3	19,3	7,7	32,4	30,6
Beogradski region	21,5	20,9	7,95	35,3	32,6
Region Vojvodine	18,7	17,0	7,38	28,5	27,8
SRBIJA-JUG	22,2	18,7	8,14	29,6	28,1
Region Sumadije i Zapadane Srbije	23,4	18,7	7,93	30,6	27,9
Region Juzne i Istocne Srbije	20,3	18,7	8,49	28,1	28,4

Source: Statistical Office of the Republic of Serbia (2013)

In the period 2014-2016, the total share of enterprises carrying out innovation activities registered a decreasing trend by 2.6%. Most innovations are registered in the information services sector, 25.1% and in the pharmaceutical sector 24,2% (Statistical Office of the Republic of Serbia, 2017).Unlike Serbia, where the administrative and manufacturing sectors occupy the majority share of 32.2% and

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29.3%, respectively, in the same period (Statistical Office of the Republic of Serbia, 2015). The situation of innovative enterprises in Romania, during the years 2016-2018, was not subject to analysis due to lack of data.

We believe that large innovative enterprises have seen a significant decline due to: low number of collaborations with other entities outside the country, low investment in various information technologies or state-of-the-art machines that can supply labor and increase productivity, as well as poor access to European funds.

Table 4: Share of types of innovations by territory, 2012-2014 (%)

Territory	Innovative enterprises				
	Product/service innovations	**Process innovations**	**Abandoned innovations or on-going innovations**	**Organizational innovations**	**Marketing innovations**
REPUBLIC OF SERBIA	20,4	20,2	10,9	24,9	23,8
SRBIJA-SEVER	20,7	19,5	10,6	25,0	22,9
Beogradski region	21,2	20.5	10,9	26,5	24,4
Region Vojvodine	19,8	18,0	10,2	22,5	20,4
SRBIJA-JUG	19,9	21,6	11,5	24,7	25,8
Region Sumadije i Zapadane Srbije	20,3	22,4	11,4	24,2	25,1
Region Juzne i Istocne Srbije	19,2	20,3	11,8	25,4	26,9

Source: Statistical Office of the Republic of Serbia (2015)

Given the territorial criterion, table 3 illustrates that in the period 2010-2012, organizational and marketing innovations were the majority in all regions of the Republic of Serbia. Serbia is divided in regions of three layers. The level 1 statistical regions are Srbija-Sever and Srbija-Jug. The other regions mentioned in the table

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are considered level 2 regions (European Commission, 2018). The largest share of organizational innovations, 35.3%, was registered in the level 2 region, Beogradski, recognized as the center of innovation in the country. A close share of organizational innovations, 32.4%, is registered in the level 1 region, Srbija-Sever (Statistical Office of the Republic of Serbia, 2013).

During the same period, 2010-2012, marketing innovations have the highest shares in the same two regions mentioned above, 32.6% region 2 Beogradski and 30.6% Srbija-Sever respectively. Manufacturing-type enterprises have achieved all types of innovations in a higher share than those specialized in services. Just under 50% of large enterprises have implemented all categories of innovations (Statistical Office of the Republic of Serbia, 2013).

The following years, 2012-2014, the trend is similar, as can be seen in Table 4. Again, organizational and marketing innovations occupy the majority share. Region 2 Beogradski again occupies the first position, with a share of 26.5% of organizational innovations. In terms of marketing innovations, the secondary level region, Juzne i Istocne Srbije, obtains the highest share of 26,9%, ahead of the Beogradski region (Statistical Office of the Republic of Serbia, 2015).

We assume that the importance given to organizational and marketing innovations is due to the pursuit of objectives regarding the development of skills that employees have, important for generating innovation and increasing profits for new investments, team coordination, bringing a new breath to organizational culture can motivate employees to continue learning throughout life. Marketing innovations are a must to facilitate customer interactions, the rapid distribution of information about new products, services they can benefit from, and openness to new cultures, eager to know the specifics of the activities of innovative enterprises in Serbia.

Table 5 shows that in the period 2014-2016, innovative enterprises in Region 1 Srbija-Sever focused mainly on product/service innovations and organizational innovations, while innovative enterprises in Region 2, Srbija-Jug focused on product/service and process innovations. Thus, in the Sumadije i Zapadane Srbije secondary region, the highest share of 28.4% of product/service innovations was registered, and the majority share of organizational innovations was 25% in the Beogradski secondary region. Process innovations gained the majority share, of 25%, in the secondary region Sumadije i Zapadane Srbije. The lowest share of process innovations, 17.4%, was recorded in the secondary region of Vojvodina. In terms of product and service innovations, the lowest share of 25.1% was recorded in the same region mentioned above. This trend is maintained throughout the period under analysis. The Vojvodina region can be considered the least innovative region of Serbia, due to the fact that it has the lowest shares in all types of innovations (product / service, process, organizational and marketing innovations). It also gets the lowest shares in abandoned or ongoing innovations (Statistical Office of the Republic of Serbia, 2018).

The region on the Romanian territory, considered to be the most innovative, is the Bucharest-Ilfov Region. This aspect can be observed in table 6. In the period 2010-2012, in the Bucharest-Ilfov region there were 1186 innovative enterprises. The next period, 2012-2014, the trend is decreasing, reaching a value of 1129 units (Statistical

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Office of the Republic of Serbia, 2015).During the entire analyzed period, the devastating effects of the economic crisis that appeared in 2008 in the world are observed, through the continuous decrease of the number of innovative enterprises.

Table 5: Share of types of innovations by territory, 2014-2016 (%)

Territory	Innovative enterprises				
	Product/service innovations	Process innovations	Abandoned innovations or on-going innovations	Organizational innovations	Marketing innovations
REPUBLIC OF SERBIA	26,9	21,0	14,3	24,2	22,3
SRBIJA-SEVER	26,4	19,7	14,9	24,9	21,7
Beogradski region	27,2	21,0	16,1	25,0	22,0
Region Vojvodine	25,1	17,4	12,8	24,9	21,3
SRBIJA-JUG	28,0	24,2	13,1	22,6	23,4
Region Sumadije i Zapadane Srbije	28,4	25,0	13,6	22,7	25,0
Region Juzne i Istocne Srbije	27,4	22,8	12,3	22,3	20,9

Source: Statistical Office of the Republic of Serbia (2018)

In the period 2014-2016, a value of 714 innovative enterprises is reached, the gap being 415 innovative entities (Statistical Office of the Republic of Serbia, 2015).The Bucharest-Ilfov region is considered the most innovative, because the capital Bucharest offers various opportunities to find well-paid jobs. Most investors choose this region, precisely for the fast pace of development. Innovations are less common in the South-West Oltenia Region (Statistical Office of the Republic of Serbia, 2017).

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Table 6: Innovative enterprises macro-regions 1 and 2, development regions, Romania, period 2010-2016

Macro-regions and development regions	2010-2012	2012-2014	2014-2016
Macro-region 1	1431	864	872
Northwest Region	593	401	592
Central Region	838	463	280
Macro-region 2	2082	1004	932
Northeast region	974	444	424
Southeast region	1108	560	508
Macro-region 3	1706	1482	846
South Muntenia region	520	353	132
Bucharest-Ilfov region	1186	1129	714
Macro-region 4	749	295	275
South-West Oltenia Region	365	120	57
West Region	384	175	218

Source: National Institute of Statistics, Romania (2018)

Innovative companies in Romania focused on selling products locally and regionally.31.2% of them confirmed that they traded products in other foreign markets (National Institute of Statistics, Romania, 2018). A survey of innovative enterprises conducted in Serbia in 2012-2014 found that 43.2% of enterprises focused on product and process innovations, and 41.2% of enterprises with organizational and marketing innovations, respectively traded products in local and regional markets. "The share of innovators versus that of non-innovators on the market of EU and EFTA countries was by 50% higher and on the markets of other countries was even over 50%." However, the same study shows that 63.2% of the funds of innovative enterprises in Serbia at that time were received from the state. Due to the fact that Serbia is not yet a member of the European Union, there is a shortage of funds received from the European institutions. Only 11.4% of financial support came from the EU and 2.8% from the EU7 (Statistical Office of the Republic of Serbia, 2015).

Serbia's accession to the European Union can also reduce the costs of foreign trade by exempting certain taxes.

3. Conclusion

Innovative enterprises are an important pillar of economic development, implicitly of scientific and technological progress. Following the analysis of innovative enterprises in Serbia and Romania, several conclusions can be drawn. In both countries there is a need for greater openness to foreign trade in innovative goods and services, which can add to foreign markets and at the same time fund new investments. Serbia's accession to the European Union would improve the rate of attracting European funds. They can be used mainly for the implementation of innovations. Trade between the two countries can also be intensified, given the

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advantage of territorial proximity. Innovative enterprises must seek, in addition to reducing costs, the exchange of experience and equipping workers with the necessary skills to enable them to undertake the innovative process.

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INITIAL AND CONTINUING ADULT EDUCATION, A REQUIREMENT FOR ECONOMIC GROWTH

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Abstract: *School dropout is a global problem because economic and social development can be achieved only if it is sustained by people with a solid education. Lately, many young people aged between 18-24 years end up choosing a university specialization without knowing clearly what their professional expectations are for the future. At the European and national level, measures are constantly being taken to prevent university dropout. Although the average number of students dropping out between 18-24 years from 2005 to 2019 show a tendency to decrease, we can still see the lack of trust from young people in educational programs. In 27 of the studied countries, the number of men leaving the university programmes is higher than that of women. The increasing presence of women in university programs is possible due to the opportunities to combine successfully, family, professional and university life. Efforts to encourage lifelong learning are significant, in addition to national institutions and the European Council, organizations such as the European Association for Adult Education; the United Nations Educational, Scientific and Cultural Organization (UNESCO); International Education; the Global Partnership for Education (GPE), and the United Nations Children's Fund (UNICEF) have joined forces with a well-defined agenda. The average number of adults participating in the learning process aged between 25-64 years in 28 European countries from 2005 to 2019 grow with 2.79%. The highest values are recorded in Denmark, Sweden, Finland, and the United Kingdom because education for them is a landmark. Countries such as Romania, Bulgaria, Greece, Slovakia and Croatia need to review their educational policies because the low values show a lack of trust in the system. The confidence of Austrian adults in the quality of university education is demonstrated by the high number of participants. With a rich educational history nowadays, Italy is struggling to engage adults in the educational process. Although 2019 has been beneficial for lifelong learning, we must not forget that it is an ongoing process. European countries want that in the XXI century adult education became an integral part of people's lives.*

Keywords: *school dropout; knowledge society; higher education; lifelong learning.*

JEL Classification: *I23; I25.*

1. Introduction

Because education has the power to transform people's lives, the European Council promotes lifelong learning. The first large-scale European initiative was the Lisbon Strategy, adopted on 23-24 March 2000 and renewed in Brussels on

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22-23 March 2005. The Strategy objectives were designed to make the European Union the most competitive and dynamic knowledge-based economy. In the three cycles of implementation, it was understood that human preparation is a strong asset, so European countries every day trying to increase the general level of education and reduce dropout rates. (Rodriguez et al., 2010, p.11) Efforts have continued through the Europe 2020 Strategy, which proposes that 40% of people aged between 30-34 by 2020 have at least a bachelor's degree. (Europe 2020, p.1). Although education is constantly on the agenda of The European Commission, the success of national initiatives is limited, due to the lack of a complex platform for good practices. Lately, European countries have been relying on an economy of professionals with a solid education. So, Education is a long-term and advantageous investment that slowly but surely controls the future of nations. Despite the Bologna system adopted by European universities, in the last few years, university education has been increasingly criticized for not responding effectively to the needs of the labour market. (Stiburek, 2007, p.p. 44 - 45)

2. Literature review

Economists such as Adam Smith, John S. Mill, Alfred Marshall, George J. Stigler, and Gary Becker proved the link between a national level of development and education. Friedrich List was convinced that national wealth is the result of investment in education. Irving Fisher, in his studies, showed that education is an investment that has the capability to influence future income levels. Lester C. Thurow was firmly convinced that investment in education is long-lasting. (Badea, 2012, pp.123 - 125) F. H. Harbison and C. A. Myers in their study developed a system of indicators on human capital, built to highlight the importance of secondary and tertiary education in economic development. (Harbison, 1964, p.9) Published in 2015, the HEDOCE study initiated by The European Commission, conducted by the Centre for Higher Education Policy Studies (CHEPS) in the Netherlands, and the Nordic Institute for Studies in Innovation, Research and Education (NIFU) in Norway offers a large-scale comparative study of dropout policies. (Vossensteyn, 2015)
There is a relevant number of researches concerning University drop-out in European countries: in Germany - Georg W., Heublein U., in the United Kingdom - Yorke M., Longden B., in Italy – Belloc F., Maruotti A., Petrella L., in Spain - Lassibille G., Navarro G., in France - Gury N., and in Belgium - Ortiz Arias E., Dehon C.. (Zając, 2019, p. 2) Severiens S. and Dam ten G. in their research tried to explain gender differences in higher education programs. (Severiens, 2012)

3. Dropping out of university study between 18–24 years

In the last 14 years, despite the efforts of the European Council and the Ministry of National Education of the 28 analyzed countries, the much-desired knowledge society is facing the loss of confidence from the population. Dropping out of the educational process often leads to social exclusion and marginalization. The transition from the first to the second year of study is a crucial step.

The most common causes indicated by those who drop out of university study between 18-24 years are the wrong choice of specialization, financial problems related to participation in higher education, family problems, and health problems. (Andreu, 2008, p.101) In the period 2005 (14.41%) - 2019 (9.01%) we can observe a decrease of 5.4%. In the context of a continuous process, this decrease is an important achievement. As we see in figure 1, the decrease from 2005 to 2019 is gradual.

France in part with the help of the Plan to Successfully Obtain a Bachelor degree, between 2005 (12.5%) - 2019 (8.2%) manages to decrease the number of student dropout. Portugal from 2005 (38.3%) to 2019 (10.6%) with a decrease of 27.7%, preferred to create short degree programs, which allow the student to later complete their studies to a Bachelor degree program validating the studied courses. Then students can make more informed decisions about future studies. The same policy was applied in the Netherlands, where the percentage of 14,3 in 2005 dropped to 7,5% in 2019. The situation in Austria is balanced 2005 (9-3%) - 2010 (8.3%) - 2015 (7.3%) - 2018 (7.3%), to which contributed the introductory orientation phase offered to students before enrolling in a bachelor's degree program. (Vossensteyn, 2015, p.9) Although Spain has the highest dropout rate, retention programs showed utility in 2019 with a percentage of 17.3, which is 7.49% lower than the average percentage between 2005-2019. Malta managed to reduce the result from 2005 (33%) by 2019 to 17.2%. Romania since 2005 (19.6%) has tried to reduce methodically the abandonment as reflected in numbers: 2010 (19.3%) - 2015 (19.1%) - 2019 (15.3%). Over the years, Italy tries to find a balance between national policies, institutional structures, teaching and learning, curriculum design and student background. This was rewarded by a decrease from 2005 (22.1%) to 2019 (13.5%). For Bulgaria, the most beneficial period was between 2010 (12.6%) - 2013 (12.5%). The flexibility of educational programs between 2007 (12.9%) - 2010 (11.5%) in Denmark did not help to reduce the number of dropouts below 10% proposed by the Danish Ministry of Higher Education and Science. Values like 2007 (16.6%), 2008 (16.9%), 2009 (15.7%) in Estonia can be attributed to the fact that 61% of students work and this is harming their academic progress. (Beerkens, 2011, p.682) Although the United

Kingdom attaches great importance to the prevention of university dropouts through several facilities such as pastoral support, counselling, budget planning, health services, study skills development and career guidance, it has failed to reduce significantly dropout rates: 2005 (11.5%) - 2010 (14.8%) - 2015 (10.8%) - 2019 (10.9%). V4 countries or countries from the Visegrad region (Hungary 2005 (12.5%) - 2019 (11.8%), Poland 2005 (5.2%) - 2019 (5.3%), Czech Republic 2005 (6.2%) - 2019 (6.5%) and Slovakia) 2005 (6.3%) - 2019 (8.3%) face similar problems: extensive amounts of public funds spent on financing university studies not leading to graduation and an increasing number of study extension. (Stiburek, 2007, p. 46)

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Latvia managed to reduce the dropout rate with 6.7% from 2005 (15.4%) to 2019 (8.7%). Cyprus, thanks to effective collaboration between Greek Cypriot and Turkish Cypriot communities, who are responsible for their educational problems, manages to gradually reduce abandonment 2005 (18.2%) - 2010 (12.7%) - 2013 (9.1%) - 2018 (7.8%). Between 2005 (13.3%) - 2009 (14.2%) Greece failed to prevent the increase of dropout, but starting with 2010 (13.5%) begins a favourable period so in 2019 the number of those who leave without a certificate reaches 4.1%. As we can see in figure 2 Croatia has the lowest average percent: 4.1%.
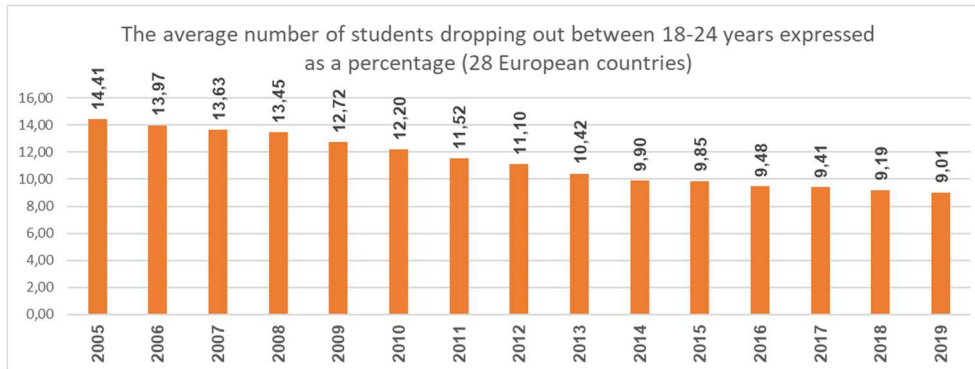
Figure 1: The average number of students dropping out between 18-24 years expressed as a percentage (28 European countries)
Source: created by the author, based on information collected from Eurostat
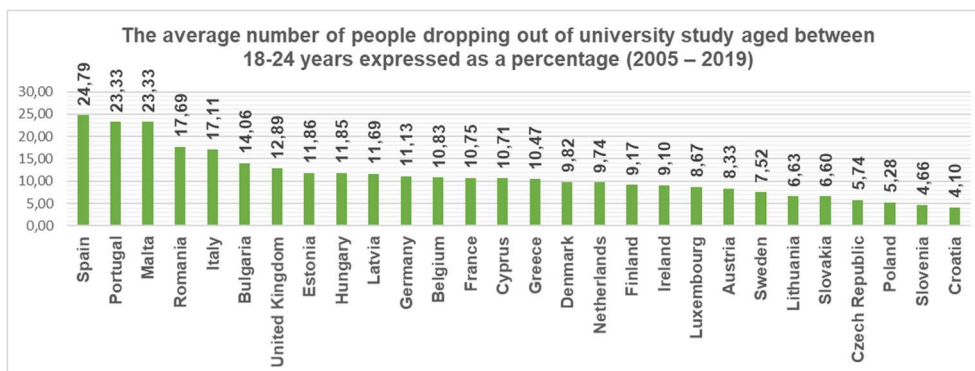
Figure 2: The average number of people dropping out of university study aged between 18-24 years expressed as a percentage in 28 countries (2005 – 2019)
Source: created by the author, based on information collected from Eurostat

Men and women dropping out of university study aged between 18-24 years
In the time of an economic decline, people with a low level of education are more affected than those with higher education. Women see in University studies the way to increase their chances of getting a job where they earn as much as men. We know very well that in many European countries men for the same work get more money than women. Women work harder and more consistently, have better time management and find academic goals very important. (Severiens, 2012, p.455) The percentage of women who leave the educational process over the years shows a slight variation: 2005 (11.93%) - 2010 (10.14%) - 2015 (8.33%) - 2019 (7.55%). In fourteen-year it's a moderate but sure decrease of 4.37%. In 27 countries the average number of female dropout is lower than that of men.

The percentage of men leaving the learning process shows a declining trend: 2005 (16.9%) - 2010 (14.23%) - 2015 (11.31%) - 2019 (10.43%). It takes place a decrease of 6.47% in fourteen years. The largest differences are recorded in Cyprus (8.17%), Portugal (9.67%) and Spain (9.71%), and the lowest on the Czech Republic (0.36%), Romania (0.61%) and Slovakia (0.63%). Only in Bulgaria, the number of women dropout is on average 0.41% higher than the number of men, as we can see in figure 3.
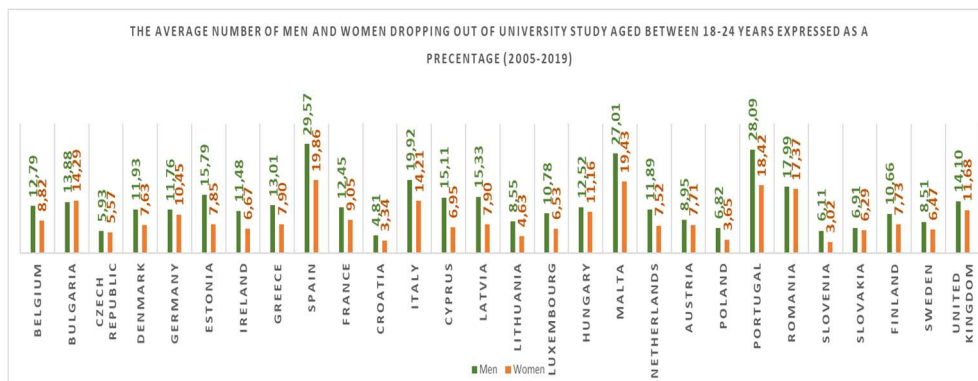
Figure 3: The average number of men and women dropping out of university study aged between 18-24 years expressed as a percentage in 28 European countries between 2005-2019
Source: created by the author, based on information collected from Eurostat

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4. Adults aged between 25 - 64 years participating in the learning process in 28 European countries

Efforts to encourage lifelong learning are significant. In addition to national institutions and the European Council, organizations such as the European Association for Adult Education, UNESCO, International Education, the Global Partnership for Education (GPE), and UNICEF have joined forces with a well-defined agenda. The success of these efforts is reflected in the growing number of adults trained in educational programs, as we can see in figure 4.
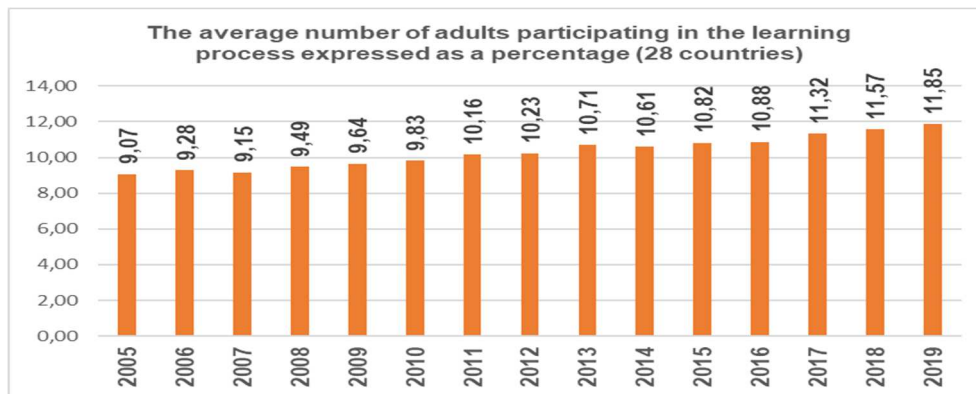
Figure 4: The average number of adults participating in the learning process aged between 25-64 years expressed as a percentage (28 European countries)
Source: created by the author, based on information collected from Eurostat

In Belgium, the highest values are recorded between 2014 (7.4%) - 2018 (8.5%), which is due to cohesion among the educational system of the Flemish community ("M-decree"), French community ("Pacte pour un enseignement d'excellence"), and German-speaking community. (OECD,2017, p.4) In Bulgaria, for low values between 2006 (1.6%) - 2011 (1.6%) can be blamed the insufficient financial and legislative support from the Government. Public spending on education as a percentage of GDP is steadily declining 4.1% in 2014 and reaching 3% in 2019. For the Czech Republic, the best year was 2011 (11.6%), after which there is a steady decline, despite the well-defined objectives there was a problem between theory and practice. The percentage for 2019 is 8.1. Denmark manages to reach the highest values, the best year being 2010 (32.7%), thanks to the efforts of the Danish Adult Education Association and the funding scheme that allocates ⅓ of capital for adult education. With the largest economy in Europe, Germany has an average of 8% because lifelong learning is supported by the governmental initiative named, National Strategy for Continuing Education. (EAEA, 2019, p.28) Estonia, in order to promote development, adopts the Lifelong Learning Strategy, which provides material support to those aged 25-64 who wish to participate in educational programs. Most participants were registered between 2015 (12.4%) - 2019 (20.2%).

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The participation in Ireland between 2005 (7.4%) - 2017 (9%) is under the sign of education for employability. Starting with 2018 the interest of the population for knowledge and social welfare increases as shown by the values: 2018 (12.5%), 2019 (12.6%). In Greece due to the lack of state strategies, adult education is becoming less and less a priority: 2017 (4.5%), 2018 (4.5%), 2019 (3.9%). In Spain, whose economy recently returned to health after many years of recession the situation is relatively stable with an average of 10.61%. France, the second-largest economy in Europe is part of initiatives such as Europe 2020, Education and Training 2020. Adult education is permanently on the agenda of the French Government, which is reflected in numbers: 2013 (17.8%) - 2019 (19.5%). Despite the Strategy on Education, Science, and Technology adopted in 2014, Croatia continues to face the challenge of being one of the lowest participation rates in adult education: 2014 (2.8%) - 2019 (3.5%) (EAEA,2019, p.18) Italy, the eighth-largest exporter in the world is experiencing steady growth due to the interest of the population for personal development through education, 2005 (5.8%) - 2019 (8.1%). For Cyprus, the most beneficial years were 2007 (8.7%), 2008 (8.8%), 2009 (8.3%), and 2010 (8.1%). Despite the efforts, Latvia fails to reach the value of 2005 (7.8%) by 2019 (7.4%). In Lithuania, thanks to the efforts of the authorities through the National Education Strategy 2013-2022 and the Lithuanian Association of Adult Education with the Baltic Summer School, participation is increasing, 2014 (5.1%), 2019 (7.8%). Education reforms has contributed to the steady growth of values in Luxembourg: 2005 (8.5%) - 2012 (14.2%) - 2019 (19.1%). In Hungary, the best year was 2015 (7.1%), and the most negative 2012 (2.9%). For the United Kingdom, the best years were 2005 (27.6%), 2006 (27.4%), and 2007 (20.5%). The increase registered in Malta from 2015 (5.2%) until 2019 (11.9%) is due to the accessible programs offered by the International schools present in the country.
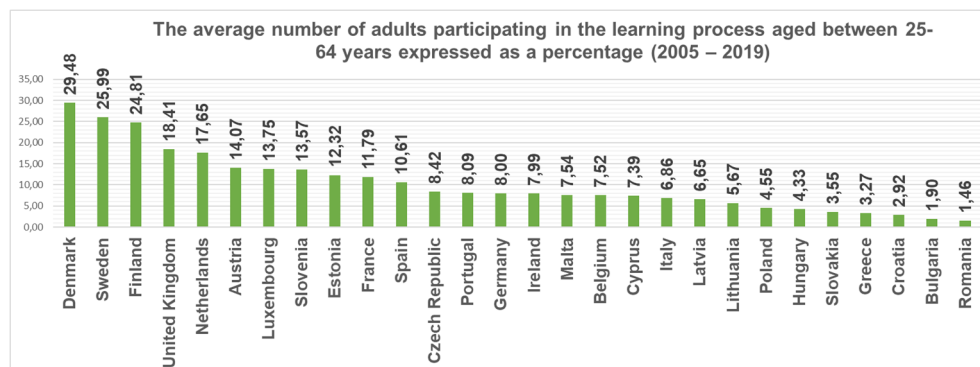
Figure 5: The average number of adults participating in the learning process aged between 25-64 years expressed as a percentage in 28 countries (2005 – 2019)
Source: created by the author, based on information collected from Eurostat

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In Dutch society, education is constantly on the agenda of state and non-governmental institutions. The success of the program like "Tel mee met Taal" is mirrored by the growing values: 2005 (15.4%) - 2019 (19.5%). Values such as 2017 (15.8%), 2018 (5.1%) in Austria are the result of cooperation between the Association of Austrian Adult Education Centers and the Democracy Center Vienna. (EAEA,2019, p.44) In figure 5 we can see the situation in the 28 analyzed countries. Values in Poland do not increase significantly because the Upskilling Pathways initiative is not well implemented. In Portugal, the period 2005 (4.1%) - 2010 (5.7%) is characterized by insufficient funding from the authorities, but after 2011 (11.5%) the values do not fall below 9% due to National Plan on Adult Literacy. Romania has the lowest values, 2005 (1.6%), 2010 (1.4%), 2015 (1.3%), 2019 (1.3%). The country still faces the challenge of convincing people that economic development can only be achieved through a solid education. In Slovenia, the period 2005 (15.3%) - 2011 (16%) is the most beneficial. Finland is experiencing systematic and stable growth from 2005 (22.5%) to 2019 (29%). Sweden demonstrates the quality of education through the growing values 2005 (17.4%) - 2019 (34.3%) which bears the mark of The Swedish National Council of Adult Education.

5. Conclusions

Efforts to encourage lifelong learning are significant, but due to the lack of a complex platform for good practices, 15 of the 28 analyzed country facing challenges implementing national strategies. The average number of students dropping out between 18-24 years from 2005 to 2019 show a tendency to decrease. In 27 countries the average number of female dropout is lower than that of men. The number of adults participating in the learning process aged between 25-64 in the period 2005-2019 shows an upward trend.

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THE NET PRESENT VALUE AND THE OPTIMAL SOLUTION OF LINEAR PROGRAMMING IN INVESTMENT DECISIONS

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Abstract: *This paper presents a comparison between the net present value (NPV) and the optimal solution of the linear program in order to offer an alternative perspective on the decision process. In the decision process, companies have to use more tools in order to make the right decision and to increase their values. So, using these two tools, namely, the net present value and the solution of the optimization problems, the companies will put together the expected benefits of the fixed asset investments and the available or potential resources. Using only one of these tools means that the company is oriented either to the future benefits of the fixed asset or to the investment capacity, with all technical or financial restrictions. The NPV is determined by using the standard formula while the optimal solution for the resource allocation is obtained by using the Simplex Algorithm and The Big M Penalty method. The comparison and combination of these indicators are used in the company's acquisition process and create some debates on the results in the acquisition process. The significant advantage of this paper is the improvement of the decision process in acquisitions by providing information from both the internal business environment and the external environment. Also, this comparison combines technical and financial information, which will make the decision of acquisition more reliable. There are some limits to this research. One limit is that it does not consider the possibility of delaying the investments since the NPV compares the now-investing to never-investing attitudes. Another limit is that the Simplex Algorithm offers a restrictive horizon of the decision since its components are expressed in positive integers. These two disadvantages may be discussed in further research, firstly, by appealing for the cost delay for making the right decision at the right time, and secondly, by using the fuzzy number in order to make the decisions in the fixed assets acquisition process more flexible. This last recommendation could replace the sensitivity analysis, which is a more complicated way to make the decision more flexible.*

Keywords: *net present value (NVP); investment; fixed assets; Simplex Algorithm; decision process; optimal solution.*

JEL Classification: *G17; G31.*

1. Introduction

Companies are often involved in complex decisions that ask for the management of information in such a way to achieve the best combination of limited resources and unlimited opportunities or needs. The need for fixed assets with increased

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performance should be balanced with future possible economic benefits and with the available resources, or the cost of the resources in order to obtain the assets. Of course, more factors influence the decision: the production efficiency, the cost of the training, the payback period, the expected return.

The purpose of this paper is to offer an improvement of the fixed asset acquisition decision by comparing the net present value with the optimal solution of the linear program, solved with the Simplex Algorithm. The major contribution is the combination of these tools, which will help the companies to consider both future benefits and current limited resources, not only the financial resources but also the employee training and development, the available space, etc.

2. Short literature review

Several articles and books talked about the combination of the NPV and the linear optimization problems, but they proposed different ways than what this paper is going to introduce here. Table 1 summarizes the publications that put together these two different tools.

Table 1: The comparison between NPV and the optimal solution in literature review

Name of the authors	Method of using NPV and optimal solution
Okoye (1998)	They used the Simplex Algorithm to maximize the net present value subject to the budget constraints for each period of the present value.
Padberg and Wilczak (1999)	They used the Simplex Algorithm to maximize the net present value of the projects and proposed a new model by formulating the objective function as the difference between the horizon value of the project (or net present value) and the amount of money borrowed at the beginning of the period. The objective function is a cumulative function of the differences determined for each project.
Schwindt (2005)	He proposed using the Simplex Algorithm for maximization the NPV, taking into account a limited initial budget, and used it in building industry where the benefits gained from completed projects serve to finance the upcoming projects.
Watson and Head (2007)	They proposed using the Simplex Algorithm for choosing the investment project, if it is expected that the investment funds can be restricted in more than one period. Using the mathematical model for linear programs, the company should easily identify the project that satisfies the restrictions.
Aman (2019)	He used the Simplex Algorithm in order to maximize the NPV, offered interpretation on the slack variables and used the sensitivity analysis.

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3. Investment decision using the Net Present Value

3.1. Definition and formula
The net present value is defined as "the sum of the present values of the incoming (benefits) and outgoing (costs) cash flows over a period of time. NPV can be described as the difference between the sums of discounted cash inflows and cash outflows." (Gaspars-Wieloch, 2017)
This financial tool is determined by the formula designed by Brealey, Myres, and Allen (2011):

$$NPV = C_0 + \sum_{t=1}^{T} \frac{C_t}{(1+r)^t} \, ,$$

where: C_0 - the cash flow at time 0 (negative number);
C_t - the cash flow at the time t;
r – discount rate.

There is a rule of rejecting or accepting the investment projects from the NPV perspective:
1. If the NPV>0, the company should invest in the project;
2. If the NPV<0, the company should not invest in the project;

If there are two or more projects, the net present value of the combined investment is according to Brealey, Myres, and Allen, (2011):

$$NPV(A_1 + A_2 + ... + A_n) = NPV(A_1) + NPV(A_2) + ... + NPV(A_n)$$

- If the net present value is positive for all projects, the adding-up property is valid;
- If the net present value is positive for some projects and negative for others, this property may be tricky, because the companies do not know if the package of the investments with positive and negative NPV will be more favorable than investing only in the projects with positive NPV.

3.2. Example
Let us consider company X, which must purchase new equipment for the production process in order to replace the old one and to increase the performance and the efficiency of the current activity. The four types of equipment considered here are analyzed from the NPV perspective. The following table presents the data for these four fixed assets:

Table 2: The NPV for each equipment

Eq_i	C_0	C_1	C_2	C_3	C_4	C_5	P.P.	NPV at 10%
A_1	-10.000	3.000	4.500	3.500	800	0	2	-379
A_2	-15.000	5.000	7.000	9.000	8.000	7.500	3	12.221
A_3	-20.000	5.000	7.000	10.000	13.000	15.000	3	16.035
A_4	-27.000	7.000	8.500	11.000	13.000	16.000	4	13.464

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where: Eq – equipment of type *i*;

C_t - the cash flow at time *t*, $t = \overline{1,5}$;

P.P. – payback period (it has an important contribution in investments, because it is compared with the cutoff period.)

From Table 2, it can be noticed that the equipment A_2, A_3, A_4 should be purchased now since the NPV is positive, and the aquisition of equipment A_1 should be rejected, due to the negative value of the NPV.

4. Investment decision using the Simplex Algorithm

4.1. Definition and methodology

The Simplex Algorithm is defined as "a step by step arithmetic method of solving linear programming problems, whereby one moves progressively from say a position of zero production and therefore zero contribution until no further contribution can be made. Each step produces a feasible solution and each step is an answer better than one before it, either greater contribution in maximizing problems or smaller costs in minimizing problems" (Okoye,1998).

In order to use the Simplex Algorithm, it is necessary to formulate the linear program as a mathematical model. The construction of the linear program is described in following table.

Table 3: The Elements of Linear Program

Components	Mathematical Model	Explanations
1. Objective function	$f(x) = c_1 x_1 + c_2 x_2 + c_3 x_3 + \ldots + c_n x_n$	c_n – the coefficients of the objective function x_i , i $= \overline{1,n}$ - the variables of the problem
2. Restrictions	$\begin{cases} a_{11}x_1 + a_{12}x_2 + \ldots + a_{1n}x_n \leq b_1 \\ a_{21}x_1 + a_{22}x_2 + \ldots + a_{2n}x_n \leq b_2 \\ a_{31}x_1 + a_{32}x_2 + \ldots + a_{3n}x_n \leq b_3 \\ \vdots \\ a_{m1}x_1 + a_{m2}x_2 + \ldots + a_{mn}x_n \leq b_m \end{cases}$	a_{ij} , i $= \overline{1,n}$ - the coefficients of restrictions b_i , i $= \overline{1,m}$ - right hand side value of the constraint
3. Nonnegativity conditions	$x_1 \geq 0$, $x_2 \geq 0$, ... , $x_n \geq 0$	

After the formulation of the linear program, there are some steps that should be followed in order to obtain an optimal solution for the linear program.

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Table 4: The steps of Simplex Algorithm adapted from Bolos et al. (2020)

Steps	Mathematical description
1. Converting the objective function and restrictions - Adding slack variables - Adding artificial variables (Big M Penalty)	$$\begin{cases} a_{11}x_1 + a_{12}x_2 + \ldots + a_{1n}x_n + s_1 = b_1 \\ a_{21}x_1 + a_{22}x_2 + \ldots + a_{2n}x_n + s_2 = b_2 \\ a_{31}x_1 + a_{32}x_2 + \ldots + a_{3n}x_n + s_3 = b_3 \\ \vdots \\ a_{m1}x_1 + a_{m2}x_2 + \ldots + a_{mn}x_n + s_n + A_n = b_m \end{cases}$$
2. Entering the restrictions in the Simplex Table	
3. Selection of the entering variable (optimality condition)	Minimizing problem: - If all differences: $Z_j - C_j \leq 0$ – the program is optimal; - If there is at least one $Z_j - C_j > 0$ – the entering variable is $\quad x_i = \max (C_j - Z_j)$ where: C_j - objective function coefficient, when $j = \overline{1,n}$; $\quad Z_j - \sum C_b \times P_k$ $\quad\quad$ where: C_b – the coefficient that each variable that appears at base has in the objective function; $\quad\quad\quad P_k$ – the coefficients of the variables in the restrictions when $k = \overline{1,n}$ (Table 5)
4. Selection of leaving variable	Minimizing problem: - the leaving variable is: $$x_l = \min \left\{ \frac{P_0}{P_h} \right\}$$ $\quad\quad$ where: P_0 – the right-hand side value of the constraints (the table notation) $\quad\quad\quad P_h$ – the coefficients of the restrictions for the entering variable $k = \overline{1,n}$ (Table 5)
5. Updating the table and solving the iterations, until the program is optimal.	

Table 5: Simplex Table adapted from
http://www.phpsimplex.com/simplex/simplex.htm?l=en

B_c	C_b	P_0	c_1	c_2	c_m	c_k	c_β	c_n
			P_1	P_2	P_m	P_k	P_β	P_n
P_1	c_1	B_1	1	0...	0...	a_{1k}	$a_{1\beta}$	a_{1n}
P_2	c_2	B_2	0	1...	0...	a_{2k}	a_{2v}	a_{2n}
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
P_α	c_α	B_α	0	0	0	$a_{\alpha k}$	$a_{\alpha\beta}$	$a_{\alpha n}$
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
P_m	c_m	B_m	0	0	1	a_{mk}	$a_{m\beta}$	a_{mn}
Z_k		Z_0	Z_1	Z_2	Z_m	Z_k	Z_β	Z_n
$\Delta_k = Z_k - C_k$		Δ_0	Δ_1	Δ_2	Δ_m	Δ_k	Δ_β	Δ_n

4.2. Example

Let us consider the same company X from the previous example, with the same need to purchase four equipment for the production process. They are analyzed by a series of acquisition criteria, and by restrictions resulting from the company`s activity.

To obtain the optimal solution that will show the right answer in the decision process, consider how the following table presents the formulation of the acquisition problem.

Table 5: The Coficient`s Values of the objective funtion and constraints

Elements	Criteria	Notations	A_1	A_2	A_3	A_4
Objective function €27.000	Number of the assets	x_i	x_1	x_2	x_3	x_4
	Acquisiton Cost (min)	$Ca(A_i)$	€10.000	€15.000	€20.000	
Restriction 1 275m²	The surface/equipment	$s(A_i)$		265m²	240m²	300m²
	The Total Surface	S			2000 m²	
Restriction 2 €27.000	Acquisiton Cost (min)	$Ca(A_i)$	€10.000	€15.000	€20.000	
	The Total Budget	B_c			€ 70.000	
Restriction 3 €2.200	Trainig cost/equipment	$t(A_i)$		€2.000	€1.000	€2.800
	Total Trainig Budget	B_t			€ 10.000	
Restriction 4	The obsolete assets that should be replaced				3 Eq	

The mathematical model for the linear program is as follows:
Objective function:
$$f(x) = 10.000x_1 + 15.000x_2 + 20.000x_3 + 27.000x_4$$

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Constraints:

$$\begin{cases} 265x_1 & + & 240x_2 & + & 300x_3 & + & 275x_4 & \leq & 2.000 \\ 10.000x_1 & + & 15.000x_2 & + & 20.000x_3 & + & 27.000x_4 & \leq & 70.000 \\ 2.000x_1 & + & 1.000x_2 & + & 2.800x_3 & + & 2.200x_4 & \leq & 10.00 \\ x_1 & + & x_2 & + & x_3 & + & x_4 & \geq & 3 \end{cases}$$

Non-negativity conditions
$$x_1 \geq 0, \ x_2 \geq 0, \ x_3 \geq 0, \ x_4 \geq 0$$

Once the mathematical model is adopted, the first step of the Simplex Algorithm is converting the objective function and the restrictions.

$$f(x) = 10.000x_1 + 15.000x_2 + 20.000x_3 + 27.000x_4 + 0S_1 + 0S_2 + 0S_3 + 0S_4 - MA_1$$

$$\begin{cases} 265x_1 & + & 240x_2 & + & 300x_3 & + & 275x_4 & + S_1 & & & & & = & 2.000 \\ 10.000x_1 & + & 15.000x_2 & + & 20.000x_3 & + & 27.000x_4 & & + S_2 & & & = & 70.000 \\ 2.000x_1 & + & 1.000x_2 & + & 2.800x_3 & + & 2.200x_4 & & & + S_3 & & = & 10.00 \\ x_1 & + & x_2 & + & x_3 & + & x_4 & & & & - S_4 & + A_1 & = & 3 \end{cases}$$

where: - S_1, S_2, S_3, S_4 – the slack variables
- A_1 – artificial variable

The slack variables meaning is:
- S_1 - the unused surface in m^2;
- S_2 – the unallocated budget;
- S_3 – the reduction of the training cost.

In addition to the slack variables, it was also introduced the artificial variable, because the problem is not a standard one. Actually, it is a non-standard with both ≤ and ≥ inequalities. So, it was necessary to add the artificial variable, which had no physical meaning and was introduced only for obtaining a basic feasible solution. To avoid having an artificial variable in the optimal solution, a very large penalty M was introduced in the objective function, as a positive constant value. (Dantzig and Thapa, 2002).

Moving on, the problem will involve two iteration: the initial Simplex Tableau and the second Simplex Tableau, in order to obtain this optimal solution:
$x_1=3$, $x_2=x_3=x_4=0$

This optimal solution means that company should purchase the asset A_1 because it satisfies the restrictions and minimizes the objective function, so $f(x) = 30.000$.

The slack variables are: S_1 = 1.205 m^2, S_2=€40.000, S_3=€4.000. This means that the company should re-allocate the funds for investment and calculate the cost of unused surface if the optimal solution is accepted, in order to evaluate the opportunity cost.

There are some advantages and disadvantages of using the Simplex Algorithm. The most important advantage is the opportunity cost that the algorithm reveals: the

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solution minimizes the objective function, but it is the surface that remains unused and the budget that should be allocated again. The company can estimate the cost of these slack variables and compare them with the optimal solution.

5. Discussion

There are three cases:
- A. NPV > 0, optimal solution = 0. This is the case for the assets A_2, A_3, A_4, where: $NPV(A_2) = 12.221$, $NPV(A_3) = 16.035$, $NPV(A_4) = 13.464$ and the optimal solution is 0. The NPV is a tool that influences the rejecting or accepting of the acquisiton project: if the NPV is negative, the company should reject the project, and if the NPV is positive, the company should accept it. From the NPV perspective, the company should accept these three assets, but from linear programming solution, the company should reject them, because the optimal value is equal to 0.
- B. NPV < 0, optimal solution > 0. This is the case for the asset A_1, where, $NPV(A_1)=-379$ and the optimal solution is 3. The company should reject the acquisition of asset A_1 from the NPV perspective and accept it from the Simplex solution. In this case, the company has to choose between the NPV solution and the optimal solution. The total NPV for the optimal solution is equal to: $NPV(3A_1)=-1137$.
    - If the costs of the slack variables (unused budget, unused surface) are smaller than the future economic benefits of the asset, the company should not invest in them.
    - If the costs of the slack variables are greater than the future economic benefits of the asset, the company should not invest in them.
- C. NPV > 0, optimal solution > 0. This case is the ideal one and means that from both NPV and optimal solution perspective, the company should accept the acquisition of the asset because it satisfies the objectives and the constraints of the company and will generate the increase of the company`s value.

In order to solve the first case and to combine the solutions from the NPV and the Simplex Algorithm, the company can appeal to the sensitivity analysis, which is defined as the "way to determine how robust proposed solutions are to changes" (Dantzig and Thapa, 2003). This analysis has been used until now for three reasons:
- Testing the reliability of the results in case of significant changes in objective function and constraints;
- To present the relationship between the input and output components;
- To make the results more credible for the companies and to make the decision process more flexible. (Dhand and Singla, 2016).

In this paper, the sensitivity analysis has a new approach: the company uses this tool to evaluate the impacts of accepting the assets with positive NPV and 0 optimal solution. The sensitivity analysis will help the company to establish what the surface, the budget and the training cost should be, to accept the assets with 0 optimal solution, and positive NPV. But if the company do not intend to modify the

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constraints, because the available surface is the maximum surface available for the equipment, the allocated budget is the maximum budget that can be allocated, and the total training cost is the maximum cost that the company can afford. The easiest way to simulate it is to modify the fourth restriction, which is the replacement of the obsolete assets.

5.1. Example with NPV > 0 and optimal solution > 0

If the same company X considers that purchasing of the Asset A_3 and A_4 is the best decision because they have the highest total NPV: NPV (A_3+A_4)=29.499, the company can modify the fourth restriction and obtain the following linear program:

$$\begin{cases} 265x_1 & + & 240x_2 & + & 300x_3 & + & 275x_4 & \leq & 2.000 \\ 10.000x_1 & + & 15.000x_2 & + & 20.000x_3 & + & 27.000x_4 & \leq & 70.000 \\ 2.000x_1 & + & 1.000x_2 & + & 2.800x_3 & + & 2.200x_4 & \leq & 10.00 \\ & & & & x_3 & + & x_4 & \geq & 3 \end{cases}$$

It can be observed that the company limited the possibility to obtain an optimal solution that has the negative NPV. So, the solution with x_1>0 was almost eliminated. Solving the new linear program with the Simplex Algorithm, the solution is:

$x_1=x_2=x_4= 0$, $x_3= 3$

The company should acquire A_3 to get the objective function $f(x) = 60.000$. The cost of acquisition will be greater than the cost from the first linear program, but the slack variables, the unused/unconsumed resources have a smaller opportunity cost: $S_1 = 1.100$ m², S_2=€10.000, S_3=€1.600. Even if the cost is greater, this new linear program proposes a better allocation for the resources.

5.2. Example with increased cost of unused resources

This sensitivity analysis is an uneasy and uncomfortable tool because it needs to solve the linear problem with the Simplex Algorithm every time when the constraints or the objective function change. If the company is in favor of acquiring other assets, the company should modify again the fourth restriction with percentage coefficients and reiterate with the Simplex Algorithm until the optimal solution is obtained.

$$\begin{cases} 265x_1 & + & 240x_2 & + & 300x_3 & + & 275x_4 & \leq & 2.000 \\ 10.000x_1 & + & 15.000x_2 & + & 20.000x_3 & + & 27.000x_4 & \leq & 70.000 \\ 2.000x_1 & + & 1.000x_2 & + & 2.800x_3 & + & 2.200x_4 & \leq & 10.00 \\ & & & & x_3 & + & 2x_4 & \geq & 3 \end{cases}$$

It can be noticed that the company was in favor of the A_4 and modified the fourth restriction. After solving the problem, the optimal solution is:

$x_1=x_2=x_3= 0$, $x_4= 1,5$

The slack variables are: $S_1 = 1587,50$ m², S_2= €29.500, S_3= €6.700. This example has the cost of unused resources greater than the previous simulation. The company should evaluate the optimal solution if it is a favorable choice because the

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unused resources would probably generate expenditures that will exceed the future benefits.

6. Conclusions and recommendations

The comparison and combination of the NPV and the Simplex Algorithm solutions with the help of the Sensitivity Analysis have some advantages:
- Increase the flexibility of the decision process and consider the preferences of the managers in this process;
- Increase the validity of the decision process, due to the different tools used to obtain the best solution;
- Put together the future and the present, by using the NPV to determine the future value of the assets and by using linear programming to obtain a solution that considers not only financial but also technical and operational constraints;
- Consider the internal and external business environment, by relating the NPV to the market and by using internal restrictions in the linear program to obtain the solution.

Though it has these advantages, the combination process is an uncomfortable and slow process, due to the sensitivity analysis that implies new iterations whenever the constraints change. It is the principal drawback of this paper, but it could be removed by using the Dual Simplex Algorithm and Fuzzy Linear Programs. The Dual Simplex is very used in re-optimization because it is a shorter way than the Primal Simplex Algorithm, so the company should not perform all iterations to obtain the optimal solution. The fuzzy linear programs allow a more flexible decision process because their variables, constraints, and objective function use the interval-valued fuzzy numbers (Guo, S. & Song, T., 2009). This is an advantage for solving a problem decision in an uncertain context when the constraints are changing in a short time, and it is necessary to use a "shortcut."

Further research is needed to investigate the impacts of the Dual Simplex Algorithm or the Fuzzy Simplex Algorithm and the NPV combination on the decision process. Also, it would be a new avenue or research to create a combination between the Fuzzy Dual Simplex Algorithm and the NPV.

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THE CONTEMPORARY APPROACH OF TAXATION, FROM THE POINT OF VIEW OF ITS HISTORICAL EVOLUTION. THEORETICAL FRAMEWORK

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Abstract: *The topic of this research focuses on the study of the taxation process, which is one of the oldest activities in human history and has played a key role in civilized societies for thousands of years, developing its roots with the emergence of the state and trade relations between people. The research methodology is mainly based on the method of theoretical research and the method of reading the literature, being mainly a qualitative research, designed to provide a generous substrate in addressing the process of taxation in economic life. Thus, this theoretical research aims to briefly cover the most important historical stages of taxation in order to provide a comprehensive definition of the concept of tax. The tax system, through compulsory levies, plays a complex role in any state, being one of the pillars of influencing the economy. The government plays an important role in the economic growth and development of emerging countries, as it provides indispensable public services, so we believe that the approach of taxation as a clear proof of fiscal civilization can provide significant theoretical resources for the literature. Given that tax levies are the basic components of tax revenues and are means and levers of budget revenue formation, this research aims to address them conceptually, so that the main purpose of this paper to be achieve. This article concluded that over time, the concepts of taxation have evolved and been transmitted to other cultures, where, later, fiscal ideas took root. This model continues to this day, as nations are influenced by the evolution of taxes in other countries, which are perceived in order to cover the financing needs of the state, in order to achieve the primary objective, namely economic stability. The value of the obtained results can be quantified by broadening the spectrum of theoretical research, providing an additional knowledge, significantly in the fiscal literature.*

Keywords: *historical evolution; taxation; tax system; fiscality; theoretical approach.*

JEL Classification: *E61; H20; N00.*

1. Introduction

This research is divided into four sections, namely *section one*, which includes the introductory part, which briefly presents the research objectives, research methodology and the central topic of the study.
Starting from the fact that the taxation process is one of the oldest activities in human history, which has played a key role in civilized societies for thousands of years,

As the use of money was still rare, most of these taxes were paid in kind. Thus, the peasants who made up the majority of the population had to bring to the emperor a fixed proportion of their crops. In addition, they had to represent the labor force needed to maintain public equipment, but also to build pyramids and temples or to work the emperor's fields.

The earliest writings on paying tribute to the pharaohs are found in the Bible, so that during the Egyptian empire, paying tribute to the temple and to the pharaoh was both a religious and a governmental contribution.

B. Ancient Greece (500 BC)

Greece was a nation that had a lot of wars, and they used taxes to finance them. Their tax was known as "eisphora", and public activities were funded directly and exclusively by prominent members of the community. A unique feature of the Greek fiscal system was their ability to cancel a tax once the war ended, and if too much money was raised from these fees, they returned the surplus funds back to the citizens (Petrakis, 2019).

C. Roman Empire (27 BC - 800 AD)

Again, the Bible refers to taxation, in memory of the disciple Matthew, who was a tax collector of the local government in Rome, under the leadership of Caesar Augustus. The Roman Empire went further, being the first of the oldest civilizations to impose a tax on both imports into the empire and exports from the empire. These were known as "portoria".

Taxation in the provinces of the Roman Empire was known for its severity, being charged for financing the central administration, as well as for expensive military campaigns. This period was characterized by a dramatic fiscal burden, in which there were laws on the obligation of the people to continue the work of the field, as well as trade, so that donations to the administration cannot be avoided (Smith, 2015). Also, during this period, attempts were made to tax capital and property, but to no avail. However, the Roman emperors imposed taxes, which are still valid today, namely inheritance tax (Emperor Caesar Augustus) and tax on the sale of property (Julius Caesar) (Günther, 2016).

D. Medieval Europe (1000-1700 AD)

The emergence of the feudal system imposed the principle that everyone, from the peasant to the duke, had to provide military service or work in exchange for the right to his land. Thus, in feudal Europe, the two main forms of wealth were land and labor. Labor was used as currency, in the form of military service, and the wealth of a feudal lord was measured by the size of his land holdings (Hodgett, 2006).

As monarchies and the era of imperialism grew throughout Europe, so did the need for cash - that is fees. Across Europe, cities and nations have taxed their citizens to support their armies and weapons, but also to explore new lands in the economic age of mercantilism and the age of exploration. In this way, in a somewhat official way, indirect taxes paid on goods transactions and direct taxes, paid on wealth or income were born (Salanie, 2011).

E. Early Modern Europe (1700-1900 AD)

Fiscal systems did not change much until the French Revolution, and governments, in order to obtain higher revenues, largely increased taxes on specific goods, called excise duties and customs duties, both domestic and foreign. But times have

changed, and the period of mercantilism and the era of exploration have been replaced by capitalism and the importance of individual wealth.

In 1776, Professor Adam Smith published the book Wealth of Nations, which was a groundbreaking work, and the world order began to change again as it changed the way individuals and governments viewed the economy and the use of taxes in providing public goods. He supported the idea of free initiative and considered money the value of a certain amount of labor, and the wealth of a nation was quantified by the volume of its production and consumption. Thus, as Smith's ideas of sharing and accumulating wealth spread, the powers of the monarchs began to wane.

The French Revolution, from 1789 to 1799, originated in the resentments of French citizens about taxes caused by Napoleon's changes in the fiscal system. He created a more centralized system, with private citizens, not government agents, as tax collectors, paying them a commission for the taxes they collected on behalf of the French government (Dieterle, 2020).

This revolution had important consequences, because in European countries there was a need to finance wars and determined governments to create the first modern income taxes. However, they were abolished when peace returned. The growing influence of liberal ideas on free trade was reflected in the nineteenth century in a marked decline in customs duties, which reduced fiscal revenues. To cope with low incomes, Robert Peel, the Prime Minister of England, reinstated the income tax in 1842, and out of a desire for equality, but also out of the need to finance the elements of state welfare, other countries followed suit. Thus, the income tax was a tax on social classes, being progressive, just like the profit taxes that appeared in the same period (Salanie, 2011).

As far as Romania is concerned, the most valuable fiscal reform instituted was carried out by the Organic Regulation of 1831, which stipulated new provisions regarding the abolition of internal customs between principalities, the collection of revenues and the adjustment of public expenditures, by including modern administrative regulations of the country's budget, by creating a National Bank.

F. Modern Europe

The first major world event of the twentieth century was the First World War, which brought about changes in taxation in several nations, especially in the United Kingdom, where an additional profit tax was imposed on companies that profited from the production of war materials.

Another important event was the Great Depression of 1930, characterized by an increased level of unemployment and a decreased level of productivity, phenomena that led, consequently, to significant decreases in government fiscal revenues. The book published by John M. Keynes in 1936, entitled "The General Theory of Employment, Interest and Money," was a source of inspiration for President Roosevelt's plan to get out of depression.

Keynes's ideas change the role of government and the use of taxation and fiscal policy to manage an economy. In his paper, Keynes suggests that the government should intervene in the development of the national economy by:
  (a) the application of saving in periods of economic growth, and in periods of recession and depression it is desirable to resort to loans and expenditures;

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(b) investments in infrastructure;

(c) adopting proactive fiscal policies, such as increasing fiscal spending, reducing taxes and issuing government bonds, to increase fiscal budgets for housing, roads and other public projects (Chen, 2020).

Following the Second World War, there was a high enthusiasm for building and rebuilding Europe, and this meant the need of high public revenues to cope with public infrastructure expenditures. Thus, there were the implementation of several taxes, but also the provision of several public services. Many of the tax-paid public programs were designed more to redistribute wealth than to provide a public good or service. Among the most important fees existing after this war are: the profit tax on war, the profit tax, the income tax, the turnover tax, consumption taxes, customs duties and excise duties.

During each world war, military spending reached or exceeded half of national revenues in the major war countries. Some countries have financed this explosion of public expenditures through loans, but most countries have resorted to tax increases (Salanie, 2011). Both world wars seem to have given a significant boost to public spending, but also to taxation.

Throughout history, the taxation process has seen a path of ups and downs, making it difficult to find its precise origin, because the state, regardless of its form at one time, has always been looking for financial support, either on the part of its citizens or on the part of those who crossed its borders.

Modern fiscal systems involve much greater clarity and transparency than the arbitrary revenue-generating systems of the past. And, according to what was presented, taxes were the basis of every major event in the history of the world. The truth is that the fees and taxes can be used for good or evil, in order to punish or secure and create a civilized society, in which economic, social and financial well-being is the primary goal. As the section presented shows, current fiscal systems are the product of a long evolution, marked by important historical events. Given this, it is not surprising that they vary greatly from one state to another state.

3. The essence of taxes and fees

The fiscal system, through compulsory levies, plays a complex role in any state, being one of the pillars of influencing the economy. Given that fiscal levies are the basic components of fiscal revenues and they are levers in the formation of budget revenues, it is necessary to approach them conceptually, so that the main purpose of this paper to be achieved. Broadly and unanimously accepted, the *tax system includes all mandatory levies, intended to participate in the formation of public fiscal resources of the state.*

It is very important to differentiate the notion of compulsory levies from that of fiscal levies. According to the specialized literature, the compulsory levies represent "the totality of taxes, fees and contributions levied on the public budgets component of the general consolidated budget", and the fiscal levies represent the totality of taxes and fees "which determine revenues at the state budget and local budgets" (Dobrotă & Chirculescu, 2010).

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It is necessary to establish a dividing line between the compulsory levies, in the first phase between the notion of fee and that of tax. The latter, unlike fees, represents the equivalent value paid by the taxpayer, natural or legal person, for the services provided in his favor, by the state and its institutions. The difference is summarized in the destination of the benefit, respectively:

- the direct benefit from the state to the taxpayer is specific to the tax,
- the collective benefit of public services is specific to fees.

The essence of taxes and fees is not very different, but the vision on them depends very much from one state to another, but also from one person to another, depending on the social, economic and cultural level in which they are. The study of taxes and fees, and the taxation process is not a new one, but it is very long, and over time many and different opinions have been addressed, as well as the people they have expressed, as can be seen in the summary in table no. 1.

Table no.1 Tax and fees exposures and their promoters

	The view of theorists and researchers on the concept of "tax"
Adam Smith 1776	The tax represents the payments that citizens bear for the services provided by the state.
David Ricardo 1817	Taxes offer the choice between several evils, because any newly introduced tax is an additional burden on production and price.
Alfred de Foville	The tax represents the regular levy, from private incomes, in order to subsidize public expenditures.
Charles de Montesquieu	The tax is a portion that each citizen gives of his property, in order to have the security of the other part of his fortune.
Paul Leroy-Beaulieu 1888	The tax is either a direct or a hidden contribution that the government demands from citizens to subsidize government spending.
Theodor C. Aslan 1905	Taxes serve to fuel the state budget and represent the sacrifice that the taxpayer must make to support the needs of the state.
D.Gh. Creangă 1909	Taxes are those donations, which are collected from individuals, by a public authority (...) by force, regulated in universal terms, to cover the expenses of the state, necessary for its purpose.
A. Wagner 1909	The tax exercises regulatory intervention in the distribution of national income.
A.Hansen 1941	Taxes are prices set by coercion for government services.
J.M Keynes 1936; W.J.Schultz and C.L. Harris 1954; R. Musgrave and P.Musgrave 1970.	Taxes, through the degree of taxation, can be used to influence the economy in several directions, respectively by affecting or stimulating investments, by affecting the decision to spend or save, but also by affecting or encouraging the incentive to work and leads an economic activity.

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	The view of theorists and researchers on the concept of "tax"
Pierre Lalumière 1970	Taxes can be used to encourage or discourage, by way of surcharge, a certain economic activity, without ceasing to be a means of economic or social intervention.
I. Talpoș 1996	Both the tax and the fee are historical financial instruments, the appearance of which is related to the existence of the state and money.
Gh. Bistriceanu 1995	The tax is an instrument of state intervention in economic and social activity (...) and contributes to the intertwining of general interests with local ones, with the interests of economic agents and the population, for the defense of integrity.
N. Dobrotă 1995	The tax is a mandatory levy and without consideration made by public administrations, in order to support public expenditures, through the financial function, but also in order to regularize economic activities, through the political function.

Source: made by the author, based on the bibliographic study of Popescu et al. (2000, p.130-170) and Caprian and Djugostran (2012, p.116) research

It is very important to have a common definition of the term tax, and the definition that encompasses the basis of the concepts, presented in the previous table, is *that taxes and fees are the backbone in collecting public revenues, but they are not limited to their financial function.*

In the autochthonous literature of the last two decades, taxes are unanimously recognized as "a form of mandatory and final collection of a part of the income and/or wealth of individuals and business entities, in favor of the state budget, in the amount and within the deadlines established by law, in order to cover public expenditures and without the obligation on the state part to provide the taxpayer with a direct equivalent" (Văcărel et al., 2007; Comaniciu, 2010; Ungureanu et al., 2017, Vodă and Dobrotă, 2018).

The studies undertaken, over time, offer many definitions of tax, and following the definitions presented above, four key aspects can be identified, which we believe that they need to be understood so that taxation can perform its functions in any society:

- *firstly,* the tax represents a payment, price, donation, contribution of the citizens to the public authority;
- *secondly,* it is an obligation, a constraint made to subsidize public spending and services provided by the state, but in modern tax systems, the tax we consider should be seen as an agreement between the state and taxpayers to achieve the common good;
- *thirdly,* the payment of the tax cannot be equivalent to the benefits received, it is without consideration from the state;
- *fourthly,* the tax is seen as an instrument, an economic and social regulatory intervention.

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Based on the previous definitions presented, it is obvious that a good fiscal structure plays a multiple role in the process of economic development of any nation, taxes having a historically binding, regulatory, legal and transparent character. Thus, from our perspective we can define the concept of taxation as representing the instrument of fiscal policy, used in order to intervene in the regularization of the economic and social plan of a state.

4. Conclusions

The present research has referred to the taxation process, in general, starting from its historical roots, and continuing, specifically, to its approach from the points of view of the great theorists in the economic and fiscal literature.

Thus, we concluded that from more rudimentary systems of income generation and the provision of forced labor within the feudal system, which inhibited both economic development and efficient governance, led to a gradual emergence of stable and regular levies based on transactions or property, from the period of monarchies. Democratic legitimacy in fiscal policy began to take shape in the early modern period in Europe, when rebellions in several European countries began to restrict the power of monarchs to impose taxation at will.

Over time, the world has evolved, and although taxes in developed countries at the end of the twentieth century have not seen much movement, changes to the privatization of public services have been in vogue, and the global economy has begun to emerge. As the twentieth century came to an end, spending, as a proportion of national wealth, did not fall, but in fact increased. In many countries, especially in Europe, state's expenditure on social welfare has increased, providing services and assistance to the poor, the disabled, the sick and the elderly. And in developing countries, where public infrastructure was poor, taxes and fiscal revenues remained minimal compared to expenditures (Dieterle, 2020).

Consequently, in the early days, taxation was either a price to be paid for protection, in particular for financing military movements, or a tribute to the central government, simply because people were members of an organized society.

Regarding the approach to the tax system, we can outline a definition of it, representing the legislative component and the main constituent of the fiscal system, which without an institution to deal with the collection of mandatory levies and without a mechanism to put this system into operation, taxation would be nothing more than new legislation.

Based on the definitions in the literature, from our perspective we can define the concept of tax as the main element of public revenue formation, with a long historical character, which is the mandatory financial compromise on the part of the taxpayer, for the benefit of the public budget and whose amount and payment term is established in advance, by legislation, with the purpose of financing government expenditures, but also of intervening in the fulfillment of national economic, social and political objectives, without being a direct compensation, from the state, for this sacrifice.

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Bassically, taxes and fees are the compromise that taxpayers are willing to offer, in order to benefit from public goods and services, which they use every day or occasionally.

As personal contributions, through this scientific article, we conclude that the value of the results obtained can be quantified by broadening the spectrum of theoretical research, providing additional knowledge, significantly in the tax literature, by offering our own views on the concepts of taxation, tax and fee and respectively tax system.

5. Acknowledgements / Bio-note

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DETERMINED FACTORS OF ECONOMIC-FINANCIAL CRIMINALITY

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Abstract: *The economic-financial crime is based on three main pillars, namely the underground economy, corruption and money laundering. The underground economy has negative connotations that include a wide area of coverage. On the other hand, corruption undermines democratic governance and the rule of law, negatively affecting, along with money laundering, economic development, representing a major impediment to economic growth in any economy. In the following we will refer to theoretical approaches of the specialized literature regarding the main categories of determinants - economic, political and behavioral of the economic-financial crime. We aim to carry out a theoretical analysis of the factors that have the capacity to define the economic-financial crime, so that later we can continue the research by studying the real effects in the society of the phenomenon of the economic-financial crime. The studies in question will want to be established as a basis for understanding the phenomenon and we will propose concrete solutions to combat it, aiming at limiting it and the adverse effects in the economy and society. The use of the methodology of investigating the specialized literature, followed by the analysis and synthesis of the data, allowed us to group the determining factors of the economic-financial crime into three major categories, namely the economic, the political and the behavioral ones, aspects detailed in the article. If the economic factors can be somehow standardized for different types of economies, the political and the behavioral ones are characterized by certain particularities that manifest themselves differently, having a specific evolution according to a certain context. The purpose of identifying and classifying the determining factors is to increase the capacity to "diagnose" the national economy, to better understand the phenomenon of economic-financial crime, so that later it can provide specialized technical support within the reach of the decision-makers in order to act as effectively as possible in combating it. In the hope of creating a foundation for the study and understanding the complexity and dynamism of the economic-financial crime phenomenon, the present article proposes to bring attention to the possible causes, without pretending to exhaust them, constituting a challenge for new studies in order to sensitize the institutions enabled in its fight to act proportional to its magnitude and complexity.*

Keywords: *economic-financial crime; economic factors; political factors; behavioral factors; underground economy; corruption.*

JEL Classification: *H26.*

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1. Introduction

Economic-financial crime began to be investigated in the early twentieth century, Bonger (1905) being among the first researchers to study the crimes committed by traders and entrepreneurs on property. In time, both the phenomenon itself and the related studies have undergone a development in scale and complexity. The economic-financial crime is dependent on the change and the economic-social development of the company, being able to appear in the form of the innovations carried out by individuals as a way of adapting to the changes in the society (Merton, 1968). In the age of digital technology, innovations are closely linked to cybercrime regarding financial transfers, requiring superior skills and perseverance (Șcheau, 2018). In a dynamic society like the present one, the adaptation to the new conditions is differentiated by the individuals in the society. If businessmen invent and develop new methods of "white collar" crime, in the form of tax evasion and money laundering, the poorest in society are turning to illegal activities such as prostitution and drug sales (Aniței and Lazăr, 2016). The present research starts from the study of the economic-financial crime from the perspective of the underground economy, corruption and money laundering, as main pillars that compose it.

Underground economy generically refers to non-currently registered economic activities, without being included in the calculation of Gross National Product - GDP (Feige, 1989, 1994; Schneider et al., 2015), respectively the totality of the production of goods and services on the market, legal or illegal, which is not included in the GDP estimates (Smith, 1994), being made up of two main components (Schneider, 2013), namely undeclared work to avoid taxation and unreported income from business, in order to avoid fiscal burden. The term of corruption is associated with the giving and taking of bribes in order to obtain private benefits, the entrepreneurs aiming at avoiding taxation and regulating or winning some public contracts (Achim and Borlea, 2019). In a broad sense, money laundering consists of the money transfer from an illegal activity into a legal business, aiming to induce the idea of legality of the origin of the money (OECD, 2017).

Different studies of the specialized literature invoke the economic development and the economic crises (Aniței and Lazăr, 2016) as a factor of triggering the economic-financial crime, producing major changes in the society, being stimulating for the criminals through the reflux effects created by suspending the legislation and the time elapsed until the promulgation of new regulations. Globalization is appreciated by some specialists (Leția, 2014) as also a favoring factor of the of economic-financial crime development, with multinational companies signaling their role, aiming to maximize profits at any price, speculating legislative deficiencies in different countries.

Also relevant are the researches of psychologists and sociologists from the judicial sphere in the fight against economic-financial crime, which highlight the major role of cultural factors in supporting this phenomenon (Durkheim, 1974; Merton, 1968). Durkheim (1974) introduces the term "anomia" as a consequence of social division. Anomia would represent a deterioration of the collective consciousness as a result

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of rapid social changes. In the following we will deal with this issue under three distinct aspects: economic, political and behavioral.

2. Economic factors that influence the economic-financial crime

2.1. The level of economic development

One of the most important determinants of economic-financial crime is the level of economic development. A high standard of living can lead to better law enforcement, so incentives to pay bribes as well as underground activities are reduced. Various researches (Husted, 1999; Treisman, 2000; Kirchler, 2007) show that the highest rates of illegal economic activity and corruption are found in developing countries and countries in transition, at the opposite pole being the developed countries, taking into account as an estimator for the level of development the GDP of each country. A high level of economic development can lead to a better compliance with the law, while a low level of it can create the opportunity for the phenomenon of corruption to emerge, as an expression of the population's disagreement with regard to the provision of public goods and the welfare of the state (Achim and Borlea, 2019). In the same idea, the studies carried out by Treisman (2000) and Paldam (2002) show that the phenomenon of corruption is determined by poverty, which is considerably reduced when a country becomes richer.
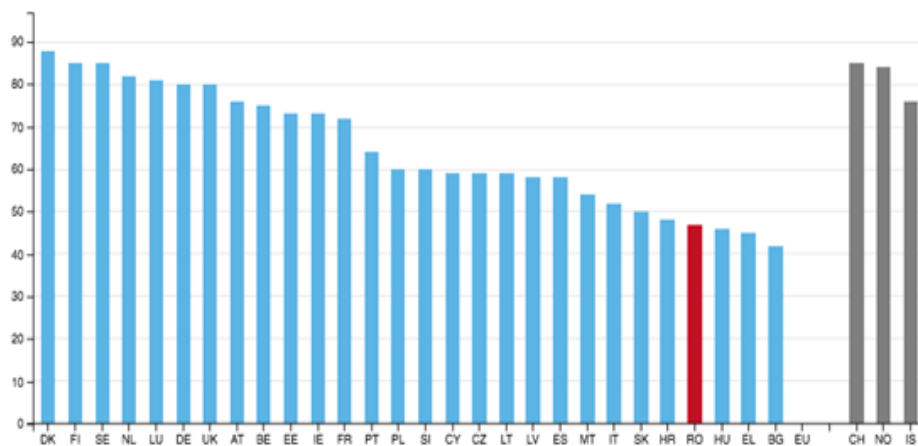
Figure 1: Corruption Perception Index, 2018, Europe; 0-100 scale, 0 most corrupt
Source: Transparency International

As shown in figure 1, a direct correlation can be made between the level of corruption perception index in the countries of Europe and their level of development.
On the other hand, specialized studies have shown that a high level of economic development within a country generates a better ability to pay and collect taxes and a greater demand for public goods and services (Chelliah, 1971; Torgler, 2007). In

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a study carried out in the countries of the European Union for the period 2007-2013, Achim, Borlea, Găban and Cuceu (2016) validate the hypothesis that, the richer a country is, the more the tendency of its citizens to engage in activities subterranean is lower, a fact also highlighted in figure 2, where a direct and inversely proportional correlation can be observed between the level of development of a country and the level of the underground economy (Schneider, 2015).
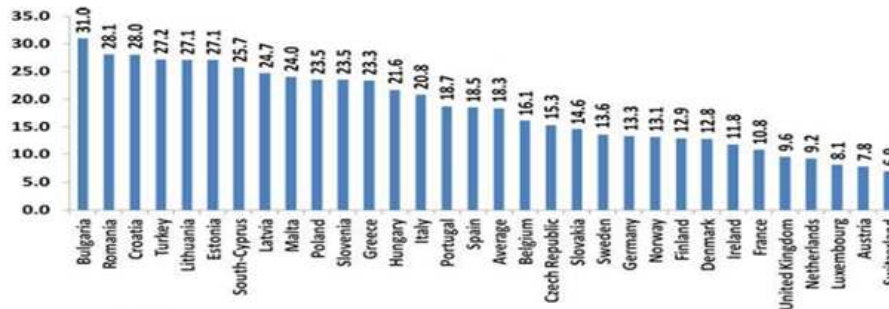
Figure 2: Underground economy level, 2014, Europe, percentage in GDP
Source: Schneider, 2015

2.2. Fiscal pressure

Fiscal pressure or fiscal burden is one of the most invoked causes of economic-financial crimes, considering that a high rate of taxation can lead to acts of corruption of civil servants for circumventing taxation or by engaging in underground activities. It is assumed that the fiscal burden is related to corruption, given that the bribing of officials is done by entrepreneurs to obtain some private gains, such as avoiding taxation and regulations or winning public contracts (Dreher and Siemers, 2009; Dreher and Schneider, 2010; Kaufman, 2010).

According to the assessments of Achim and Borlea (2019), the fiscal pressure reflects the volume of taxes and fees paid to the state budget and how it is felt by the taxpayer, from the perspective of their wealth. The influence of fiscal pressure on corruption must be analyzed in conjunction with other determinants for the level of corruption, respectively the level of economic development and institutional quality. The study carried out by Achim and Borlea (2019) highlighted the existence of differentiated results of the influence of fiscal pressure on corruption in the developed countries compared to the developing ones. For the developed countries it is found that, given the high quality of the institutions, a low fiscal pressure leads to a lower level of corruption, which corresponds to expectations. In contrast, in developing countries facing a low level of institutional quality, low fiscal pressure increases corruption, rather than low governance efficiency, whereby people can easily circumvent the law.

As a result, authorities should be aware of the need to adopt differentiated fiscal policies depending on the level of development of the country characterized by different levels of institutional quality (bureaucracy, quality of public services, ability

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to collect taxes, etc.). Low fiscal pressure can reduce corruption in developed countries and may increase it in developing countries, depending on the existence of different levels of government efficiency. At the same time, it should be good to consider that high levels of taxation determine the migration of investors to other countries that are "tax havens", to obtain a more favorable tax treatment.

At the level of the European Union, the fiscal pressure is not very homogeneous, the member states having the freedom to promote their own fiscal policies. The analysis of Eurostat data (2016) highlights (figure 3) the fact that developed countries "allow" them to exert fiscal pressure above the EU average, having as a "ally" a system with a higher institutional quality, which also allows them to maintain the corruption at lower levels. In the category of emerging countries there is a level of fiscal pressure below the European average. This fact, however, coexists with a higher level of corruption, as an effect of reduced institutional quality.
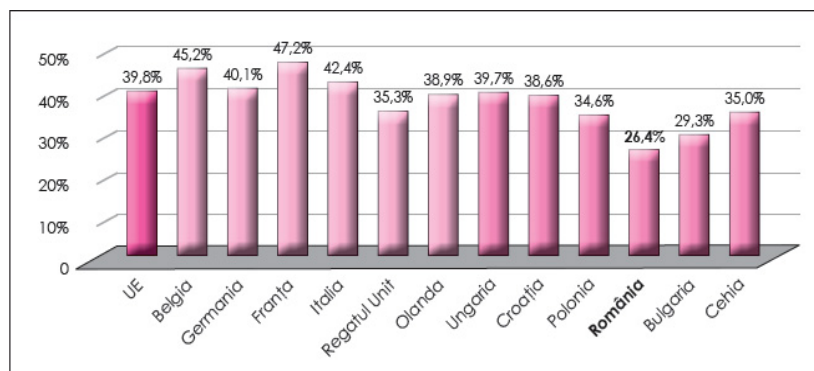
Figure 3: Fiscal pressure level, % of GDP
Source: Eurostat, 2016, ceccarbusinessmagazine.ro

Similarly, the study conducted by Achim, Borlea, Găban and Cuceu (2016) for the EU countries regarding the period 2007-2013, does not identify the fiscal pressure as a determining factor for the underground economy. Even if the results are contrary to expectations, it can be concluded that the fiscal pressure is not correlated with the underground economy, the explanation may be related to the different way of measuring the fiscal pressure for each country. This relationship should only be analyzed within a specific national framework, using as many variables as possible.

2.3. The solidity of the banking system

Because the banking system is the one that mediates the economic-financial transactions carried out in the economic activity, the literature and the specialized practice document the importance of the development of the banking system in the prevention and detection of the economic-financial crimes. The investigation of bank failures has led to the identification of accounting frauds and trafficking with internal information, considered to be important threats to any economy, raising big problems in terms of corporate governance and transparency. The existence of conflicts of

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interest as well as a very large number of non-performing loans indicates extremely low bank strength.

The specialized literature (Parck and Blenkinsopp, 2011) highlights a very close relationship between corruption and the performance of the banking system. The study shows a significant direct influence of corruption on problems arising in relation to non-performing loans. Corruption distorts the correct allocation of banking sources, which leads to a decrease in the quality of private investments, respectively a decrease in economic growth. Corruption in the banking system is based on several reasons: firms can bribe politicians to obtain preferential loans, and banks can bribe politicians to obtain unjustified tolerance (Parck and Blenkinsopp, 2011). The effect of these policies will materialize in the misdirection of financial resources from performing projects to inefficient projects, resulting in an increase in the volume of non-performing loans.

Relevant results in investigating the relationship between the solidity of the banking system and corruption were also obtained by Barry et al. (2016), highlighting the existence of a link between corruption in the lending process and the ownership structure of banks. Thus, companies located in countries where state-owned banks offer a higher share of loans granted to the economy face a higher level of corruption engaged in lending, showing a significant level of corruption of public officials. The same study shows that when banks are controlled by other banks, the level of corruption in lending is reduced.

Regarding the analysis of the relationship between banking development and the underground economy, Berdiev and Saunoris (2016) identify that the financial development reduces the size of the underground economy, the institutionalized financial flows representing an "ally" of the institutions empowered to verify and regulate them, to the detriment of the underground economy.

Of course, in the direct relation with the soundness of the banking system there is also the process of "money laundering", the banking institutions being instruments used by the economic criminals due to the multiple services offered (Idowu and Obasan, 2012). Through the banking institutions the criminals transfer the illegally generated money, in national or international bank accounts, to receive a legal appearance. The first stage in the money laundering process consists in the payment of the amounts of money from illegal activities in the financial-banking system, namely the establishment of deposits or the purchase of financial instruments that are subsequently collected.

In conclusion, as shown by Achim and Borlea (2019), a high level of transparency in the banking and financial sector, a high degree of monitoring of financial transactions and bank accounts, as well as an adequate financial supervision are factors identified by the literature as a decisive role in reducing money laundering offenses (Leția, 2014). Poor banking supervision can be the right environment for the decision to launder money in a given context.

3. Political factors that influence the economic-financial crime

Public governance is identified as the main political factor with implications for the occurrence, maintenance and disclosure of economic-financial crime. As Achim and

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Borlea (2019) point out, the accession of European countries to the European Union has raised the question of the importance of "good practices" in public governance, as key elements in explaining the degree of compliance with the accession provisions requested for EU member states.

Dimitrova (2002) emphasized that the greater the administrative or governmental capacity, the better the EU laws are implemented by the member states. The absence of EU unitary rules and the preferential adoption of administrative reforms lead to a marked variation in success in consolidating administrative institutions.

According to the recommendations of the European Commission and best practices in EU member states, the golden rule is that the smaller the number of institutions involved at different levels of governance, the higher the efficiency of governance. It is obvious the importance of the proper functioning of the public governance or the state apparatus on the corruption and underground economy phenomena. Aspects related to bureaucracy, regulatory framework, law and order compliance, trust, deterrent measures are important incentives for individuals' choice to engage in corruption or underground activities.

Specialized studies (Kirchler, 2007; Torgler and Schneider, 2009; Fritzen et al. 2014) highlight the importance of ensuring a high degree of trust in government institutions, in order to guarantee the proper functioning of the state. Corruption and trust are two important factors for the quality of public governance. Higher institutional quality determines citizens to have more confidence in the state and, therefore, they will be less interested in cheating. The government has a strong discretionary power regarding the allocation of resources, the role of the bribe being to avoid paying taxes or complying with legal regulations (Torgler and Schneider, 2009) and, therefore, companies with higher confidence in the state register in the same time and a lower level of corruption.

Confidence in government or in public services reflects the subjective judgments of citizens, whereby they consider the government competent, reliable and honest, able to satisfy their needs. Poor institutional quality leads to low trust in government, which leads to identification of the ways to circumvent the law (Kirchler, 2007). One of the most common ways is to bribe civil servants to avoid paying taxes, so corruption spreads. Moreover, it was pointed out that the influence of institutional quality on corruption is much greater in developing countries than in developed countries. Excessive bureaucracy, lack of transparency, ambiguous legislation stimulates a poor people who will become increasingly concerned about the corruption of officials for immediate benefits.

On the other hand, the studies carried out by Torgler and Schneider, 2009 demonstrate the importance of the quality of public governance over the underground economy. Direct democratic rights and local autonomy have a significant positive effect on the size of the underground economy. Analyzing various studies, Kirchler (2007) concludes that underground activities increase as confidence in public governance decreases, fiscal morality deteriorates and legal regulations regarding economic activities multiply. In addition, the study by Kogler et al. (2013) confirm the role of trust and power as important determinants of the degree of tax compliance, concluding that the highest level of tax compliance and the lowest

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level of tax evasion are achieved under conditions of trust and high power in government activity.

Concluding the relevant aspects of the aforementioned studies, it can be hypothesized that an increase in the quality of public governance leads to a reduction in the level of the underground economy. A high level of regulation, a low level of trust in the rule of law as well as a low level of generation of public goods and services is an important impetus for employment in the underground economy.

4. Behavioral factors of economic-financial crime

Various researchers have conducted specialized studies in other directions than those strictly of economic or political nature, permanently seeking other explanations for economic-financial crime. The studies started from understanding how the state is reflected in the minds of its citizens, analyzing the civic and fiscal feelings of the citizens. In this regard, Kirchler (2007) seeks explanations regarding the economic psychology of taxpayers, how tax behavior is reflected through social representations of tax obligations and their connection with individual and social attitudes and norms.

Socio-cultural factors are considered among the determining causes of corruption and the underground economy. Regarding the individual norms and the attitudes of the citizens, greed is invoked as an important component in deciphering the legal compliance behavior (Bucharest, 2011), and religion and how it influences the values of a nation can also be relevant for the phenomenon of corruption (Faleye, 2013).

Husted (1999) pointed out that the phenomenon of corruption is significantly associated with the cultural phenomenon. His study was able to identify a cultural profile of a corrupt country, being represented by the existence of a great distance from power (the degree to which the less powerful members of a society accept and expect that the power will be unequally distributed), a high masculinity (concern for achievements, heroism, assertiveness and rewards for success) and a high degree of uncertainty avoidance.

In a culture with greater distance from power, the superiors favor the subordinates in exchange for their loyalty, and corruption can occur as a result of nepotism and favoritism. In countries with higher levels of masculinity, people prefer to receive money, titles or other material rewards or social positions, so that the level of corruption increases. Avoiding uncertainty expresses the degree to which members of a society feel uncomfortable with uncertainty and ambiguity. In a society with a high level of uncertainty avoidance, corruption can be regarded as a mechanism to reduce uncertainty, to obtain more reliable and immediate results.

Regarding the cultural factors, studies have been carried out that investigate the payment of debts. Statistics (European Payment Index 2012, European Commission, 2012) show that commercial debts are paid faster by debtors in northern Europe than those in southern Europe, with the differences existing, respectively Finalnd (27 days) and Italy (96 days).

On the other hand, religion represents the symbolic expression of a belief in the existence of an absolute reality on which man would depend, faith in the supernatural, which defines a certain moral code of individuals. The analysis of the

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research carried out does not lead to the conclusion of the existence of certain results regarding the influence of religion on corruption.

The study conducted by Achim and Borlea (2019) shows that an increase in religiousness leads to an increase in the level of corruption. The findings contradict the fundamental assumption that religion encourages high moral values of individuals. It is noted that the least corrupt countries in the world are Denmark, Sweden, Finland and Norway, which also have the lowest degree of religiosity (about 30%). At the opposite pole of Europe are countries such as Italy, Romania and Greece, where the degree of religiosity exceeds 80%, these being considered among the most corrupt. The explanation given may be that in less developed countries, where people suffer from poverty, unemployment and insecurity, the corrupt lifestyle is more pronounced. As a result, people feel the need to compensate for their dishonesty and sins through religious activities, which ensures their emotional and spiritual satisfaction.

5. Conclusions, limits and directions of research

Due to the complexity of the manifestation forms of economic-financial crime phenomen, the present article aims to capture certain aspects with obvious relevance, new determinant causes being investigated during other studies to bring new approaches to the phenomenon. Of course, the complex highlighting of the cases is a favorable element for the superior understanding of the cause-effect mechanism, with a decisive role in the process of combating the economic-financial crime.

We intend to continue the present research and to study the real effects in society of the analyzed phenomenon, so that afterwards, we will seek and propose, to the competent authorities, concrete solutions to combat the phenomenon, aiming at limiting it and the adverse effects in the economy and society.

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KEY AUDIT MATTERS AT THE FINANCIAL SERVICES COMPANIES: ARE THERE DIFFERENCES?

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Abstract: *The inclusion of Key audit matters section in the new independent auditor's report aimed to improve the auditor's communication and increase the relevance of the audit of financial statements. Key audit matters differs from one company to another depending on several factors, such as its size, the field of activity, as well as the professional reasoning of the auditor. The objective of the paper is the analysis of key audit matters in financial services companies in order to highlight the most common matters reported. To achieve the proposed objective, the qualitative research method was used by analyzing the content of the information published by companies in the independent auditor's report and individual financial statements. The sample consisted of 12 financial services companies listed on the main market at Bucharest Stock Exchange for the period 2016 to 2019. The data were collected manually from the reports published by them. The sample is divided into two categories; banks and other financial services companies, which apply accounting regulations specific to each field of activity. With the exception of one company, all were included in the premium trading category. The variables analyzed were: the number of key audit matters identified by the auditors, the size of the auditors, the opinion issued, the audit fees to operating income ratio, the auditors'rotation, the preparation of consolidated financial statements and the profitability of companies. The average number of key audit matters was 1.67, being higher in the case of banks where the most common matter identified were the Depreciation of loans and advance to customers, than in the case of other financial services companies where the Valuation of financial assets had the largest share. It was found that there were matters common to both categories of companies Litigation provisions and Business combinations. No close correlations were identified between the variables, which means that the reporting of key audit matters is not greatly influenced by the variables analyzed. The differences between the key audit matters identified by the auditor are more influenced by the characteristics of the companies such as the field of the activity and profitabilty, and less by the characteristics of the auditor.*

Keywords: *Key audit matters; auditor's report; financial services; banks; financial statements.*

JEL Classification: *M41; M42.*

1. Introduction

The independent auditor's report is an important document for the company, as it contains information necessary for users to make the decision to invest in company

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(Hategan et., 2015). Starting with 2016, International Standard on Auditing (ISA) 701 (new), Communicating key audit matters in the independent auditor's report developed by the The International Auditing and Assurance Standards Board (IAASB, 2015), has been implemented for all listed companies. The new standard was necessary because users requested an auditor's report with more information about the audited companies. These changes to the audit report allow auditors to improve transparency in areas that require significant auditor attention, potential company risks, and how they have been managed.

Pinto and Morais (2019) analyzed the factors that influence the number of key audit matters (KAMs) that auditors reported for listed companies in major European countries and found that business complexity and audit fees lead to the disclosure of more KAMs. Other conclusion of their research was that the number of disclosed KAMs in banks is lower than in companies in other sectors, the explanation being determined by the fact that financial institutions operated in a highly regulated and supervised industry, which could reduce the need to disclose KAM's.

In this context the objective of the paper is the analysis of (KAMs) in financial services companies in order to highlight the most common matters reported. The sample includes 12 companies listed on the Bucharest Stock Exchange (BVB) in the financial services sector, and the data were analyzed qualitatively based on the information presented in the annual financial statements and in the independent auditors' reports for the period 2016-2019.

The paper presents an analysis of the available data on the reporting of KAMs by Romanian listed financial services companies, from a perspective oriented to the need and importance of KAMs identified by auditors, which should allow users to understand how which have been addressed by the auditor, which will make the report tailored to the specifics of the company.

The second section of the paper contains a a synthesis of the relevant literature on KAMs, followed by a third section describing the research methodology. The fourth section presents the results of the study, and the paper is finalized with the conclusions, limits and future directions of research.

2. Literature review

In research on the audit of financial statements the topic of KAMs is a relatively new topic given that currently there is only a history of reports for the last four years. However, there is already a fairly rich and relevant literature that discusses this issue, with studies being conducted by large audit firms and scientific articles published in academia. The implementation of the new ISA 701 required auditors to prepare the new report in the required format and provide relevant additional information that would provide greater transparency to users of the financial statements. (Bedard et al., 2016). The number and subject of KAMs identified by the auditor draws the attention of users which may lead to a decrease in attention to other items that are not described in the auditors' report (Sirois et al., 2018).

Masdor and Shamsuddin (2018) investigated whether there was an impact of KAMs disclosure on investor reaction and audit quality, in several developed countries and made a ranking of KAMs frequency identified by auditors, with Valuation of Property

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and Impairment of Goodwill and Intangible Assets. The conclusion of their study was that for the beginning the inclusion of KAMs did not bring any impact to investors and did not lead to a higher quality of audit, there being a gap between auditors and investors.

Gold and Heilmann (2019) conducted a study of academic research papers that examined the effect of KAMs disclosures in the auditor's report and identified that these effects were correlated with investor behaviour and capital market reaction, with the auditors' responses, the auditor's liability and the responsiveness of the audited companies. The findings of their study show that the disclosure of KAMs is a positive aspect to draw attention to users of financial statements, but can also have negative influences by increasing audit costs and audit delays.

Moroney et al. (2020) conducted a study on the investors evaluation of KAMs included in the auditors' report and found that they considered the audit to be more credible only when it was performed by the audit firm included in the Non-Big4 category and from research of Sirois et al. (2018), it turned out that the inclusion of KAM diverts investors' attention from the essential paragraphs of the audit report.

The research done by Lennox et al. (2019) showed that almost three quarters of the number of KAMs presented in a report are maintained in the next year which is an important aspect that influences investors in decision making.Another study conducted by Altawalbeh and Alhajaya (2019) on the case of 128 companies listed on the Amman Stock Exchange by manually analyzing the content of auditors' reports in 2017 showed the obligation to disclose KAMs had informational value for investors.

Loew and Mollenhauer (2019) investigated auditors' reports for 2017 on a sample of 90 European banks to identify the factors that cause auditors to report certain KAM and the number of KAMs reported, if they differ between audit firms. The results obtained showed that the specific factors of the individual banks influence the number and topic of KAMs, but the number of KAMs reported does not differ between auditors. Trpeska et al. (2017) investigated bank employees lending to corporate clients in Macedonia about their views on the new audit report and found that information on KAMs, business continuity and fraud risk assessment procedures contributes to the decision to granting loans.

KAMs included in the auditors' reports issued for the Romanian companies listed on BVB were also studied, so Fulop (2018) analyzed the good practices, and Grosu et al. (2020) found that they lead to an increase in the quality of the audit. Also, Batae (2019) found that in the case of the main Romanian banks the KAMs number did not change from one year to another.

3. Methodology

To achieve the proposed objective, the qualitative research method was used by analyzing the content of the information published by companies in the independent auditor's report and individual financial statements. The sample consisted of 12 financial services companies listed on the main market at Bucharest Stock Exchange for the period 2016 to 2019, grouped into two categories banks and other financial services companies (OFSC). The data were collected manually from the

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reports published by them. In the first stage, the auditors' reports issued to the individual and consolidated financial statements were identified to determine which of them will be analyzed in the next stage.

In the second stage, the KAMs presented for the chosen sample were identified, after which they were analyzed together with indicators that reflect the characteristics of auditors and companies to highlight whether any of the characteristics influence the number and subject of KAMs.

Table 1 presents the companies in the sample in alphabetical order together with information on start trading data, transaction category, NACE Code of field of activity and accounting regulation.

Table 1: The sample

Name	Code	Start trading date	Category	NACE Code	Accounting Regulations
BANCA TRANSILVANIA	TLV	15.10.1997	Premium	6419	NBR Order 27/2010
BRD - GROUPE SOCIETE GENERALE S.A.	BRD	15.01.2001	Premium	6419	NBR Order 27/2010
PATRIA BANK S.A.	PBK	09.06.2004	Premium	6419	NBR Order 27/2010
BURSA DE VALORI BUCURESTI SA	BVB	08.06.2010	Premium	6611	FSA Rule 39/2015
FONDUL PROPRIETATEA	FP	25.01.2011	Premium	6430	FSA Rule 39/2015
SIF BANAT CRISANA S.A.	SIF 1	01.11.1999	Premium	6499	FSA Rule 39/2015
SIF MOLDOVA S.A.	SIF 2	01.11.1999	Premium	6499	FSA Rule 39/2015
SIF MUNTENIA S.A.	SIF 4	01.11.1999	Premium	6499	FSA Rule 39/2015
SIF OLTENIA S.A.	SIF 5	01.11.1999	Premium	6499	FSA Rule 39/2015
SIF TRANSILVANIA S.A.	SIF 3	01.11.1999	Premium	6499	FSA Rule 39/2015
SSIF BRK FINANCIAL GROUP SA	BRK	05.02.2005	Premium	6612	FSA Rule 39/2015
TRANSILVANIA BROKER DE ASIGURARE SA	TBK	02.11.2017	Standard	6622	FSA Rule 36/2015

Source: Own processing

The sample included three banks which have NACE code 6419 - Other monetary intermediation and which have applied accounting regulation, the National Bank of Romania (NBR) Order no. 27/2010 for the approval of Accounting Regulations in accordance with International Financial Reporting Standards (IFRS), applicable to credit institutions. The sample also includes 8 financial investment companies, grouped into 4 types of activities according to NACE classification, which have applied accounting regulation, the Financial Supervisory Authority (FSA) Rule 39/2015 for the approval of Accounting Regulations in accordance with IFRS,

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applicable to entities authorized, regulated and supervised by the FSA of the financial instruments and investments sector. An insurance brokerage company was also included in the sample, which applied regulations specific to its field of activity, FSA Rule 36/2015. All companies apply IFRS due to the fact that they are included in the category public interest entities (PIEs).

Table 1 shows that Banca Transilvania has the longest listing period on the stock exchange, and Transilvania Insurance Broker, the shortest period. Also, almost all the companies included in the sample were included in the premium trading category except for the last listed one (TBK).

4. Results

In order to identify the KAMs mentioned by the auditors in the issued reports, an analysis of the financial statements published by the companies was performed, ie whether they published only individual financial statements (IFS) or consolidated financial statements (CFS). The results of this analysis are presented in Table 2.

Table 2: Presentation of the consolidates financial statements (CFS)

No	Code	CFS	Observation regarding CFS	Observation regarding KAMs in auditor report for CFS
1	TLV	Yes	The CFS were presented together with IFS	The auditor issued a single report for both IFS and CFS
2	BRD	Yes	The CFS were presented together with IFS	The auditor issued a single report for both IFS and CFS
3	PBK	Yes	The CFS were presented together with IFS	The auditor issued a single report for both IFS and CFS
4	BVB	Yes	The CFS were presented separated from IFS	In 2018 and 2019 KAM are presented only in SFC.The auditor identified more KAM in report related CFS than in IFS
5	FP	No	Apllyed the exception from IFRS 10	
6	SIF 1	Yes	The CFS were presented separated from IFS	The auditor identified more KAM sin report related CFS than in IFS
7	SIF 2	Yes	The CFS were presented separated from IFS	The auditor explained in more detalis the KAMs in report related CFS than in IFS
8	SIF4	Yes until 2017, No from 2018	Started with 2018, applied the exception from IFRS 10	For 2016 and 2017 the auditor identified more KAMs in report related CFS than in IFS
9	SIF5	Yes	The CFS were presented separated from IFS	The auditor identified less KAM sin report related CFS than in IFS
10	SIF 3	No	Applied the exception from IFRS 10	
11	BRK	Yes	The CFS were presented separated from IFS	The auditor not presented KAMs in report related CFS.

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No	Code	CFS	Observation regarding CFS	Observation regarding KAMs in auditor report for CFS
12	TBK	No	The company does not hold shares in other companies	

Source: Own processing

From Table 2 it results that most companies belong to a group and were required to prepare CFS, only three companies did not prepare CFS, of which two (FP and SIF 3) applied the exception from IFRS 10 Consolidated Financial Statements regarding the requirement of consolidation, and a company (TBK) does not belong to a group of companies. The banks chose to present the content of IFS and CFS in the same report, so that the KAMs identified by the auditors are the same, at the individual and consolidated level of the companies' financial statements. For most of other financial services companies, the KAMs included in the reports issued by individual auditors are not identical to those at the consolidated level. Therefore, three situations were found, namely: several KAMs at consolidated level (BVB, SIF1, SIF4), fewer KAMs at consolidated level (SIF5) or the presentation of KAMs only in a single report, or at consolidated level (BVB), or at the individual level (BRK).

Considering the aspects mentioned above in the next stage, the KAMs identified in the reports issued by the auditors only related to IFS were analyzed, in order to have a better comparability.

Table 3 shows the KAMs identified, by their number, by the two groups of companies and by their categories in which the KAMs were synthesized according to their subject, in order to ensure greater clarity of the analysis.

Table 3: KAMs identified in auditor's reports

Code	Name of KAM	Banks	OFSC
KAM1	Impairment of loans and advances to customers	12	
KAM 2	Litigation provisons	7	4
KAM 3	Information Technology (IT) systems relevant for financial reporting	4	
KAM 4	Recoverability of deferred tax assets	3	
KAM 5	Liability for non-controlling shareholders' redemption rights	2	
KAM 6	Tax treatment	2	
KAM 7	Business combination	2	1
KAM 8	Going concern	1	
KAM 9	Valuation of financial assets		38
KAM 10	Own company assets separation form the client's assets		2
KAM 11	Share capital presentation		1
KAM 12	Initial balances		1
	Total	**33**	**47**

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Code	Name of KAM	Banks	OFSC
	Number of companies	**3**	**9**
	Average of KAM/ company/ year	**2.75**	**1.31**

Source: Own processing

Table 3 shows that the average of KAMs was higher in banks (2.75) compared to other financial services companies (1.31). This situation can be explained by the fact that banks have a greater impact on stakeholders and the volume of auditing operations is higher The average number of KAMs at the analyzed banks is slightly lower than at European banks, where it was 4.4 in 2017 and 4.2 in 2018 (Accountancy Europe, 2019).

At banks, the most widely used KAM was Impairment of loans and advances to customers, which the auditors considered to be of the most importance in auditing the financial statements, followed by two other equally important issues that frequently appear in auditors' reports, Litigation provisons and IT systems. The presented ranking is very close to the results of the studies carried out by Accountancy Europe in European banking sector for period 2017-2018 where the previously mentioned KAMs were identified (Accountancy Europe, 2018).

In the category of OFSC the highest frequency was the Valuation of financial assets which identified under various names: valuation of financial instruments; valution of listed and unlisted financial assets; valuation of equity investments; assessment of the receivables. This key was of significant importance because it involved complex judgments of these assets with the largest share in total assets.

The KAMs group showed that some matters were common to both categories of companies, namely Litigation provisions and Business combinations.

The highest frequency of the most common KAMs in both groups referred to the component with the highest share in the companies' assets, respectively Loans and advance to customers and Financial assets obtained as a result of the activity carried out. This high frequency is due to the fact that they do not change from one period to another. Therefore, it can be stated that the object of activity is the main factor that determines the identification of KAMs.

In order to describe the links between the identified KAMs and the characteristics of the companies, several indicators were studied that reflect the activity of the auditors and information about the financial statements of the companies and their profitability. Based on previous research, indicators have been identified which reflects the activity of auditors, such as the size of the auditor (Levanti, 2019), the auditor's opinion (Danescu and Spatacean, 2018; Istrate et al., 2020), the ratio between audit fees and operating income, and the rotation of auditors. The description of the variables is presented in Table 4.

Table 4: Description of variables

Variable	Code	Description
Number of identified KAM	KAM	From 0 to 4
Auditors Size	S	1 – BIG4 0 – Non BIG4
Auditor opinion	O	1 – Unmodified opinion

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Variable	Code	Description
		0 – Modified opinion
Audit fees to operation income ratio	F	1 – If ratio increase 0 – If ratio decrease
Auditor rotation	R	1 – Same auditor 0 – New auditor
CFS	C	1 – Yes 0 – No
Profitabiliy of the companies	P	1 – Profit 0 – Losses

Source: Own processing

The number of KAMs identified in an auditors' report ranged from 0 to 4. Thus, in 3 reports (6.25%) no KAM was mentioned, and in 22 reports (45.83%) only one KAM was included. In 12 reports (25%) 2 KAMs were identified, and in 10 reports (20.83%) 3 KAMs were mentioned. A single report (2.08%) issued by auditors contained 4 KAMs. Reports that presented 3 or 4 KAMs were mostly issued by banks auditors. The statistical description of the analyzed indicators is presented in table 5.

Table 5: Descriptive statistics

Variables	No.obs	Average	Standard error	Standard deviation
KAM	48	1.6667	0.1375	0.9528
S	48	0.7292	0.0648	0.4491
O	48	0.9167	0.0403	0.2793
F	40	0.6000	0.0784	0.4961
R	48	0.7500	0.0632	0.4376
C	48	0.7083	0.0663	0.4593
P	48	0.8542	0.0515	0.3567

Source: Own computation

The average number of KAMs identified was 1.67, which shows that in more than half of the number of auditors' reports, more than one KAM was presented. Regarding the size of the auditor, it can be seen that 72.92% of the auditors belonged to category BIG4. From the study of the issued reports this situation has no influences on the identified KAMs nor on the expressed opinion.
The auditor's opinion on the financial statements is the main purpose of the report, so that the study showed that 91.67% of the opinions expressed were unmodified, which shows that the financial statements were in accordance with the rules, standards and provisions by which they were defined. and met the criterion of sincerity, expressing a true, clear and complete image of the financial statements.
The modified opinion had a frequency of occurrence of 8.33%, being identified 4 audit reports with qualified opinion, these being based on reasons such as possible impairment of the fair value of the participation in subsidiary and the degree of

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comparability of the financial information for the current period with the corresponding financial information for the previous year.

The audit fees to operating income ratio of the companies could be calculated only for 10 companies, in 2 companies no public data were found on the size of fees, so the share of 60% increase in the indicator refers to only 10 companies. The weight increase factors are due to higher audit fees or declining operating income, the situation being different from one company to another.

Regarding the auditors' rotation, it was found that in the case of 75% of the number of reports were issued by auditors in previous years, so we can appreciate that there was a stability of them from one period to another. In the first year in which the auditor was changed, the number of key issues identified changed to increase or decrease, but this change was not mainly due to the auditor, but to the company's activity that year.

The consolidated financial statements prepared by the companies had a weight of 70.83%, the reasons being previously presented in Table 2. Most of the analyzed companies obtained profit, in a proportion of 85.42%, only in one situation the loss obtained led the auditor when identifying KAM about going concern.

5. Conclusions

In the process of identifying KAMs, the auditor relies on his professional reasoning and seeks to select those aspects that are most important in the audit of financial statements and will analyze them through various procedures and describe them in the report. KAM's communication has positive implications for the public by increasing its confidence in the value and relevance of financial auditing.

The objective of the paper was to highlight which are the main KAMs identified in companies from the financial services sector and to analyze their relationship with the characteristics of auditors and audited companies, in order to identified whether there are differences from other sectors of activities.

The results showed that, at banks the auditors identified more KAMs than the other financial services companies, the banks being companies that have complex auditing activities. The main categories of KAMs identified were Impairment of loans and advance to customers for banks and Valuation of financial assets for other financial services companies. There were also joint KAMs between the two categories of companies, namely Litigation provisions and Business combination.

From the analysis performed, a close correlation could not be identified between the number and types of KAMs reported and the characteristics of auditors and companies. Thus, the size of the auditor, the change in the audit opinion, the ratio audit fees to operating income ratio and the auditors' rotation did not directly influence the identified KAMs. The change of KAMs from one period to another was mainly due to changes in the company's activity presented in the annual financial statements. The main conclusion resulting from the study is that the types of the KAMs reported by the auditors depends more on the company's field of activity than on other internal or external factors in according with research of Loew and Mollenhauer (2019).

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The paper can be a reference for researchers in the field of accounting and financial auditing, for company management to understand the need to include KAMs in auditors' reports and their effects on users of financial statements.

The limits of the research consist in the following small sample, relatively short analysis period, manual data collection. The research can be continued by expanding the sample nationally and internationally, as well as by analyzing other variables that could influence the number and types of KAMs reported by auditors.

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A KEYNESIAN MODEL APPLIED TO THE WATER AND SEWAGE PUBLIC UTILITY OPERATORS

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Abstract: *This article presents a short foray into the scientific specialized literature on public utility services in Romania, and in particular, the utility services in the field of water supply and sewerage network. It is essential to satisfy the requirements and the needs of the client in the field of public utility services, the performance in this field being the only feasible option to ensure the quality of the services safety and accessibility, the equal treatment of the users, the continuity of the activity and last, but not least, the adaptability and the flexibility regarding the requirements. Through the performed research, by using the Keynesian model applied to the financial data reported by the local water supply operator, aimed to obtain an insight into the evolution of revenue and expenditure, as well as the effect of increased investment. These elements express the relationship between resources and results, and their balance is based on a Keynesian model in a closed economy. By applying the Keynesian model, we have concluded that the evolution of revenue and expenditure is influenced by a number of factors which can lead to a decrease in expenditure, but although that, the revenues increase from year to year. The Keynesian model applied in the economy of public utility services, involves in its structure variables such as investments, and by applying the investment multiplier consumption remains the economic phenomenon that dominates the water supply economy. However, an increase in consumption has the ultimate effect of obtaining a profit for the operator, which will in the future be its own source of financing for investments in the water supply and sewerage system. Thus the orientation towards consumption becomes beneficial both in terms of satisfaction of end-users and from the point of view of the operator, in terms of revenue growth and the analysis of the. Even if capital goods do not directly meet the needs of end-users, they lead to the development of public utilities and its specific infrastructure, and to the fulfilment of the eligibility conditions imposed by the European Union's financing programmers. Expansion investments in water and sewerage services have the direct effect of increasing the number of users, as well as increasing the number of employees of the operator.*

Keywords: *performance; requirements of the public utility services; marginal propensity to consume; the investment multiplier.*

JEL Classification: *L32; L97; E12; E13; H50.*

1. Introduction

Public utility services are subject to specific public service obligations in order to ensure a high level of safety and accessibility, equal treatment, the promotion of

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universal access and user rights. Regardless of the nature of the public service, it designates all activities of general interest provided by service operators in the interest of a community, using public goods for a limited period of time, with the aim of transforming material, human and financial resources into services of the highest quality and maximum utility. Based on the claim that the Keynesian approach at the level of a local economy" is identical to the simplest version of the Keynesian model in an open economy, the only difference being that all variables refer to the local economy instead of the national one" (Constantin,2004, p85), this paper checks the Keynesian model in the field of public utility services of water and channeling at the level of a regional operator

2. The current state of the public utilities service in Romania - the field of water supply; sewage and sewage treatment, collection, drainage and drainage of rainwater.

2.1. Current status of the public utilities service in Romania

After 1990, the public utilities services experienced various regulations that in fact represented the will of post-revolutionary Romania to join the European and Euro-Atlantic structures, which was first materialized in 2001 by Law no. 326 of communal management services and the legislation specific to each field. Against the background of EU accession, Law no. 51/2006 on community services of public utilities was adopted, which was later updated by Law no. 225/2016. The general legal framework established was completed by special laws for each type of activity, which for the field of water supply and sewerage was made by the Law on water supply and sewerage service no. 241 of 2006 republished.

Public utility services are defined by national legislation as the totality of activities that ensure the satisfaction of the essential needs of utility and general public interest of a social nature of local authorities, regarding: water supply; sewage and wastewater treatment: collection, sewerage and drainage of rainwater; thermal energy supply in centralized system; sanitation of localities; public lighting; natural gas supply; local public passenger transport (Law no. 225/2016).

The legal provisions in the field are aimed at satisfying the users' requirements as fully as possible, protecting their interests, strengthening the economic-social cohesion at the level of local authorities, as well as the sustainable development of the administrative-territorial units. (Law 51/2006 republished)

The legislature, through Law no 225/2016 highlights that the organization and operation of the public utility services must ensure the fulfilment of the public service duties established according to the following fundamental demands: universality; continuity in terms of quality and quantity; adaptability to the users' requirements; equal and non-discriminatory access to the public service and transparency of the decision making and the protection of the users.

The public utility services are subject to certain obligation particular for the public sector, with the purpose of ensuring a high level of quality, safety and accessibility, equal treatment, promoting the universal access and the rights of the users. The legal provisions aim at satisfying as fully as possible the users' requirements, protecting their interests, strengthening the economic and social cohesion among

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local collectivities, as well as the sustainable development of the territorial and administrative divisions (Law no 51/2006 republicate).

These services are provided by means of specific technical-public infrastructures, called public utility systems, which are goods of public interest and use and belong, by their nature or according to the law, to the public or private domain of the administrative-territorial units, being subject to the regime. legal status of their public or private property, as the case may be, as defined and delimited by Law No. 213/1998 on public property goods, as subsequently amended and supplemented.

The public utility services are the responsibility of the local public administration authorities or, as the case may be, of the inter-community development associations with object of activity, the public utility services, mandated by decisions of the deliberative authorities of the member administrative-territorial units. The public utility services are established, organized and managed in compliance with the legal provisions, according to the decisions adopted by the deliberative authorities of the administrative-territorial units, depending on the degree of urbanization, the economic and social importance of the localities, the size and the degree of their development and in relation to the existing technical-municipal infrastructure. In the organization, operation and development of public utility services the general interest of local communities is a priority. The legal provisions aim at satisfying the users' requirements as completely as possible, protecting their interests, strengthening the economic and social cohesion at the level of local communities, as well as the sustainable development of administrative-territorial units (Law 51/2006 republished).

The public utility services are subject to the legal regime of the public services of general interest, the legislator establishing the legal regime of the operators, the relations between the same users, the ways of managing the services, their financing.

Romania's accession to the European Union had as an effect the transposition in the national legislation of the European Community directives, a significant impact on the public utility services having the provisions regarding the regionalization. Creation of development regions and institutional structures for regional development, initially according to the Regional Development Law no. 155/1998 and subsequently to the Framework Law on Decentralization no. 195/2006, is an integral part of these series of reforms. As Demeter J., Klarik L. and Kolumban G. remarked, the regionalization of Romania is not the result of a spontaneous social, economic or administrative evolution, but of the political "pressure" of the European Union and was carried out in order to absorb the pre-accession / structural funds of European Union. (2003)

In fact, the economic and social situation as well as the specific legislation have evolved, being created regional operators, as well as inter-community development associations, which represent the association and cooperation between two or more territorial administrative units, within the competences of their deliberative and executive authorities. The inter-community development associations established, have legal personality, are of private law and public utility, in order to jointly carry out development projects of zonal or regional interest or to jointly provide public services. (Law no. 286 / 2006 for the amendment and completion of the Law on local public

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administration No. 215/2001). The establishment of inter-community development associations was followed by the emergence of shareholder operators of member local c.

2.2. The public utilities service in the field of water supply; sewage and sewage treatment, collection, drainage and drainage of rainwater from Romania.

In the context of the presented ones, in the following we make a brief diagnosis of the public water supply and sewerage service in Romania, a benefit included in the sphere of public utilities services, respectively in the framework regulations in the field. The public water supply and sewerage service is established, organized and managed under the leadership, coordination, control and responsibility of the local public administration authorities and aims at water supply, sewage and wastewater treatment for all users in the localities. The deliberative authorities of the administrative-territorial units have exclusive competence, which can also be exercised through the associations of inter-community development with object of activity the water supply and sewerage service, in the name and on behalf of the associated administrative-territorial units, based on the granted mandate. to them, regarding: approval of local strategies for setting up, organizing, managing and operating the water supply and sewerage service; approving the investment programs regarding the establishment, development, modernization and rehabilitation of the technical-commercial infrastructure related to the service; approving the regulations and specifications of the service; adopting the management modality and approving the documentation for organizing and carrying out the procedures for delegating the management; approval of service performance indicators councils and generated regionalization in the field of public utility services.

The authorities of the local public administration are responsible for the implementation of the water supply, sewerage and wastewater treatment systems in the city and for ensuring the conditions for the public water supply and sewerage service to comply with the legal provisions transposing the European Union directives.

The operators have the responsibility regarding the compliance with the quality provisions of the supplied drinking water, respectively of the waste water discharged in the natural receivers, monitoring, informing the consumers, the public health authority and the authorities of the local public administration.

Also, the services of public utilities, organized on economic and efficiency principles, are provided / provided on the basis of the principle "the beneficiary pays" and the recovery of the operating or investment costs is done through prices and regulated tariffs or special taxes. In this sense, the public utility services, set up, organized and coordinated by the authorities of the local public administration, can be provided / provided by the license operators who are organized and operate either under public law or private law regulations.

The public utilities services imply the existence of an adequate technical-urban infrastructure and benefit from the coverage area with local dimensions: communal, city, municipal or county. Considering the history, the origin of the public utilities systems in the field of water channelization, these are goods of public interest and public interest and, by their nature or according to the law, belong to the public or

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private domain of the administrative-territorial units, as they are regulated by Law no. 213/1998 regarding public property goods, as subsequently amended and supplemented.

The public water supply and sewerage service has a strong impact on the health of the population, its standard of living and economic development, which is why Romania, through the Accession Treaty, has assumed important commitments in the water sector. and wastewater for the transposition of Directive 98/83 / EC on drinking water quality5, respectively Directive 91/271 / EC / 19916, as amended and supplemented by Directive 98/15 / EC / 19987 on urban waste water treatment. From a legislative point of view, the provisions of the Romanian normative acts regarding the water sector have been aligned with the acquis communautaire. Following the negotiations for Chapter 22 - Environment, Romania has made a number of firm commitments to make investments in the water and wastewater sector during relatively short transition periods.

Moreover, following the accession negotiations, Romania declared its entire territory as a sensitive area, this aspect implying the obligation that all human agglomerations with more than 10,000 inhabitants be provided with treatment plants with advanced degree of treatment. In this sense, the appropriate strategic direction is represented by the promotion of major regional infrastructure investment projects, doubled by the regionalization of utilities as a key element in improving the quality of services and the efficiency of capital and operating costs. The main results pursued by the promotion of investments in the field of water and wastewater are aimed at achieving the commitments deriving from the European directives on wastewater treatment (Directive 91/271 / EEC) and the quality of water intended for human consumption (Directive 98/83 / EC). sectoral investigation launched by Order No. 82 of 15.02.2017, issued by the President of the Competition Council, on the market of public water supply and sewerage services in the county seat municipalities and the Romanian Intercommunity Development Associations).

In fact, since the pre-accession period to the European Union, the operators of the public utilities services in the field of water and sewerage have deployed significant programs with different sources of financing, such as USAID, or EBRD (state guaranteed credits), or those with non-reimbursable financing, of which we mention, ISPA or SAMTID. Due to the continuous evolution of the economic and social situation, combined with the legislative changes of the period, not least by the appearance of the regional operators and of the associations of inter-community development, the public utilities in the field of drinking water and sewage have registered a significant increase. Thus, in practice, the regional operators of the public water supply and sewerage service, have implemented and finalized investment projects with European funding, as part of the Sectoral Operational Program 2007-2013, and they have in plan for the upcoming period works for public utilities, pertaining to the funds for the Large Infrastructure Operational Programme (LIOP) 2014-2020. Most of the regional operators, in order to ensure the co-financing needed to implement the ISPA, SAMTID and POS Environment programs, have contracted external credits. Taking into consideration the need to continue the investments in the sector of public utilities in the field of water and sewerage in order to reach the objectives assumed by Romania through the Treaty of Accession, as

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well as the fact that, at present, the investments will be oriented towards the rural environment, which implies a decrease of economic efficiency, a new stage is needed in the organization of these services, probably through the fusion / association / cooperation of the regional operators. This need varies from the concrete situation in each area of Romania and is due to the fact that there are regional operators operating in the county in which they have their headquarters, several counties or localities in other counties, or the situation with two or more operators in a county (as the case of Bihor County).

S.C Compania de Apă Oradea SA, having the headquarters located in Oradea str. Duiliu Zamfirescu no. 3, with a social capital of 12.000.800 lei, conducting their operation under the Law 31/1990 republished on commercial companies, Law 51/2006 on community services of public utilities, Law 241/2006 on water supply and sewerage service and GEO 13/2008 on amending and supplementing Law no. 51/2006 and of Law 241/2006.

Starting with 01.07.2009 the company is a regional operator, and other 8 villages in the Metropolitan Area being shareholders. The operator holds a 2 class operating license no. 3551 of 21.01.2016 for the public service of water supply and sewerage in the area of the Crişuri river basin (according to Order no. 22 / 21.01.2016) issued by the National Regulatory Authority for Community Services for Public Utilities. These certificates represent the guarantee for the entire activity according to the requirements of quality, environment, health and occupational safety respecting the recognized standards in the field, for the Integrated Management System.

S.C Compania de Apa Oradea SA, with 120 years of experience in the field of water supply, currently exploits the following capacities: capture - treatment - drinking water pumping stations: 8 stations, of which in Oradea 5 stations with a total capacity of 2,100 l / s capture-treatment-pumping drinking water, transport networks and distribution of water 1,355 km, drinking water pumping stations 142 stations, water connections 51,490 pcs, sewerage networks 762 km, pluvial sewerage networks Sewerage connections 37,024 pcs, pumping stations in the system sewage 131 stations, sewage treatment plants 6 stations. These capabilities make it possible to serve a total number of consumers throughout the operating area as follows:
- water supply 254,983 inhabitants (97.2% of the resident population),
- sewage 214,041 inhabitants (81.6% of the resident population).
For Oradea City, the situation of the users is presented as follows:
- water supply 184,440 inhabitants (99.9% of the resident population),
- sewage 174,792 inhabitants (94.8% of the resident population).

The water company from Oradea is the operator that has implemented projects with external financing sources since the 90s, such as USAID (modernization of Oradea treatment plant), MUDP II (Automation of water plants, modernization of 77 hydropower stations, expansion of water networks drinking water), ISPA (automation of the Oradea treatment plant, rehabilitation of the sewage system on 64 km). After accession, the operator accesses Priority Axis 1 of the Environmental Sector Operational Program 2007-2013, regarding the development of specific investments in the field of drinking water and waste water in Bihor county, by signing the financing contract no. 121230 / 18.04.2011. The project represents a significant step in the general rehabilitation and expansion of the water supply and sewerage infrastructure

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in Bihor County, continuing the investment process carried out through the MUDP and ISPA programs to create regional systems in the water sector.

Phase I, related to the period 2011-2014, had a total value of 83,274.55 thousand euros, of which for the works from Oradea were allocated 35,310.13 thousand euros. Of the total value 76.3% represents Cohesion Funds, 13, 47% State and local budget and 10.23% co-financing provided by the operator through an external credit.

The project includes investments in the treatment and distribution of drinking water as well as the collection and treatment of waste water in the municipalities of Oradea and Beiuș and the towns of Tinca, Sântandrei, Palota, Girișu de Criș, Tărian, Paleu, Săldăbagiu de Munte, Nojorid, Osorhei, Alparea, Alparea.

From the savings realized in the implementation of the project, the Compania de Apă Oradea has started a new phase, with the completion in 2020, by co-financing Cohesion Funds, realizing the extension of the connection rate to the water supply and sewerage services in Oradea and the villages: Nojorid, Osorhei, Sântandrei, Sânmartin, Tinca, Ineu and Copăcel.

Considering the information presented above, regarding the investment effort of the operator and the state and local budget, in the following we present a case study on the Keynesian grounding in the development of public utility services.

3. The Keynesian model of local development

In General Theory, Keynes claims that the total income of an economy was for the short term, determined mainly by the wish to spend for households, companies and the government. The bigger the desire to spend, the larger the volume of sold goods and services, and the higher the sales volumes, thus the increased production, which leads to more people being employed. The economic perspective on which the current economic interventionism is based starts from what we call Keynes "multipliers". The formulas below were presented by the author Boloș M. (2007) in the paper Note de Curs.

$$Y = C + I + G$$ where Y=aggregate income
C=aggregate consumption
I= investments
G= Government expenses

This formula is also called the Keynesian cross equation (the closed economy pattern).

From this Keynesian formula it was established that a variable depends directly on the income, thus become an endogenous variable: consumption. The other options (I, G) are independent of the income, thus being considered exogenous variables.

$$C = C_O + c * Y$$ where 0<c<1 C_O – autonomous consumption (bread, water etc.)
c - the marginal disposition for consumption

$$Y = C_O + C * Y + I + G$$

$$Y = (\frac{1}{1 - c}) (C_O + I + G)$$

The term $\frac{1}{1-c}$ is called Keynesian multiplier.

It is noticed that between the cumulated income Y and the investment I there is the following situation:

$$\Delta Y = \left(\frac{1}{1-c}\right) * \Delta I$$

To sum up, it can be said that multiplication of investments ΔI will include o change in structure (dynamic) for the cumulated incomes, directly to the same extent as the Keynesian multiplier $\frac{1}{1-c}$.

The Investment multiplier

The concept of "multiplier" occupies an important place in Keynesian theory of income and employment. It is an important tool in terms of revenue growth and business cycle analysis. Keynes believed that an initial increase in investment leads to a final increase in investments and thus to a final increase in aggregate income, which Keynes called "Investment Multiplier".

The idea of a multiplier has its origins in an explanation of the favorable effects of investment on labor acquisitions and has become an integral part of Keynesian theory of income and employment. For income analysis Keynes adopted the notion of multiplier, an idea borrowed from R.F. Kahn. The latter sought, through a multiplier, the effect of increased investment on employment.

Keynes turned this into an income multiplier designed to show that a small increase in investment can lead to a much higher income increase.

It is closely related to the concept of marginal propensity to consume and is considered one of Keynes's contributions. In fact, the Keynes investment multiplier is a modification of Kahn's "job multiplier".

Keynes's multiplier is the ratio between the total change in income and the initial change in investment. In other words, the report expresses the quantitative relationship between the increase in national income and the increase in investment that induces income growth.

According to the investment multiplier, an exogenous increase in investment demand also leads to an increase in demand and spending.

Arithmetically, this relation is expressed as follows:

$$Y = k\Delta I$$

where Δ (delta) represents increases or changes, Y for income, k for multiplier and I for investment. Therefore, we obtain k-ΔY / ΔI, meaning k (the multiplier) is equal to the ratio between the increase of the income and the increase of the investment that is responsible for the increase of the income.

4. Use of the Keynesian model at the S.C. Compania de Apa S.A.

Knowing the structure of the units providing water supply services, we proceeded to gather the data needed to implement the Keynesian model. The data were taken from the annual financial statements of the economic agent submitted to the General Administration of Public Finance fom Bihor county. During the analyzed period, the economic agent providing public utility services from Oradea municipality recorded the following economic situation:

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Table 1: Indicators Compania de Apa Oradea expressed in thousands lei

Period	Revenues	Expenditures	Investments
2015	66.552	64.696	127.590
2016	76.281	54.933	87.383
2017	76.028	67.987	47.576
2018	78.693	72.330	31.576

Source: Own processing

The main local indicators taken into consideration, in the present study, refer to the revenues realized from the provision of public utility services, the expenses registered for this purpose and the investments realized in the sphere of public utility services at the level of the Compania de Apa.

In order to apply the equations for the water supply services, as well as to be able to determine the coefficients of the equations, it was necessary for all the data used be homogeneously expressed, respectively in the same measure unit (thousand lei).

The computer function programs were used, in determining the correlation equations, resulting, for the equation of the correlation between consumption and revenue for the period 2015 - 2018, the following data: to establish the marginal propensity to consume (c) the ratio between the variation of expenses (C-Co) and the variation of income (Y-Yo) was calculated, where (C) and (Y) belong to the reference year, and (Co) and (Yo) the previous year, as follows:

$$c = \frac{C - C_0}{Y - Y_0}$$

where :
$$C = C_0 + cY$$

Given the expenditure and revenue data in Table 1 taking into account the calculation ratios presented above, we obtain the values for "c" and "C_0" in Table 2.

Table 2: Values calculated for "c" and "Co"

Period	c	Co
2016	-1,003525361	-131.482,21
2017	-51,59496407	-3.990.630,04
2018	1,628934482	55.856,72

Source: Own processing

From the table it can be seen that "c" representing the marginal propensity to consume does not register positive values when the expenses of the reference year decrease compared to the previous year. Thus, we note that in order to establish the marginal propensity to consume (c) it is necessary for revenues and expenditures to increase proportionately from one period to another. In the present example, only for the period 2017-2018 we can establish a marginal inclination towards consumption, which is equal to 1.6289, a positive value, but which does not fall under the condition $0 < c < 1$. Therefore, for the analyzed period 2017-2018, the marginal propensity to consume does not meet a favorable situation.

Substituting the values of "c" and "Co" in Table 2 in the relation
$$C = C_0 + cY$$
we obtain the consumption functions for each period, as follows:
C2016 = -1.003525361Y -131,482.21
C2017 = -51,59496407Y -3,990,630.04
C2018 = 1.628934482Y +55.856.72
Schematically, the variation of "c" in the analyzed period can be followed in Figure 1.

Figure 1: Evolution of the marginal propensity to consume
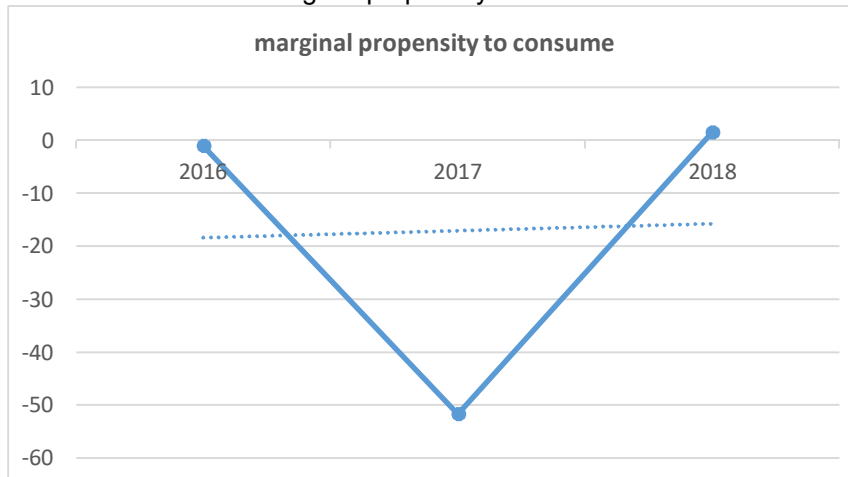
Source: Own processing

In the economic sense, investments are the whole of the expenditure oriented towards the acquisition of capital goods. Unlike consumer goods, capital goods do not directly meet the needs of end-users but lead to the development of public utilities and its specific infrastructure, implicitly in fulfilling the eligibility conditions imposed by EU funding programs.
In the case of Compania de Apa, the investments for the period 2017-2018 are presented as follows:

Table 3: Statement of investments of the Compania de Apa

Period	Own sources	Local Budget	State Budget	Cohesion Fund	EBRD financing	TOTAL
2015	11.788	4.681	33.455	77.666		127.590
2016	20.024	2.154	11.178	28.268	25.759	87.383
2017	14.188	981	7.986	20.109	4.312	47.576
2018	19.897	557	2.901	7.249	972	31.576

Source: Own processing

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In order to highlight the effect of the capital increase at the Compania de Apa, we consider it necessary to study the relationship between the increase of the income level and the increase of investments ΔI.

In this context, when increasing investments in by ΔI, income Y will increase with kΔI, so

$$Y = k\Delta I$$

and knowing that, k = 1 / s, and by replacing it in the relation, we obtain

$$\Delta Y = \frac{1}{s} * \Delta I$$

The determination of the local investment multiplier depends on the marginal quota for saving, depending on the marginal inclination towards consumption, a variable whose evolution can be traced in Table 4.

Table 4: Evolution of the local investment multiplier

Period	c	s=1-c	k=1/s	ΔY=ΔI/s
2016	-1,003525361	2,003525361	0,49912021	43614,62
2017	-51,59496407	52,59496407	0,019013227	904,57
2018	1,628934482	-0,628934	-1,5899907	-50205,55

Source: Own processing

Analyzing the evolution of the local multiplier of investments at the level of the Compania de Apa from Table 4 we observe that the stimulation of the economic activity, therefore the effect of the local development, appears in 2016 and 2017, otherwise the consumption remains the economic phenomenon that dominates the economy of the water services operators.

The study presented in Table 4 confirms the theory according to which the value of the multiplier is much higher as the marginal propensity to consume is lower or the marginal propensity to save is higher.

5. In conclusion

The operators' responsibility regarding the compliance with the provisions of the extension of services and implicitly of the specific infrastructure, not least the improvement of the quality of the drinking water leads to the necessity of continuous investments, but after analyzing the evolution of the investment multiplier it was found that the activity of the local supplier of public services, is oriented towards consumption and not saving. Given the fact that an increase in consumption in the end has the effect of obtaining profit for the operator, which returns as its own source of financing investments in the water and sewerage system, we can conclude that the consumption orientation is beneficial both from the point of view of the satisfaction of the end users as well as from the point of view of the operator, regarding the increase of the revenues and the analysis of the business cycle. Therefore, the Keynesian hypothesis is verified, according to which an initial increase of investments leads to a final growth of them and implicitly to a final growth

of the investment multiplier. Extension investments in the field of water and sewerage services have a direct effect on increasing the number of users, but also on increasing the number of operator's employees.

In order to verify the conclusions of the present research, in the future, we intend to conduct a comparative study with other regional operators and extend the study period for several years.

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CONTROLLING TOOLS FOR DECISION-MAKING IN MICRO, SMALL AND MEDIUM-SIZED ENTERPRISES

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Abstract: *Corporate executives need information that can help make a business more stable and at the same time a career path for a business. All this is ensured by the controlling information system of the company, which by its actuality can give the managers the greatest help in the decision-making processes. Entrepreneurs, especially in micro-small businesses, generally rate their business success with a cash flow approach, which is indeed one of the most fundamental valuation options, especially for the past and present, but for example, they do not hear about their possibility to analize the different levels of solvency, so they are merely confronted with whether their liquidity is OK or not. Of course, a manager of a small business is not expected to have a higher level of financial-income analysis capability, but to be aware of the short-term liquidity factors of his business processes is already in his own interest, and long-term planning and analytical expectations were not mentioned yet. What should a manager know about the assets, financial and income situation of his business? Theoretically they should know all, practically there are basically two areas of knowledge required: operational and strategic, which presuppose each other, so the entrepreneur needs to know the strategic goals and the path to it through well-organized and economically supported operational steps. Controlling helps in this, whose financial dimension provides practical and useful knowledge for business planning and analysis, and ultimately for corporate decision-making. The practical implementation of these was illustrated by the knowledge of the liquidity indicators examined by the 80 companies and their subjective evaluation by managers, the actual practice of planning processes, the planning of the existence of costing systems partly by company size and partly by business forms. Due to the uniqueness and relatively small number of the enterprises involved in the study, generalizable relationships cannot be identified, but the analysis provides a visual picture of the application of controlling tools and methods to organizations in rural, mostly micro, small and medium-sized enterprises.*

Keywords: *controlling; MSME's; managerial financial attitude and knowledge; planning characteristics; cost calculation.*

JEL Classification: *D70; D81; D83.*

1. Introduction

It is in the interest of every business to have stable operating processes and planned development. In many cases, market upturn can mean a significant increase in the revenue and earnings ratio of a business, and it is the responsibility of managers to

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maintain the trend and ensure a favorable short-term condition at the strategic planning level.

Business executives have many tools and methods to monitor, quantify, analyze and evaluate past business processes and use these results to make informed future decisions. Most of the activities used in corporate governance processes are related to the controlling area, ie planning, analysis and information flow account for most of the overall management tasks. The question is, do managers know these tools, and if they do, do they apply them in the management of their company? The large number of enterprises, especially in the case of micro, small and medium-sized enterprises, predicts that many managers have the professional knowledge directly related to their activity, but not necessarily the management and economical knowledge. I write knowledge intentionally, because the approach to management should be the hallmark of every entrepreneur, but in many cases it lacks the knowledge, that would help the manager to sustain and expect the growth of his or her business.

A perfect knowledge of past processes and the data derived from them is a prerequisite for enterprise planning, as it is able to make informed decisions with less risk.

2. Background - Controlling Tools - Financial Indicators in Entrepreneurs' Decision-Making Processes

Most business analysis literature, general or specific, attempts to identify asset-finance-to-income ratios that are worth calculating and analyzing for a given problem. The research, whether from within the company or from outside experts, provides excellent and useful results that conscious leaders use to prepare their decisions.

Business leaders strive for stability and, at the same time, for growth, with the least risk to the business and its results. In the judgment of management, risk is a subjective concept. According to many managers, a company or organization really only transmits the risk. There is no uniformly accepted definition of risk, and there are many examples of how to interpret it. (Bárczi-Szabó-Zéman, 2014)

• The risk arises from the difference between the expected and the actual reality. In other words, risk refers to the uncertainty of how much money invested increases or decreases relative to the time the investment is completed. (Brealey-Myers, 2005., Borszéki, 2006. in Bárczi-Szabó-Zéman, 2014).

• Risk is the probability of an event occurring that affects the achievement of the company's strategic objectives. (Galambos-Fekete, 2005 in Bárczi-Szabó-Zéman, 2014).

• An event that, if it occurs or does not occur, affects the potential achievement of the organisation's goals. (Janza, 2005 in Bárczi-Szabó-Zéman, 2014).

• Assuming a normal distribution, the expected return equals the average of past returns and the risk equals the standard deviation.

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• Market participants have the risk that, from the moment they make their business decisions to the moment they are fulfilled, market conditions may or may not move in the opposite direction.

Analyzes of SMEs by Kadocsa (2017) and his colleagues showed that controlling appeared in only 20% of the companies they surveyed - however, this did not mean the creation of an independent controller or controlling organization in this proportion. Planning -as a function of controlling- has already been used to a greater extent: 37% had a documented strategic plan and 46% a business plan.

In their opinion, the cornerstone of the competitiveness of the domestic SME sector is the cost efficiency and the productivity. The controlling system has been proven worldwide in the development of cost-effectiveness, it has become widely used in large companies and has become a useful and indispensable tool for management. It also identified areas for improvement in business efficiency, where the top three are cost management, sales / marketing and sales restructuring based on managers' views. All three areas require corporate controlling activities, especially cost management, which can truly increase the efficiency of the business by accurately determining cost and developing additional cost and pricing plans based on them.

Analyzing the importance of financial planning, Tóth et al. (2017) concluded that investment processes should be managed together with financing processes. Financial planning is a very complex operation, as owners need to consider the effects of any economic decision, with the aim of influencing the financial position of the business by providing resources and efficiently allocating resources. Financial planning is, therefore, a process of creating a state of equilibrium which is intended to ensure the solvency of a business in the short, medium and long term through its financial management activities.

Szőrös and Kresalek (2013) classify financial planning as one of the indispensable activities for businesses, which outlines the company's future financial goals, the main lines of its financing strategy, and, beyond that, provides information to future external and internal stakeholders about consciously designed future actions - inter alia, the effects of the business on its financial, financial and profitability position. Regardless of company size and scope of activities, it is expedient and reasonable to integrate financial planning practices into daily operations, as well as sound and reliable accounting (financial and management accounting) information, company records and statistical reporting, etc. One of the most effective tools for building investor, creditor, and shareholder confidence in the company, is a part of the company's communication. Financial planning seeks to optimize the financial processes related to operations and investments, and to assess financial needs and plan the necessary resources for financing decisions.

Financial planning is a long and time-consuming process which, especially for SMEs, is often not done by small-scale management, but they also need quick financial indicators to make the right decisions.

The most common and perhaps most useful financial indicators come from the liquidity analyzes, which are relatively easy to produce within a company, even for micro and small businesses.

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Fenyves (2013), by analyzing three types of liquidity ratios and their corrected versions, showed the differences that occurred due to the turnover rate of current assets (eg inventories and receivables) or current liabilities (eg suppliers, other current liabilities). Adjusting the liquidity ratio in this way gives a much more accurate picture of the actual solvency, as it is not only the frequency of the payment obligation and the regularity of the receipt of the current asset item.

A similar, easily quantifiable indicator of solvency is working capital and its netting, as defined by Tarnóczi and Fenyves (2011). Working capital (gross working capital, by definition) is the part of an enterprise's assets that is embodied in cash, receivables, inventories and other current assets, and net working capital is the difference between an enterprise's current assets and its current liabilities.

Both indicators can provide reliable information on the current and expected state of solvency and greatly help the entrepreneur in future purchasing decisions, reducing the risk of his decision.

The decisions made by the managers of the enterprises are expected to be professionally and economically accurate and reliable, thus ensuring the stability of the enterprise and the minimization of the risk of the activity, which at the same time carries the opportunity for development and growth. But what is the real practice? To what extent do managers know how to make decisions in this approach, and what importance do they attach to management plans and financial indicators? These questions are answered in the next chapter of the study.

3. Controlling processes in corporate practice

The controlling processes of a company - if only based on planning - can be very diverse: production, sales, HR, finance, investment, R&D, etc. fit into areas. In many cases, the confusion of abundance is what needs to be resolved when designing an enterprise information system, and striving for a scalable system that can effectively process the information it provides and truly help enterprise decision-making.

The use of controlling as a management methodology is still not a widespread tool for businesses, especially for SME's, although it has a clear role to play in reducing operational risks.

My recent analysis is a continuation of several years of research based on 2018 data collection. Within the framework of questionnaire processing, I surveyed the design and business management characteristics of a total of 80, mostly micro, small and medium-sized enterprises. A large proportion of entrepreneurs seek to reduce the risk of their activities, using several of the methods they are familiar with, but which are little used on their own firm. Decision support activities can be fully integrated with the "controlling" approach and methods that are still alien to many business executives, the implementation and implementation of which could produce tangible results for business decision makers in a relatively short period of time. The study will explore the practices and relationships between the size, profile, activity, financial process characteristics, liquidity, planning characteristics and costing of the SMEs being examined between the size of the business and the controlling tools used.

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The questionnaire surveyed the location of the enterprise (possibly its headquarters) by county, its size (based on its own concept and actually classified), the existence of management expertise for the activity, the characteristics of the financial structure, the assessment of the liquidity situation One group of questions addressed the controlling features of businesses: planning, analysis, management and information processes, followed by cost estimates and cost allocations, which remain a weak link in the management of micro-small and medium-sized enterprises (SMEs).

The location of the 80 enterprises surveyed by counties is shown in Figure 1., from which it can be seen that the controlling characteristics of the enterprises of Jász-Nagykun-Szolnok and Hajdú-Bihar county are mainly presented.
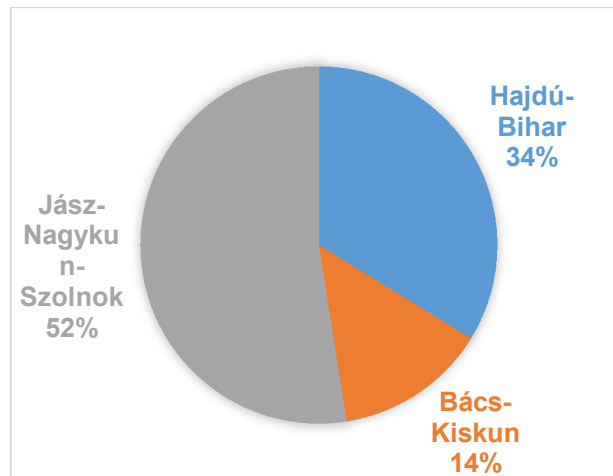
Figure 1: Proportion of enterprises surveyed by counties
Source: based on own data collection

Limited liability companies (47) dominate the distribution of companies in the form of companies, of which 9 were sole proprietorships, 11 were former companies and 14 were public limited companies.

Figure 2 shows the proportions of enterprises form by counties.

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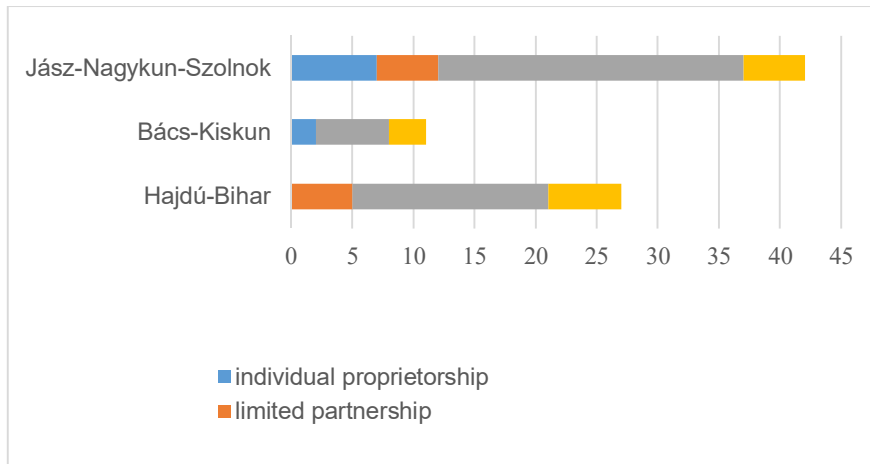
Figure 2: The proportions of enterprises form by counties
Source: based on own data collection

Figure 3 illustrates the distribution of business managers by educational level. One individual proprietor has a basic qualification and the majority of the managers are professionally qualified at higher level, while the managers of the 14 joint-stock companies have all an university degree, it goes without saying.
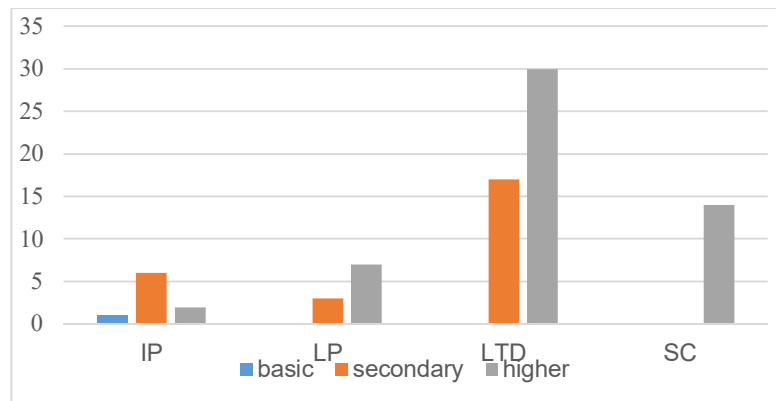
Figure 3: Distribution of managers of enterprises by qualification, pcs
Source: based on own data collection

Figure 4 shows the grouping of enterprises by activity. Catering appeared within the services, meat processing industry dominated within the food industry. Most of the services and commercial activities were carried out in the LTD, while the sole proprietorships were primarily commercial activities in examined enterprises.

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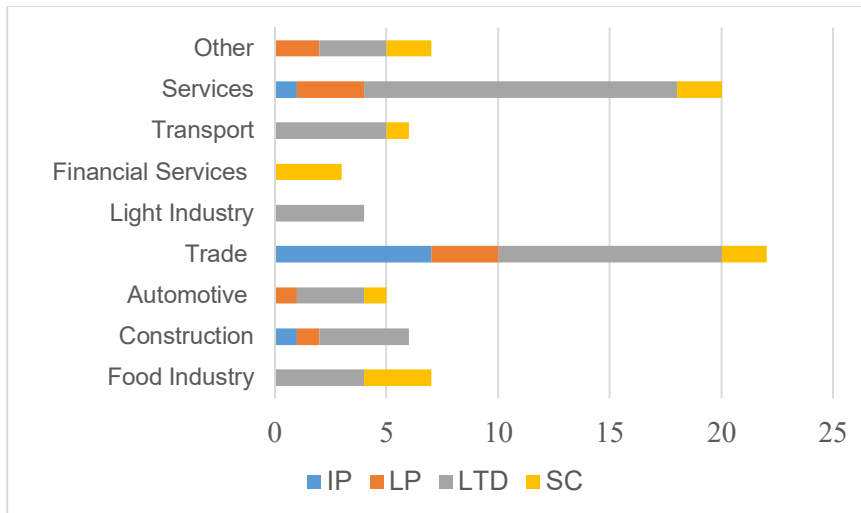
Figure 4: Grouping of enterprises by activity, pcs
Source: based on own data collection

During the survey, I was interested in how business executives judge the size of their business (categorized only by headcount), and I compare this to the disclosure of real full-time employees.

Looking for the reasons for the differences, it can be stated that companies operating in smaller settlements value themselves as "bigger", as they can indeed play a bigger role in the employment of other enterprises in the settlement. Thirty-three were classified as micro-businesses, but three of these companies outnumbered 9 employees. 17 entrepreneurs considered themselves to be small entrepreneurs, of which 10 were between 10 and 49. There were 18 mid-sized companies, out of which only 6 could be included in this category. Only 9 out of the 12 who qualified as a large company had more than 250 employees, so here too the manager's estimate was higher. Looking for the reasons for the differences, it can be stated that companies operating in smaller settlements value themselves as "bigger", as they can indeed play a bigger role in the employment of other enterprises in the settlement (Figure 5.)
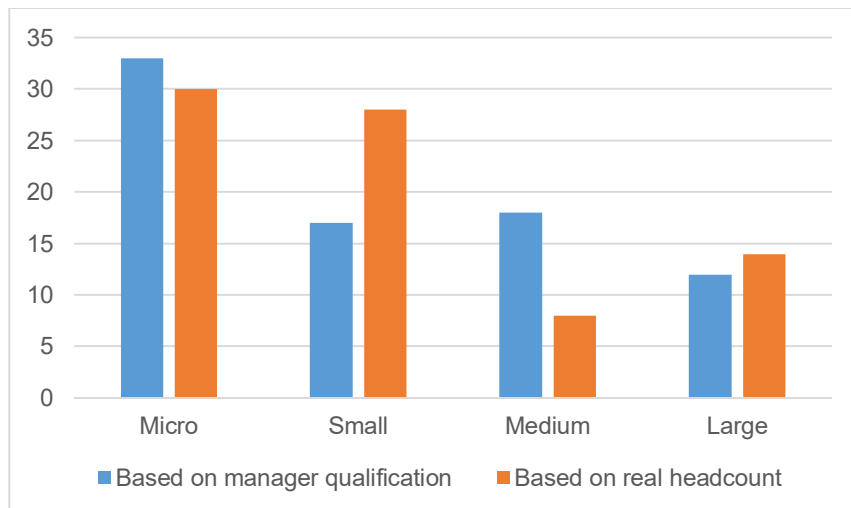
Figure 5: Businesses by size category (full-time worker/firm) , pcs
Source: based on own data collection

Following the general presentation of the companies, an analysis of the liquidity follows, partly from the manager of the company and partly from the author's professional statement.

For liquidity, I collected information indirectly through quantitative data, specifying the structure of assets, from which I determined net working capital (= current assets-current liabilities), and asked the manager of the company for information directly, regardless of how well he or she evaulates actual professional content. This was complemented by the qualitative question of liquidity, which asked about the occurrence of liquidity problems and their causes.

From the 80 companies 14 executives couldn't understand the question of net working capital, so they didn't answer it, and more than half of them were micro-entrepreneurs, most of them with higher education. From the financial statement it was possible to calculate the net working capital for the year 2017 in 65 cases, which I compared with the figures estimated by the managers.

Based on these, I made two comparisons:

1. I showed the net working capital data (classified into positive and negative ranges) provided by the companies by business size category and compared them with the liquidity problems reported by the entrepreneur,

2. I have determined the difference between the real calculated and reported net working capital values of managers, looking for whether a more accurate estimate may depend on the manager's qualifications.

In the first comparison 6 entrepreneurs reported negative working capital, of which 5 indicated liquidity problems. Most of the solvency failures were traced back to the obligation to pay down investment loans and only two entrepreneurs indicated a delay in the receipt of claims. Negative working capital was shown by 2 micro, 3 medium and one large company.

Positive net working capital was reported by 60 entrepreneurs, 28 of which indicated that they already had liquidity problems during operation. Most of the causes of the problems were traced back to two factors: repayment of large amounts of investment loans and lack of payment due to buyers (Figure 6).
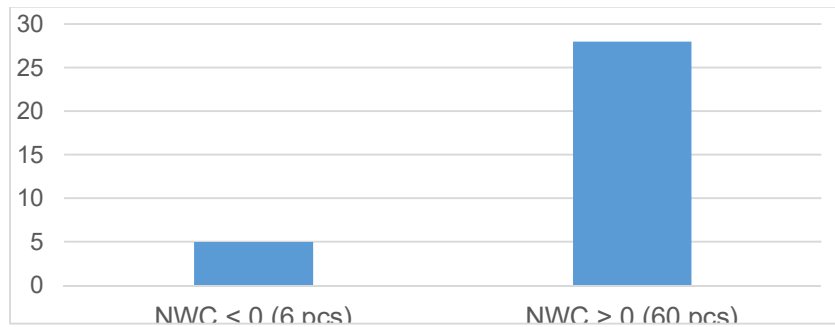
Figure 6. Number of liquidity shortfalls in relation to reported net working capital pcs
Source: based on own data collection

It can be stated that liquidity disruptions have also occurred in companies with currently positive net working capital, but disciplined financial management, disinvestment, strict debt management and, in particular, commercial and business cycle regulation, all contributed to liquidity.

In the second study, I distinguished three categories with respect to the difference between the reported and calculated net working capital: 1. the reported value was above the calculated figure, 2. the difference was minimal, ie (relatively) accurate the reported data, 3. underestimated was the net working capital, ie the company has a higher liquidity potential than the manager thinks it. Based on these, Figure 7. summarizes the characteristics of the companies analysed (Figure 7):
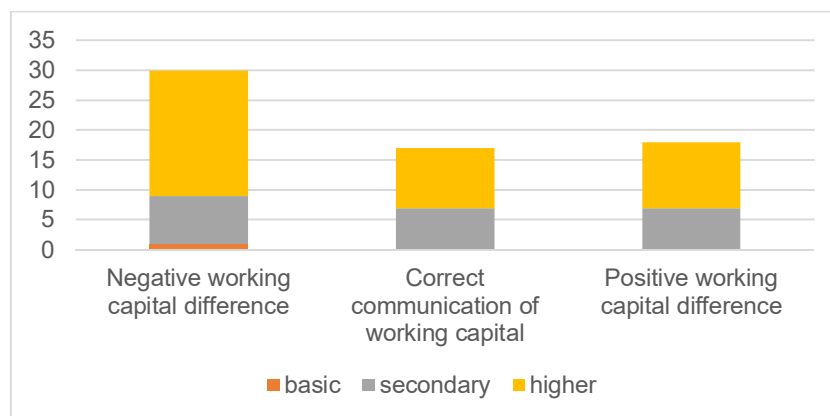
Figure 7: Differences in net working capital reported and calculated by level of education of manager, pcs
Source: based on own data collection

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The figure does not make it clear that higher graduates have a more precise definition of working capital, or even more optimistic, which can lead them to make bad decisions.

I think it is important that in order to make a realistic assessment of liquidity, decision-makers and managers of companies of any level have to know and apply these indicators, which require up-to-date knowledge of their financial situation and a well-controlled information system can ensure this for every company size.

A prerequisite for sound decision-making is the planning practice, based in partly on historical data and partly on current information, which has of particular importance in the financial field. The questionnaire gave a detailed survey of the business plan and its parts preparation practice, from which I now highlight the business plans made during the start-up and continuous operation of the business according to the forms of the business.

Figure 8 shows that most businesses do not have a business plan at the start of their business, but later have a business plan, usually related to borrowing.
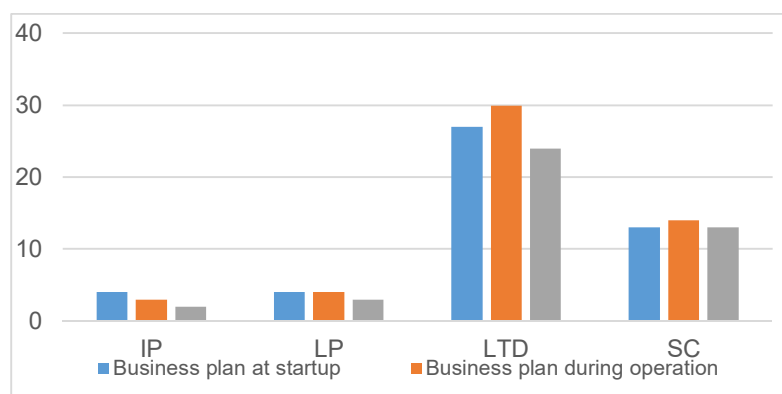
Figure 8: Existence of a business plan during the start-up and operating phases of the business, pcs
Source: based on own data collection

22 companies did not have a business plan at the start-up or during their operation, 19 of which were micro enterprises, operating in the form of sole proprietorship, limited partnership (LP) and limited liability company (LTD) mainly engaged in commercial and service activities. Unfortunately, these businesses are not missing out on planning and are thus abandoning a visionary strategic process that is able to sustain the interests of the internal stakeholders of the business on a lasting basis. One of the most important elements of the controlling activity of companies and the decision-making process is the provision of up-to-date information. 72 of the 80 companies have an IT-based information system, and where there are none, they are micro-businesses with 1-2 employees (except for a garment company where 45 seamstresses work and the manager has classified the company as a micro-enterprise).

One of the main areas of corporate decision making is cost management. At present, the focus is not on cost minimization but on cost efficiency, which requires comparisons within the company, between businesses and within the sector. An important element of cost management is cost calculation, which can be made as simple as first glance, as complex as it can be if excessive expectations (= total cost allocation) are involved. 59% of the businesses make consciously cost calculation, not only because of their obligation under the Accounting Act, but also for cost efficiency, realistic pricing and profit planning.

Of the 29 companies that do not have a real cost estimate, 15 plan to implement the system to achieve the goals mentioned above, and those who do not deal with it do not plan to calculate unit costs primarily due to the difficulty of measuring the cost of their service processes.

Most companies, which make cost calculation, use simple or supplemental divisor calculations, but using more modern procedures such as e.g. Activity Based Costing is not even mentioned by the big companies.

4. Conclusion

Entrepreneurs always need accurate information for their decision-making processes, which can be collected partly through continuous monitoring of the company's internal processes and partly from the external environment. Controlling can provide the information the managers need to make production, sales, and economic decisions through planning and analyzing their internal business processes. The companies involved in the analysis are characterized by different types of controlling processes due to differences in the size of the company and the qualifications of the manager. Despite the high level of education of several managers, they are not aware of the importance of controlling planning, analysis and information processes, but companies that use them consciously are less likely to experience liquidity problems. In conclusion, especially in the case of micro, small and medium-sized enterprises, the use of controlling tools is not yet common practice in establishing corporate decision-making processes.

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THE IMPACT OF THE COVID-19 CRISIS ON PUBLIC FINANCES COMPARED TO THE PREVIOUS CRISIS

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Abstract: *The start of a crisis, whether it is a financial, health, or any other crisis, is a negative macroeconomic phenomenon, with consequences for both the entire world and the European Union. The coronavirus epidemic manifested itself in European countries in the spring of 2020, leading to the emergence of economic imbalances amid slowing and shrinking economic activity. The measures taken by European states are unprecedented compared to those adopted in the previous crisis, ranging from financial support to individuals and legal entities, deferral of taxes and other debts, legislative changes, and the acceptance of work from home in more and more branches activity, which until this period was not possible. This paper aims to study and analyze the evolution of public debt and budget deficit in the European Union, but also the measures taken by the Member States in the context of COVID-19 compared to those during the financial crisis in 2009. In addition to this analysis, in this paper, I intend to identify the growth rate of public debt in the Member States in 2009/2008 compared to 2020/2019. To compile this paper, I will use statistical data taken from the Eurostat website on public debt and budget deficit, but also data taken from the European Commission`s AMECO database, section "Economic and Financial Affairs" which includes forecasts on public debt for the year 2020. Regarding the research method used, it consists of both descriptive analysis, dynamic macroeconomic analysis using graphs, and comparative analysis according to the objectives pursued throughout the research. Comparing with the way the information is presented in the bibliography used and found at the end of the paper, in this paper are found only the essential aspects, the particularities of the chosen research topic, which finally provides the overview.*

Keywords: *crisis; public debt; budget deficit; Covid-19; measures; evolution.*

JEL Classification: *H12; H30; H62; H63.*

1. Introduction

The onset of the 2008 financial crisis, as well as the current health crisis, had a strong effect on public finances, more precisely by restricting economic activity which led to a decrease in revenues and an increase in public spending, respectively to a considerable increase in the public deficit and debt.

The financial crisis of 2008 had a strong impact on the European Union and implicitly on the Member States and subsequently led to a slow and long-lasting recovery. The spread of the financial crisis in 2008 was achieved through credit channels and foreign trade, leading to a sharp increase in foreign capital outflows and declining exports, which subsequently led to a widening of macroeconomic imbalances. All

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these unfavorable situations have severely affected European countries with a lower level of development, which subsequently led to economic imbalances and the accumulation of a high level of debt. This paper aims to study and analyze the evolution of public debt and budget deficit in the European Union, but also of the measures taken by European states in the context of the financial crisis of 2008 and the current health crisis generated by COVID-19.

This paper is structured in five distinct parts, as follows: (i) the first part includes the introduction, (ii) in the second part the level of knowledge, (iii) in the third part the research methodology, (iv) in the fourth part the analysis of public debt and deficit, the increase of public debt 2009/2008 and 2020/2019 for two categories of countries, the most affected and the least affected, but also a comparative analysis of the similarities and differences regarding the measures taken by the authorities in response to the financial crisis from 2008 compared to the current health crisis from 2020, (v) and the last part contains the conclusions.

2. The level of knowledge

This paper started from the consultation of several bibliographic references relevant to the research area, with a significant impact on it.

The rise of a global or regional crisis is a recurring phenomenon and we need to learn how to build new market regulation reforms so that we can mitigate repeated occurrences. (Ellert, 2019).

One of the distinguishing features of the financial crisis of 2008 is the sudden collapse of global credit as a result of the cessation of interbank lending amid uncertainty and exposure to high debt. (Roubini și Mihm, 2010).

The outbreak of the COVID-19 pandemic has created many challenges at the global and European level, leading to the adoption of large-scale fiscal measures due to decisions to increase public spending and the granting of several tax exemptions to both individuals and companies during an unfavorable economic situation. Even if this new health crisis generated by COVID-19 disappears, its effects will be felt in the long run, because many states will face high debts due to the promotion of permissive fiscal policy. (NBER, 2020).

3. The research methodology

This paper is based on a mixed methodology, as it includes both the method of descriptive analysis, used to achieve the stage of knowledge, and a dynamic macroeconomic analysis used to perform the analysis of public debt and budget deficit, which are highlighted in the form of time series, more exactly the graphics. This paper also includes a comparative analysis of the measures taken by the authorities at the level of the European Union according to the economic context, focusing on the onset of the financial crisis of 2008 and the current crisis, generated by COVID-19.

To realize this paper I used the database taken from the Eurostat website on public debt and the budget deficit in the European Union and the Member States, for the period between 2008q1-2009q4 and 2019q1-2020q2, but also the AMECO

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database of the European Commission for the forecasts regarding the public debt from 2020.

4. Evolution of public finances

Public debt and the budget deficit are two of the nominal convergence criteria that assume that the debt should not exceed 60% of GDP, and the deficit 3% of GDP to ensure the sustainability of public finances, according to the provisions of the Maastricht Treaty. In the period 2008q1-2009q4 according to Chart 2, the level of public debt registered an upward trend as a result of the measures adopted by the authorities at the level of European states, which mainly aimed at increasing consumption and public spending, contracting new loans to cover debt financing needs and the budget deficit, a much lower production capacity compared to the level of investment. At the level of many European countries, there has been a slowdown in public debt growth after this period amid measures taken by the authorities, which aimed mainly at recovering the economy and fostering economic growth by closing the gap between the Member States, as shown in Chart 1. The major deepening of the public deficit in 2008-2009, but also in 2010, is mainly due to the overheating of the economy of several European states amid net inflows of other investments, which were in the form of external loans requested by both the banking sector and the non-banking sector. This situation has led to a significant deterioration of the net international investment position in more and more European countries, which have subsequently faced several significant economic problems.

Regarding the period 2019q1-2020q2, we can see the trend of improvement of public finances in 2019 at the level of the European Union as a result of the measures taken by the authorities, which focused mainly on the implementation of structural reforms, efficient management of investment and the promotion of responsible fiscal policies. Actions taken at the European level have also contributed to this favorable situation, including the Investment Plan for the European Union, which has significantly influenced stability and prosperity. However, the onset of the current health crisis has led to a reduction in activity and thus a deterioration of public finances in the first months of 2020, amid declining budget revenues as a result of a delayed payment of more tax obligations due by economic agents, increasing investment spending and subsidies, which subsequently led to an increase in debt and a budget deficit.

The public deficit registered a downward trend, in the sense of reducing it, in 2019 compared to 2020 in the context of registering a favorable economic situation in most European countries. Romania is an exception to this situation, as it recorded a high level of the public deficit, which led to the launch of the excessive deficit procedure in April 2020 amid the promotion of a relaxed fiscal policy in the context of improving macroeconomic indicators. In 2020, the deficit increased significantly due to the increase of public expenditures and the contracting of new loans in the context of the onset of the health crisis generated by COVID-19.

In this situation, European states are facing a series of new challenges amid the pandemic that has led to the introduction of measures of isolation and stopping economic activity in several industries, which will ultimately materialize in much

lower revenues and much higher government spending. Also, the severity of the COVID-19 crisis can be measured by declining production, the number of deaths, rising unemployment and poverty, declining incomes, and rising spending on social assistance. To meet these new challenges, the authorities have resorted to a series of loans to cover social protection expenditure and other expenses.
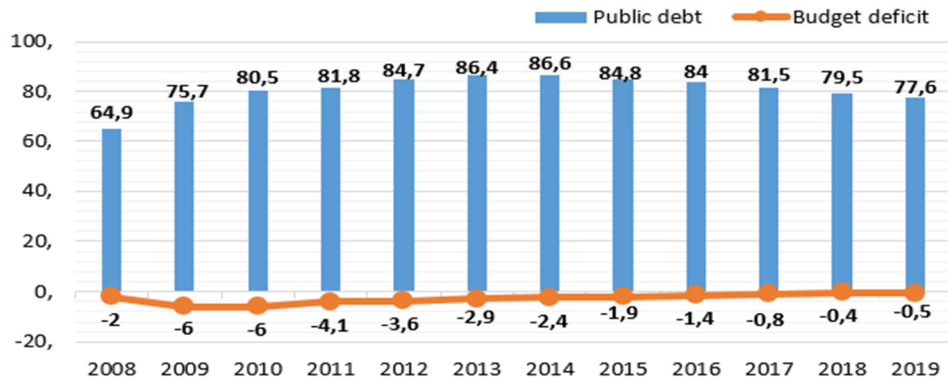
Figure 1: The evolution of public debt and Budget deficit in EU (%GDP annual)
Source: Eurostat, https://ec.europa.eu/eurostat/web/covid-19/economy#
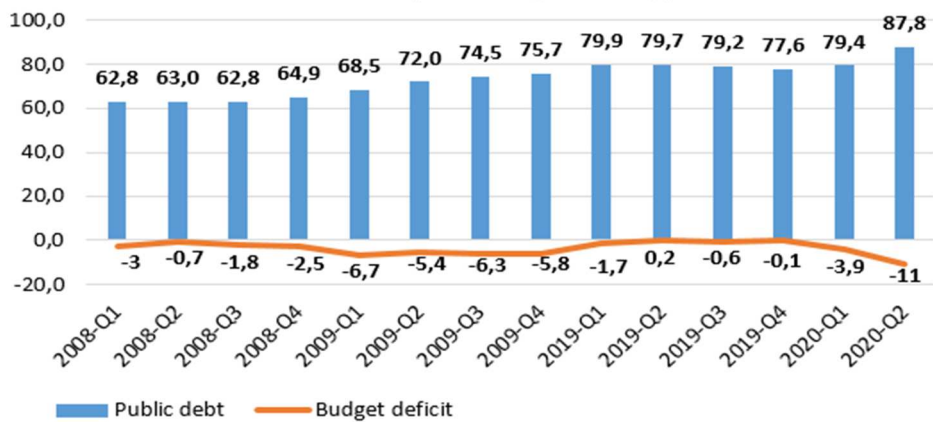
Figure 2: The evolution of public debt and Budget deficit in EU (%GDP quarterly)
Source: Eurostat, https://ec.europa.eu/eurostat/web/covid-19/economy#

Thus, the growing need of the governments for financial resources in recent times will lead to rising deficits and debt to finance short-term activity. All these actions taken during this period to alleviate the economic costs of the recession and to form the first line of defense against debt sustainability concerns will lead to a stronger and longer-lasting recession that may lead to medium-term debt sustainability risks.

4.1. Increase of public debt 2009/2008 and 2020/2019 for two categories of countries, the most affected and the least affected

The determination of the growth rate of the public debt from 2020/2019, respectively 2009/2008 was made based on the forecasts found in the AMECO database of the European Commission, section "Economic and Financial Affairs". The increase in public debt in the European Union in 2009/2008 and 2020/2019 can be seen in Chart 3 below. Following the analysis, it can be seen how a large part of European countries that recorded an increased rate of public debt in 2009/2008 managed to register a much lower rate in the period 2020/2019. Following the economic crisis of 2008, the European economy showed signs of recovery due to the strategic and effective measures adopted, and their coordination in the context of the "European Economic Recovery Plan" had the ability to avoid financial collapse and loss of confidence. However, against the background of high uncertainty and the existence of risk between the real economy and the financial sector, many European countries have faced economic losses and a high level of public debt over a longer period of time.

At the same time, the orientation of budgetary policies towards removing the economy from recession, together with the granting of discretionary fiscal incentives, have led to the improvement of the economy and the deterioration of public finances. Thus, registering a growth rate of the public debt of 16.54% in 2009/2008 (public debt was 64.94% in 2008 compared to 75.68% in 2009).

The European Union countries with the lowest public debt growth rate in 2009/2008 are the Netherlands (3.8%), Bulgaria (4.9%), and Luxembourg (5%). , 1%), Poland (6.6%), Belgium (7.6%), Malta (8.1%), Sweden (8.5%), Hungary (8.9%) and Italy (9.8) %), the rest of the European states registering a growth rate of over 10%. The most affected European countries according to the public debt growth rate in 2009/2008 were Latvia (98.2%), Lithuania (91.9%), Romania (76.6%), Estonia (59.8%), Slovenia (58.5%), Ireland (45.1%) and Spain (34.1%), while the rest of the European countries recorded a growth rate of less than 30%. Regarding the European countries least affected in terms of the public debt growth rate of 2020/2019, these include Greece (11.2%), Portugal (11.7%), Austria (12%), Ireland (13.1%), and Hungary (13.1%), while the other European countries recorded a growth rate of over 15%.

The European countries that will face a major public debt growth rate in 2020/2019 according to AMECO forecasts are Estonia (146%), Denmark (34.6%), Lithuania (33.7%), and Romania (31%), while the rest of the European countries will register a growth rate of less than 30%. However, there are European states that recorded a high rate of increase in public debt in 2009/2008, and in 2020/2019 will manage to record a much lower rate compared to other European states that before this period had much better results.

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Among these states are Latvia (16.8% in 2020/2019 compared to 98.2% in 2009/2008), Lithuania (33.7% in 2020/2019 compared to 91.9% in 2009/2008), Romania (31% in 2020/2019 compared to 76.6% in 2009/2008) and Slovenia (26.6% in 2020/2019 compared to 58.5% in 2009/2008). Among the countries most affected by the public debt growth rate will be Estonia (146.3% in 2020/2019 compared to 59.8% in 2009/2008), the Netherlands (27.8% in 2020/2019 compared to 3, 8% in 2009/2008), Bulgaria (25.2% in 2020/2019 compared to 4.9% in 2009/2008), Poland (27.2% in 2020/2019 compared to 6.6% in 2009 / 2008) and Germany (26.6% in 2020/2019 compared to 11.4% in 2009/2008).

This unfavorable situation in 2020 occurred amid rising budget deficits as a result of rising public spending and declining government revenues. A significant impact on this negative situation was given by the onset of the health crisis generated by COVID-19, which led to a major increase in the indebtedness of European countries, but also of other non-European states. In this context, increasing public debt can be an obstacle to a sustainable and sustained recovery in economic growth.
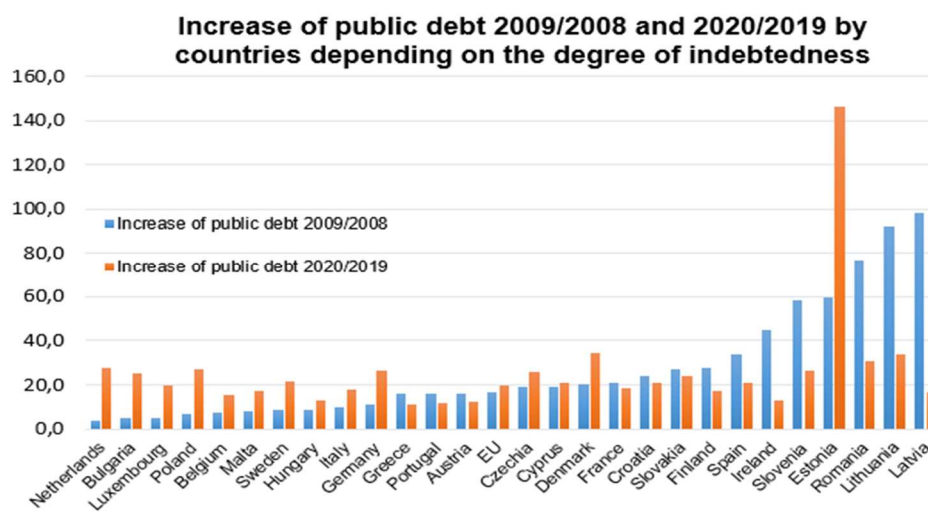
Figure 3: Increase of public debt 2009/2008 and 2020/2019 for two categories of countries, the most affected and the least affected
Source: European Commission, Economic and Financial Affairs, https://ec.europa.eu/economy_finance/ameco/user/serie/SelectSerie.cfm

4.2. Similarities / differences from the previous crisis
The main difference between the current health crisis from the previous financial crisis is the cause that determined it. Specifically, the financial crisis of 2008 arose due to a lack of regulation and supervision, which led to the existence of unfavorable financial management. Thus, a financial crisis was created which subsequently led to the onset of an economic crisis, and its intensity was reduced with the help of measures taken by central banks and governments. As for the current crisis, it did

not arise due to the economic context, but against the background of the COVID-19 pandemic. This leads to a paradigm shift and many new challenges and uncertainties. However, even if the cause of the two crises is different, both have significantly affected public finances and the economy.

There are also other differences between the two crises, including the existence of more capitalized and robust financial systems in the developed countries, a prudent fiscal policy in the European Union that has led to lower deficits and public debt over time. Moreover, a large part of the European states registered a downward trend of debt and budget deficit until the onset of the COVID-19 pandemic, which means the recovery of previous losses.

Another difference between the two crises is the speed of spread, as the crisis of 2008 gradually began in the US and later in Europe and other countries, while the current crisis has spread much faster globally, affecting more and more countries in a short period of time.

As for the similarities between the two crises, they are not many due to the context in which they broke out. However, an important similarity is related to the impact of global economies, by worsening macroeconomic indicators and increasing indebtedness.

4.3. Measures taken at the EU level against COVID-19 versus the financial crisis of 2008

The measures adopted by the authorities amid the onset of the financial crisis in 2008 aimed at implementing financial incentive packages by increasing public spending, investment, tax cuts, state aid, and income tax cuts. Subsequently, several austerity measures were adopted to reduce the budget deficit and public debt, which consisted of reducing total and staff costs. These austerity measures have had a significant impact on the economic, financial, and social level, which have led to a worsening of the living standards of the population and the emergence of social vulnerabilities.

About the current crisis, European countries have taken many measures, both fiscal, social, and economic, to provide support to companies and citizens, but also to reduce the risk of an economic crisis. Among the most common measures taken are an implementation of state aid for low-income companies due to the pandemic, legislative changes, the flexibility of the legislative framework, allocation of European funds, granting more fiscal facilities to individuals and companies, suspension of the obligation to pay certain taxes, duties and installments, the granting of the unemployment aids, but also others.

5. Conclusions

Internal public debt can be a vicious circle of the government deficit in the budget process if it is not managed properly due to the need to cover it. Thus, according to the analysis, it can be seen how the onset of the financial crisis of 2008 and the current health crisis led to the registration of macroeconomic imbalances, more precisely to the deepening of the budget deficit and public debt.

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The financial crisis of 2008 has highlighted the fact that many European countries are facing various fundamental problems and unsustainable long-term trends that can lead to significant risks. This crisis has emerged amid low regulations in the financial system, more specifically at the level of the credit sector, which has managed to accumulate effects on a global scale. The impact of the crisis on Europe has been strong and has led to a slow recovery of the gap.

Concerning the current economic context, together with the need to identify the measures needed to reduce the effects of the pandemic caused by COVID-19, it is recommended that further research on the subject be recovery to be a fast one. The significant increase in recent indebtedness both globally and in Europe could lead to a new crisis, which will further affect states. At the same time, the pandemic generated by COVID-19 exerts major pressure on the state budget, which is facing the accumulation of much lower public revenues due to the restriction of economic activity.

The measures taken by the authorities are also unprecedented compared to 2008, as they have allocated much more money to reduce the effects of the current crisis. All these actions have led to a considerable deterioration of public finances and an increase of risks to their long-term sustainability.

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IFRS 9 AND THE INTERACTION WITH BASEL III REGULATION PILLARS

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Abstract: *IFRS 9, standard focusing on the accounting for financial instruments, once implemented, led to significant improvements in the world of accounting. The transition from the old standard (IAS 39) in order to apply IFRS 9 has been a major challenge for the bank system, due the fact that the new standard involves other criteria for classifying and measuring the financial instruments. A novelty brought by this standard and presented in the article refers to the introduction of Expected Credit Loss, another approach for recognizing credit losses. This new approch must be applied by institutions according with the three stages provided by IFRS 9. IFRS 9 has a strong impact on risk management and the banking business model. In addition to IFRS 9, Basel III, also, have a major importance in the activity carried out in the banking sector. Basel framework is applied on a consolidated basis to all internationally active banks, being the best way to preserve the integrity of capital in subsidiary banks by eliminating double-gearing. Basel III was created to strengthen the requirements included in the Basel II standard on minimum capital ratios of banks by increasing bank liquidity and reducing bank leverage. The main objective pursued by the Basel III agreement is to strengthen the security of the banking sector. At the level of the European Union an important role in the application of the new framework is played by the European Banking Authority. The paper aims to present, through a deductive approach, the new Expected Credit Loss modell and to describe the interaction between accounting standards and supervisory expectations, namely the interaction between IFRS 9 and the three pillars of the Basel III regulation: the minimum regulatory capital requirements (Pillar 1), supervisory review and evaluations process (Pillar 2) and market discipline (Pillar 3). The last part of this article is focused on impairment models and financial stability, treated in the light of the new accounting standard.*

Keywords: *IFRS 9; Basel III regulation; pillars of Basel III regulation; Expected Credit Loss; credit risk; financial institutions.*

JEL Classification: *M41; M21.*

1. Introduction

The current environment relies on the accounting and regulatory perspective inter-connections and mutual influence over each other, hence a balance must be achieved to ensure the institution's future profitability and, at the same time, ensure that the capital and liquidity requirements are met.

Even though the two perspectives require different assumptions, throughout the cycle, in the case of the capital requirements and point in time for the accounting regulation the objective are the same: to ensure that the institution is adequately capitalised to withstand the potential losses which could appear. Furthermore, the accounting perspective interacts with the Pillar 2 requirements as the supervisors evaluate banks' risk management systems, economic capital calculations and capital planning and assess the adequacy of the provision coverage and unexpected and expected credit losses regulatory capital.

Following the Basel Committee on Banking Supervision guidance with regard to expected loss adequacy supervisors can guide the level of the provision coverage through the requirements set in the Supervisory review and evaluation process under Pillar 2. Furthermore, the loan loss provisions impact the financial statements disclosure, hence impact the third pillar of bank supervision - "market discipline".

2. Methodology of the research

The research methodology aims a deductive approach which highlights the theoretical perspective regarding the concept of IFRS 9 and it interaction with the three pillars of the Basel III Regulation. As research method can have mentioned the documents analyze which consists in going through the specialized literature in order to identify the relevant works to the examined subject. Were accessed books and articles from the field, European regulations and International Accounting Standards (International Financial Reporting Standard 9 - Financial instruments) and, also, web pages of the Basel Committee on Banking Supervision and European Banking Authority.

3. Literature review

The financial statements present the value of the loans either at fair value or at amortised cost and it is expected to be reflective of the true value of the asset and provide useful information to both investors and supervisors (Benston and Wall, 2005).

Under the IFRS 9 requirements, the expected loss formula can be presented as follows: among the key parameters of the expected credit loss computation is the loss given default (LGD) which represents the loss incurred for a particular financial asset or group of assets, in the event of default. In order to have a more accurate Expected Credit Loss (ECL) computation in the context of the IFRS 9 standard it is important for institutions to set proper loss quantification process.

In essence, for stage 1 the institutions should hold the equivalent of one year expected credit losses while for stages 2 and 3 the institutions should hold the equivalent of Lifetime expected credit losses. Hence, the institution defines ECL as follows:

$$\text{Expected Credit Loss (ECL)} = \sum_{i=1}^{m} \text{mPD}_i \times \text{EAD}_i \times \text{LGD}_i \times d_i$$

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The institution calculates modelled Expected Credit Loss (ECL) as a function of:

- The probability of the exposure defaulting referred to as Probability of Default (PD).
- The proportion of the exposure that will not be repaid in the event of a default as Loss Given Default (LGD).
- The outstanding exposure the obligor has to the bank when the default occurs referred to as Exposure at Default (EAD).
- m denotes the time horizon for the ECL calculation - 12 Months for stage 1 and Lifetime for stage 2. As stage 3 exposures are already in default the PD will always be set to 100%.
- dis discount factor: The discount factor required to discount losses from the point of default in period i back to reporting date. It is obtained from the interest rate taken from source data or provided by the institution's modelling team proxy of the Effective Interest Rate (EIR) at origination.

The modelled ECL should be computed by institutions in accordance with the 3 stages defined by the IFRS 9 Standard :

- Stage 1: Exposures for which no significant increase in credit loss since origination performing loans to which a 12 months ECL is applied and is computed on a gross basis.
- Stage 2: Exposures for which a significant increase in credit loss since origination was identified performing loans to which a Lifetime ECL is applied and is computed on a gross basis.
- Stage 3: Defaulted exposures - defaulted loans to which a Lifetime ECL is applied and is computed on a net basis.

Based on Grünberger(2014) the LGD parameter is considered constant hence the key drivers of the change in the economic value of the loan are the probability of default and the original effective interest rates. Hoogervorst (2014) pointed out that due to the late recognition of defaults and modelling limitations, the loan loss provisions, computed under the incurred loss model, would only be recognised once the PD would be 100 the loan would be in default. Gebhardt and Novotny-Farkas (2011) pointed out that even if there would have been some indication of default it could not have been recognised until the event would have occurred hence. From the multiple estimates of expected losses incurred losses represent the at least the actual losses incurred.

The IFRS 9 standard requires an earlier recognition of a significant increase in credit risk associated with the obligor (Gebhardt, 2016) which is reflected in the loan loss allowance computed for the respective facility.

Barth and Landsman (2010) reflect upon the importance of financial statements as they represent the basis for the computation of the regulatory capital requirements and inform the market participants on the viability of the institution hence also impact the market discipline elements. Depending on the business model, financial institution'sbalance sheets are driven by the loans and advances portfolios values, hence the loan loss provision and charges is the key risk drivers and management estimates in banks' financial statements, hence their value and estimations directly impactsthe institution's earnings and compliance with regulatory capital

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requirements. Due to this interdependence, both accounting standard setters and regulators and supervisors are interested in ensuring the impairment estimates are adequate.

Regardless of the model and assumptions used in the computation of loan loss provisions they offer information to both internal and external parties supervisors are interested in ensuring the overall riskiness of the institution is within their risk appetite and properly recognised and capitalised for and reflected in the institution's risk estimates in order to ensure the financial resilience of the financial system. Benston and Wall, 2005 consider that the over-estimation of the loan loss allowance is not a significant concern for the supervisors, as this would reduce the probability of the failure of the institution and ensure the depositors would not be affected. However the market and financial auditors are interested in the true and fair view of the financial statements, hence an over or under-estimation would be of concern.

4. The interaction between IFRS 9 and the three pillars of the Basel III regulation

Developed by the Basel Committee on Banking Supervision as a response to the financial crisis of 2007-2009, the regulatory Basel III framework is based on three pillars:

- Pillar 1 – representing the minimum amount of regulatory capital that an institution should hold - Kim and Santomero (1988) consider it reduces the risk taking incentives of the institutions, as riskier assets would increase the Pillar 1 capital requirement hence the institution strategy should considers the cost of capital when making investments in riskier assets.
- Pillar 2 – supervisory review and evaluations process – enables supervisors to evaluate banks' risk profile by considering the institution's business model, governance, risks to capital and liquidity. From a capital perspective, the supervisors are focused on the assessment of risks not covered or not fully covered by Pillar 1. The additional capital requirements will be translated into additional Pillar 2 capital which the institution is expected to hold in addition to its Pillar 1 capital. In case the institution's provision coverage is deemed by supervisors inadequate additional capital add-on could be placed in order to ensure the coverage is within supervisory risk tolerance limits.
- Pillar 3 – market discipline – requires financial institutions to ensure transparent reporting which would enables capital markets to serve as a complementary force to discipline banks' behaviour.

4.1. IFRS 9 and Pillar I
The main building-block of any model (Basel or IFRS 9) is the use of an adequate definition of default, which is consist and comparable across management practices accounting and regulatory requirements should not be conflicting (EBA/GL/2017/07). Grünberger (2013) has concerns with regard to the appropriateness of the default criteria incorporate in the institution's definition of default the research reflects upon the inclusion of multiple default criteria which would result in the calibration of higher

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probability of default (PD) while the loss given default (LGD) associated with the portfolio would decrease given that despite the high the number of defaults the actual loss recorded would be minor or even zero. Therefore, it is of outmost importance that the definition of default is defined in accordance with the current requirements, furthermore when used for modelling purposes institutions should ensure its consistency through time.

The Capital Requirements Regulation (CRR), under article 178, defined the obligor as defaulted if it is more than 90 days past due or if any of the unlikeliness to pay criteria has been met, however the IASB decided to not provide a definition of default in order to ensure consistency with the credit risk management practices of the institutions (Basis for Conclusions paragraph 5.251). IFRS 9 introduces, as a backstop, the rebuttable presumption that default a default can be recognised when a financial asset is more than 90 days past due (paragraph B5.5.37)

In practice large misalignments can be identified within the same institution both across portfolios and between the regulatory and accounting requirements. Furthermore, the treatment across jurisdictions is significantly different.

Under the Basel requirements financial institutions are required to compute the value of the unexpected losses while under the IFRS 9 standard they are required to compute the value of the expected loss. The stage 1 computation of expected credit losses is conceptually more similar to the Basel requirements the losses are computed over a 12 month time-horizon and the key input parameters are the PD and LGD. However the parameters are not fully aligned, under such circumstance entities can use some of the regulatory parameters as a basis for the calculation of expected credit losses only after applying adequate adjustments the exclusion of regulatory floor (Basis for Conclusions paragraph 5.283) in order to ensure their compliance with the IFRS 9 standard (Basis for Conclusions paragraph 5.283).

Under the Basel requirements the banks using an advanced internal rating based approach (A-IRB) compute their own PD and LGD estimates. While the rating philosophy of the PD model can be either point in time (PiT), throughout the cycle (TTC) or hybrid, the calibration is required to be TTC estimates at a grade level. The PiT approach assesses the an obligor's PD considering the current state of the economy and over a relatively short time-horizon hence it's more sensitive to the prevailing economic circumstances, while the TTC approach capture a longer time horizon in order to neutralise the cyclical conditions. Under the hybrid approach the PD ratings are calibrated to the long run average default rates however, the model can reflect current/PiT macro-economic conditions through grade migration.

While there are no requirements on the rating philosophy an institution should use to compute its capital requirements, the CRR expressly states that a calibration to TTC grade level estimates is mandatory.

Under the IFRS 9 requirements the calibration should be forward looking considering all available information and a range of possible economic scenarios (Basis for Conclusions paragraph 5.282), hence the Basel estimates have to be adjusted in order to become IFRS 9 compliant.

With regards to the the LGD component used for regulatory capital calculation purposes, institutions can either consider using pre-defined parameters if it opted for the foundation approach, or can computed its own down-turn LGD estimates. While

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the IFRS 9 models require the institution to consider the most recent work-out practices that are reflective of the current and future characteristics of the portfolio.
For the computation of the regulatory parameters the institutions apply a margin of conservative to factor in any methodological and data shortcoming, IFRS 9 requires the removal of such adjustments.
Another difference between the regulatory and IFRS 9 computation is that the capital requirements are that the PD estimates are computed over a 12 months horizon, while the IFRS 9 standard requires a lifetime estimation for the stage 2 and stage 3 expected credit losses.
As mentioned earlier, the value of the loan loss provisions has a direct impact on the capital ratio calculation for both the standardised and IRB institutions.
Banks using a SA approach can include general loan loss provisions in their Tier 2 (T2) capital in the equivalent of up to 1.25% of their risk weighted assets (Article 62c CRR). Collective provisions computed under IFRS 9 are only eligible for inclusion in the T2 capital if they are freely and fully available, and there is no evidence that a loss event has occurred. For the jurisdictions where a minimum level of provisions is defined by the regulator, the difference between the accounting and regulatory provisions is deducted from Tier 1 capital.
Under the IRB approach any shortfall arising from the comparison of supervisory and accounting expected loss has to be deducted from Tier 1 capital (Article 36d CRR) up to 0.6% of the RWA of the excess of eligible accounting loan loss provisions over supervisory expected losses can be included in Tier 2 (Article 62d CRR).

4.2. IFRS 9 and Pillar II

Under the Pillar 2 framework - the supervisory review and evaluations process (SREP) - the supervisors assess whether the institutions have an adequate credit risk process. The interaction with the IFRS 9 models is seen from the perspective that the economic capital models presented in the institution's ICAAP (Internal Capital Adequacy Assessment Process) should also be PiT and reflective of an institution's current and forecasted expected conditions. The economic capital models are expected to address risk not covered or not fully covered by Pillar 1, hence credit concentration as well as migration risk are considered alongside the risk of default.
Consequently the Pillar 2 methodologies address the main limitations of the Pillar 1 methodologies the Internal Ratings-Based (IRB) models assume infinite granularity of the portfolios and are based on a one factor model.
This limitations could be addressed by incorporating:

- Single name concentration– the IRB parameters (PD, LGD, EAD) are adjusted to account for the granularity of the counterparties in the institution's portfolio by treating strongly interconnected borrowers as single counterparties. For the computation of the parameters, a clustering algorithm aggregates counterparties and exposures by treating them as branches and nodes which are interleaved until all connections are identified. The exposures for all accounts in each cluster are aggregated and a weighted average is taken for all risk parameters. The features of the 'clustered' portfolio are accordingly used to produce an estimate of the capital requirement.

- Sectorial and geographical concentration–the IRB parameters (PD, LGD, EAD) are adjusted to account for the exposure concentration across sectors and geographies. Individual sectors and geographies are linked to different sections of the economy and interdependent. Under this approach the default probabilities of individual sector and geographies are correlated. This is determined based on the analysing the historic volatility of the default rate. The historical default rate analysis provides the general economic, geographic, individual sector, inter-sector, and intra-group correlations.
- Migration is incorporated by adjusting the maturity factor in the IRB formula.

Another model that is used by institutions in the ICAAP is the stress testing model, which similar to the IRB, IFRS 9 and economic capital models, is based on the same key parameters (PD, LGD, EAD), however generally the stress testing models are top down and are considering significant shocks applied to the macroeconomic variables integrated in the model.

If the supervisors identity significant deficiencies in the institution's management process or in the loan loss provision allowance a Pillar 2 add-on can be imposed.

BCBS's Guidelines on accounting for expected credit losses as well as the Guidance on the application of the core principles for effective banking supervision (BCBS, 2015a) encourages the collaboration between auditors, enforcer's and supervisors in order to ensure a consistent interpretation of the accounting framework.

4.3. IFRS 9 and Pillar III

The third pillar of the Basel framework is seen as a mechanism through which market participants can monitor and reduce the aggressive risk taking practices of the institutions. Stephanou (2010) considers that one of the key characteristics of market discipline is the availability of reliable information in a timely manner. This is very relevant in the context of benchmarking exercise performed by the EBA on the IRB, IFRS 9 and Stress testing exercise.

5. IFRS 9 - impairment models and financial stability

Market disciple and disclosure are essential for the adequate functioning of market and allows third parties to get access to detailed financial information in order to make informed investing decisions. This leads to financial reporting being an important tool in the context of the interaction with regulatory supervision.

Under the IAS 39 standard it was observed that during boom periods, banks recognise higher interest income than provision charges, which allow the institutions to grow at a faster rate and also to distribute dividends, while during periods with less favourable macroeconomic conditions, the frequency of identifying specific loss events increased.

Furthermore, Bushman and Williams (2015) point out that there is a significant delay in informing the market participants on the level of losses recognised by financial institutions, increasing the downturn conditions. It is expected that IFRS 9 prevents this cliff edge effect by ensuring a timely recognition of default events avoiding another credit crisis. IFRS 9, by recognising 12-month ECL for Stage 1 as well as lifetime ECL for stage 2 assets ensures entities recognise losses earlier and mitigate

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excessive losses during downturn conditions and ensure retained earnings are adequately built acting like a buffer reduced dividend distribution. Additionally a more timely recognition promotes market discipline as market participants can take informed actions and reduce pro-cyclicality.

However given the parameters are built on a PiT philosophy, it will reflect the economic cycle's procyclicality hence the ECL estimates will be lower in the boom periods and will increase during the downturn. However the ECL will be built progressively ensuring its timely recognition hence avoiding a cliff edge effect due to the integration of forward looking information.

Grünberger's studies from 2014 showed that by incorporating forward looking information into the PD parameter the procyclicality of the model is reduced however it depends on the accuracy of the estimates use for the forecasted macro-economic values.

Bushman (2016) considers that IFRS 9 allows management a significant discretion in the estimation of the ECL and the main safeguard is to have an adequate external audit carried to certify the true and fair view of the financial statements. In the author's view the discretion can be used to increase retained earnings by delaying the recognition of losses and ensuring a smooth income recognition.

Borio and Tsatsaronis (2005) consider that prudential and accounting regulations could converge, however they will need to continue in different purposes hence should not be fully aligned.

The IAS 39 model was based on an incurred loss model Tardos 2005, hence the asset would be considered impaired once the event would be triggered, while the IFRS 9 model considers future losses even though there are no signs of impairments.

Chawla et al. (2016) consider the following qualitative and quantitative criteria to reflect signed of significant increase in credit risk since initial recognition. Qualitative criteria: day past due, work-out, forbearance and early warning indicators. The quantitative criteria are driven by changes in the rating of the obligor and changes in the PD value.

Novotny-Farkas (2016) analysed the interaction between the IFRS 9 standard and the Basel III prudential rules namely in relation with countercyclical capital buffer as it aims reflect the combined effects of the prudential and accounting rules.

One of the main limitation of the IFRS 9 models is the procyclicality imbedded due to its PiT nature. As the loan loss provisions models aim to reflect the economic conditions, they are directly impacted by the upward and downwards moves of the economy.

6. Conclusions

IFRS 9 is seen as significant improvement in the accounting world as it changed the perspective of losses recognised, them be moved from an incurred loss model as previously depicted by IAS 39 to an expected loss model factoring all available information at the point of the assessment (including forward looking data). The paper shows how different the supervisor's and auditor's perspective is and how the two views despite seeming divergent have the same aim ensuring the stability of the

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financial system. This paper outlines the interaction between the accounting standards and supervisory expectations, namely the interaction between IFRS 9 and the three pillars of the Basel III regulation. It highlights where there is deviations between IFRS 9 and supervisory expectations and outlines the justification for the deviation.

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BANK LIQUIDITY – GOING CONCERN VS. GONE CONCERN

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Abstract: *For most actors of the financial system, the liquidity in general and the bank liquidity in particular represents a stressful subject to discuss and even more stressful to manage. During the significant crises, especially the "modern era" ones, the liquidity issue became "the knot in the handkerchief", the key element in handling the problem banks. Moreover, while liquidity management became an important area of banking activities during normal times (going concern), and the tools/models used for this purpose evolved consequently, under the new framework of banking resolution developed after the financial crisis of 2007-2009 in order to break the vicious circle between banks and sovereigns (the "Helsinki declaration"), the problem of ensuring liquidity for continuing the critical activities/functions, if any, of banks under resolution, and thus obviating the negative impact on financial stability, appeared not to have been addressed enough by the new framework. Thus, currently, the subject of liquidity in resolution and resolution funding prompted a significant amount of interest, the researchers being expected to provide thoughtful insight as a valuable support for policy makers and legislators.*

Keywords: *liquidity; bank liquidity; bank resolution; contingency funding; resolution funding.*

JEL Classification: *G01; G33; G38.*

1. Introduction

The economic context after the financial crisis of 2007-2009, the handling of which involved considerable efforts from authorities responsible with the prudential supervision of financial institutions and banks, including by adopting decisions to use public funds of a significant volume, highlighted the enhancement of the requirements regarding the liquidity risk as one of the main priorities for regulators from around the world, mindful of the fact that, whatever the fundamental causes that triggered the crisis, the bank's liquidity and the liquidity risk management proved to be the weak link in the system.

2. Bank Liquidity and Liquidity Risk Management – Literature Review

The bank liquidity should be viewed in the context of understanding the key role of banks in the economy (i.e. to provide the financial resources needed to the other actors of the economy in order to ensure the economic growth as a whole).
But the liquidity could also be seen as the bank's capacity/ability to effectively meet the withdrawal of deposits or the payment of other types of overdue debt and to cover its additional financing needs to support its loan and investment portfolio (World

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Bank, 2003), without negatively affecting the day-to-day business (Matz and Neu, 2007).

Thus, the bank's liquidity refers to how rapidly and at which cost a bank could monetise its assets, either financial (e.g. shares) or fixed assets (e.g. commercial buildings) (Chacko et al, 2011). The markets, imperfect from the liquidity standpoint, show, according to the same authors, two features as regards liquidity: (i) the indirect cost, or awaiting cost, due to the time needed for the completion of a transaction of transforming an asset into cash during which the asset price could drop, and (ii) the direct cost, meaning the amount that a certain institution is willing to pay to a third party, from the asset price, in order for the transaction to be completed on spot terms (transaction cost/liquidation cost).

The multiple definitions of liquidity merge, according to Malz (2011), into two properties, respectively: (i) transaction liquidity, as a characteristic of assets or markets, and (ii) funding liquidity, more linked to the creditworthiness of the bank.

Regarding the liquidity of financial assets, according to Negrea et al (2009), a bond is liquid if it can be bought or sold rapidly, with moderate transaction costs, at a reasonable price.

Regarding the liquidity risk and its management, more authors discussed this topic, both before and after the financial crisis of 2007-2009, addressing the subject from different perspectives, using quantitative, qualitative analyses, or a combination of them.

Thus, Dowd (2005) proposes the estimation of liquidity risk (in the context of measuring market risk) by using a concept similar to VaR, named liquidity at risk, or cash flow at risk (the latter being used mostly in the case of non-financial entities). Liquidity at risk relates to the risk of cash flow forecasted for a defined time horizon.

At the down of the recent financial crisis, Hull (2007) analysed, among other risks specific for banks, the liquidity risk, highlighting the herd behaviour of market participants, their tendency to use the same type of transactions at the same time, leading to what is known as the liquidity black hole.

Based on the experience gained from the recent financial crisis, some authors try to address the phenomenon of massive deposits withdrawal, the so called "bank run" in stress times. Thus, the mere deposits (uninsured/side deposits) provide liquidity to banks but, on the other hand, due to the behavioural nature of depositors, banks are exposed to the risk of intensive withdrawal. According to Bohn and Elkebracht-Huizing (2014) this vulnerability appears due to the side deposits multiple equilibria with different confidence levels, the most accepted model regarding the dilemma of strategic decision making being the model Diamond and Dybvig, which provides a convenient framework for analysing traditional instruments used for stopping or avoiding withdrawals (e.g. convertibility suspension and deposit insurance). The authors also describe the impact of regulations over the bank's contingency funding, underlining the importance of liquidity stress-tests (performed by institutions, authorities and for the whole system), as well as the new regulatory requirements of liquidity introduced by Basel III (Liquidity Coverage Ratio and Net Stable Funding Ratio).

More recently, after the establishment of the bank recovery and resolution framework, based on the FSB – Key Attributes on Effective Resolution Regimes for

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Financial Institutions, involving coordinated activities from both competent authorities and financial institutions in order to ensure the recovery in stress situations and the adequate preparedness for an orderly resolution if the failing bank cannot be recovered, Venkat and Baird (2016) highlighted the importance of integrating the recovery plans considerations and resolution plans warnings into the liquidity risk management architecture specific for each bank.

3. Liquidity Risk Management in Banks – Going Concern Perspective

National/regional financial systems are dominated to some extent by banks which are mostly part of cross-border banking groups, especially in emerging economies like Romania.

These banks are structurally exposed to liquidity risk as they own considerable illiquid assets, such as loans, and they are typically funded by liabilities with shorter tenors, such as customer deposits. Liquidity risk management, is critical for the viability of these banks, being a key area of focus for bank supervisors, beside the capital adequacy.

From the banks perspective, liquidity risk management is about anticipating liquidity needs and preparing to meet them.

Considering the key components of liquidity risk (liquid assets, core and non-core funding and off-balance sheet commitments and non-contractual outflows), a precondition to the efficient liquidity risk management is a reliable management information system (MIS), providing timely and accurate information on the bank's current and prospective liquidity positions, in order to support a comprehensive reporting framework available for decision makers.

Important features for the management of liquidity risk are: (i) the risk tolerance, established by taking into consideration relevant factors as risk appetite, level and composition of bank capital and earnings, bank measures of its liquidity needs, bank's ability to convert standby liquidity into cash, and (ii) risk limits (e.g. non-core funding to total funding, loans to deposits or loans to core deposits) that are to be established by the board and followed by all key functions of the bank, including through independent reviews and internal controls.

Fulfilling the bank's liquidity needs involves liquidity planning, the process of estimating future funding needs and the way to meet them, as part of annual budgeting and planning. This implies that bank must define its desired maturity structure, targeted resources, instruments needed and amounts to source in each currency, by extensively using simulation techniques and stress testing in order to assess whether and how the bank's liquidity position deviates from the expected path.

A key part of liquidity planning is the estimation of cash flows, deriving from assumptions, based on modelling liquidity exposures under a range of scenarios with different time horizons and degrees of severity. One tool used for planning future cash flow needs is the maturity ladder, ranging from simple devices to complex models.

In order to be prepared for difficult times of liquidity crisis, the banks could use: (i) early warning indicators (like rapid asset growth, repeated incidents with positions

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approaching or breaching internal or regulatory limits, rising wholesale or retail funding costs) that help to identify emerging funding vulnerabilities, eventually triggering the implementation of the bank's contingent funding plan, (ii) liquidity reserves (liquid assets that allow banks to "buy time" in order to survive the strain by selling or pledging these assets to raise cash), (iii) liquidity stress tests that help banks evaluate the adverse impact of predetermined risk factors on banks' funding vulnerabilities, asset liquidity and sources of contingent liquidity, and (iv) contingent funding plans, as a "compilation of policies, procedures and action plans for responding to severe disruptions to a bank's ability to fund some or all of its activities in a timely manner and at a reasonable cost" (BCBS, 2008).

With a national regulation framework closely articulated with the European legislation, including in the field of liquidity requirements and internal assessment process for liquidity and capital, a remarkable characteristic of Romanian banks is that all of them, both the local ones and the subsidiaries of cross border banking groups, register high levels of liquidity coverage ratio. Moreover, the supervisory authority annually oversees the internal processes established by each bank in order to assess de adequacy of capital and liquidity, as well as the risk profile of the banks, the outcome of this tight supervision consisting of no cases of failing or problem banks, even during the financial crisis.

4. Bank Resolution Framework – Main Features

One of the main pillars of the bank recovery and resolution directive (BRRD), establishing the European framework for dealing with banks in weak or failing condition, is the resolution framework that empowers authorities with tools and competences for handling failing banks without involving public money, but preserving the critical functions provided by the banks to economy and the financial stability of the financial system.

In this context, for a bank declared as failing or likely to fail, for which there are no private or supervisory solutions for recovery within a reasonable timeframe, there are only two ways of resolving, respectively through liquidation (the default option) or by applying resolution tools (bail-in, bridge bank, sale of business, asset separation) and resolution competencies (write off and conversion of capital and liabilities, mainly) if it is in the public interest. The resolution tools seek to cover the losses and to recapitalise the bank (bail-in) or the acquirer/bridge bank (sale of business, bridge bank) through a fair burden sharing among the shareholders and uncovered creditors, thus avoiding the use of public funds to save the ailing bank.

In order to provide credibility to the new tools, resolution funds are established, funded by all banks through yearly contributions, that could be used by resolution authority to fulfil the potential capital shortfalls, but observing the state aid rules.

Still, the most important element aimed at ensuring the success of a resolution action is a new requirement that banks are asked to comply with, namely the minimum requirement of own funds and eligible liabilities, that could be used for recapitalisation in resolution (MREL). The eligible liabilities should meet specific criteria to be considered when the capacity to loss absorption and recapitalisation is assessed. One important issue related to the MREL requirements is the ability of

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banks to raise funds from the market through debt issuances at a cost and in a quantity that doesn't affect their viability.

Although visible progress has been made so far in preparing for possible resolution actions in terms of resolvability, including by ensuring the appropriate capacity to absorb losses and recapitalization (by imposing MREL), only the restauration of banks' viability by applying one or more instruments or resolution powers does not exclude the situations in which the respective banks encounter liquidity shortfalls.

5. Conclusions - The Continuum from Going Concern to Gone Concern from Liquidity Perspective

From the liquidity perspective, if we consider that, until the failing or likely to fail determination, a bank could use the central bank liquidity facilities or the emergency liquidity assistance, if applicable, the problem of ensuring the liquidity needs appear right after the resolution decision, when the application or resolution tools produces effects on the market and the market participants are reserved in providing funds to the bank resulting from resolution (see the figure below).
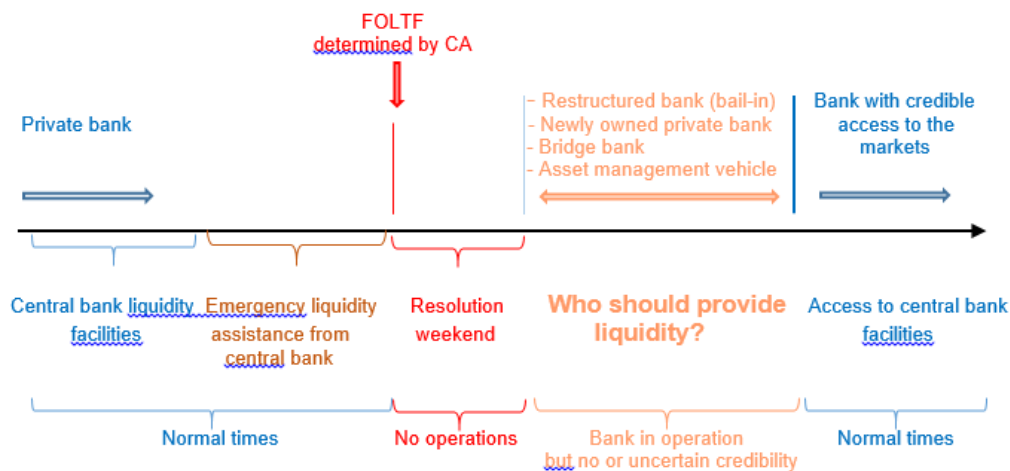
Figure 1: Liquidity provision in different stages – a sequence of liquidity sources
Source: adapted by author after Bruegel

In this context, the concerns of all interested parties (authorities, regulators, banks) related to this subject could be categorised on two layers:
- Based on the current legal framework, to identify the necessary steps to ensure the financing continuity, including liquidity, from going concern to right before, during and after resolution;
- Considering the existent facilities to grant liquidity support in different situations and scenarios to entities in distress, to identify the necessity for legal/regulatory adjustments in order to address the liquidity adequately, without creating moral hazard.

It should be noted that all concerns for addressing liquidity in resolution emphasize the need to distinguish between public aid for liquidity in resolution (e.g. the common backstop, the provision of guarantees by the Resolution Fund) and public sector losses (supporting failing banks with public money - bail-out).

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DIGITAL BANKING. A CURRENT DILEMMA SOLVED THROUGH THE DESIGN THINKING METHOD

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Abstract: *More natural than analytical thinking, design thinking provides solutions to common dilemmas. Fundamentally, it is a human centered and collaborative approach. It all starts with empathy, through the help of a deep research. Furthermore, banking success resides from understanding customers, not exclusively from profits. It is necessary to figure out human thinking, the needs and desires of customers, in order to have a portfolio of appropriate products and services. This is where success comes from. Having this desideratum, the paper analyzes the characteristics of the design thinking method and the digital elements that appear in the banking sector. Certainly, the biggest challenges in the banking system are generated by the digital transformation, by emphasizing the relationship with customers and current social trends. Consequently, Bank of America is an example of a successful application of the design thinking method. Likewise, the beneficial impact that the design thinking method can have on the bank's employees should not be ignored. Through this research paper, there was analyzed the environment of the banking system which is influenced by design thinking.*

Keywords: *banking system; design thinking; innovation; digital; employment.*

JEL Classification: *G21; O10.*

1. Introduction. The new normal in innovation

Digitalization is no longer an option for bankers, becoming a modern benchmark for financial services. Indubitably, banking must follow the direction of digitalization in order to keep up with the customer's expectations, with the changing consumer profiles, the changing generations, and the wave of technology that is taking over more and more companies and industries. Particularly, digitalization will have an impact on the way people do business and banking will not be an exception. There can already be seen a series of transformations of traditional banking, as it was decades ago, regarding its business model, developed around new digital technologies – NFC payments, online banking, alternative authentication and many more. (Larsson, Viitaoja, 2017)

On the other hand, design thinking is definitely a fashionable term today. It can be met everywhere, whether it is the corporate environment, banking employees or creative meetings. It may be stated that design thinking is the new recipe for successful products and services. Although, design thinking has been considered the secret expertise of design agencies, this process can be adopted even by those who are not experts in the field. It should be noted that, in most areas where design

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thinking has been remarked, it has emerged from the analysis of the cognitive processes.

Likewise, the design thinking method helps companies create added value for customers. In general, it can be used for any disturbing issue. On the other hand, the relevance of this method is observed in the banking system by developing the banking products and services that customers really need. The involvement of a group of clients, from different fields of activity, can generate relevant opinions, as the clients think from the end user perspective. There can be made an appropriate market research through their needs and desires. Therefore, the importance of researching this method in connection with the banking system comes from the desire to provide an experience as pleasant as possible for the customers, either if it is online interaction or in a branch.

However, the first step towards design thinking was taken in 1950, by Buckminster Fuller. At that time, the concept of *design science* was introduced, applying the conscious design elements with the desire to help the earth's finite resources meet the needs of humanity, without disrupting its ecological processes. (Design Science Decade, 2020) In 1984, design started to be considered a strategic tool for different innovative strategies. (Kotler, Rath,1984) Thus, design thinking is seen as a *human-centered approach to innovation*, paying attention both to the needs of the people and technology available. (Brown, 2008) In addition, design thinking is more a set of principles, not existing a clear framework for it. It can be stated that design thinking is more of a compass, than a map to follow or a creative way to solve sophisticated problems. Nowadays, design thinking is more important than ever, due to the new technologies and up-to-date business problems that have evolved and are becoming increasingly complex.

In fact, the process has five main steps, not being mandatory to follow a certain guideline:
- Empathize. This step represents the empathic understanding of the problem, through a detailed research of product or process.
- Define. Now, the information gathered in the first step is analyzed, being defined the problems observed.
- Conceive. Ideas are generated based on the knowledge gathered in the first two phases, in order to identify new solutions to the problem.
- Prototyping. In this step, the team proposes a number of product versions, as solutions to the problems identified.
- Test. There is a must to rigorously test the finished product using the best solutions identified in the prototyping phase. (Brenner, Uebernickel, Abrell, 2016)

As it turns out, there are large gaps in the literature, regarding the design thinking method applied in the banking system. However, two banks have stood out over time by successfully applying this method – Deutsche Bank and Bank of America. Accordingly, the aim of the current research paper is to discover, understand and explore the majority of opportunities generated by the adoption of design thinking in the context of banking system. It is desired to follow the positive impact, as well as the negative effects. The willingness is to obtain a clear image of the social environment and of the banks, but also to observe the use of design thinking. Based

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on these preconditions, the research question that underlies the current paper is – *How can design thinking improve the banking experiences?*

Furthermore, *Digital Banking. A Current Dilemma Solved Through The Design Thinking Method* contains the following subjects: an introduction that presents a generic image of the content of the paper, followed by an analysis of the banking system, which explains in detail its profound changes that may be observed in the last years. On the same idea, a chart indicating customer segmentation is included in order to determine the target market of the banks. The research paper begins by analyzing the current environment, as it is desired a clear connection with reality and the possibility to use design methods in the most successful way. Then, section three exemplifies the use of the design thinking method in banking. It also presents a strategy, with the desire to launch products and services that are appropriate to the customer needs and wants. Section four - *The benefits of design thinking on bank employees* - brings to the fore a new perspective in which the employee satisfaction may be increased through design thinking. Finally, the conclusions assert the basic idea of the paper, but also the findings identified during the research.

2. Disruption of the banking system in Romania

Today, most bank customers prefer to keep in touch with the financial institution only through the internet. If the banks need less staff today than few years ago, it is also due to the different way in which people deal with banking services. It is generally considered that the clients will remain loyal to the banking system. Although interest rates on deposits are low, banks guarantee deposits up to a maximum amount. Banks offer long-term lending systems and thus, customers are retained, even by rescheduling debts.

Digitalization is, however, a great challenge for banks. The main obstacles in accelerating its penetration in credit institutions is related to the relatively slow transformation of processes, starting from the tools available to bank employees, internal processes, databases, new skills and digital skills that require continuous professional training. Still, there are mixed solutions on the market, in which an operation often starts online, but ends up being completed in a traditional format, with a thick documentation. (Georgescu, 2016)

It is worth mentioning that, in recent years, three elements have been observed that led to a complete change in the banking system, namely:
- **Increased focus on customers.** It is considered that the 2008 financial crisis had unfavorable effects on customers, as they lost confidence in banks. (Gillespie, Owen, 2013) Indeed, the crisis of the banking system would not have had all the bad consequences if the banks would have been better capitalized. It is obvious that insufficient liquidity was partially at the origin of the solvency problems of specific banks. (Nagy, Benyovszki, 2013)
- **Digital transformation.** From the debit or credit card payments, to the payment with the mobile phone or with other devices through NFC technology, it has not been a long way. Additionally, 5G is known to be 100 times faster than 4G technology. Objects, devices and machines are

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expected to be interconnected through 5G technology. It is not only looking for interconnecting people. It is expected to develop the mobile networks in order to support the improvement of devices and services. Efficiency and costs are two defining characteristics. (Qualcomm, 2020) Along with these two breakthrough technologies, it is a must to mention the contribution of artificial intelligence, big data, machine learning and analytics.

- **The changing nature of the customer's requirements depending on social trends.** This fact may be felt more intense among Millennials. If in the past the only aim was to open a basic current account, now customers are looking for additional benefits – SMS alerts, access to online banking or the possibility to withdraw cash from any ATM, worldwide for free.

In Romania, as it can be seen in the graphs bellow, most bank customers are coming from the 25-44 age group, being especially women. However, the difference between the number of men and the number of women is narrow. Young people bring significant benefits to banks, as most are employees or own companies. Therefore, they make numerous transactions, through the credit or debit card or through other digital means. At the same time, the clients want the banking employees to behave friendly, receiving transparent information about the bank's products and services. Although a large part of the banking activity moves online, it is still advisable for all the interactions to be transparent.
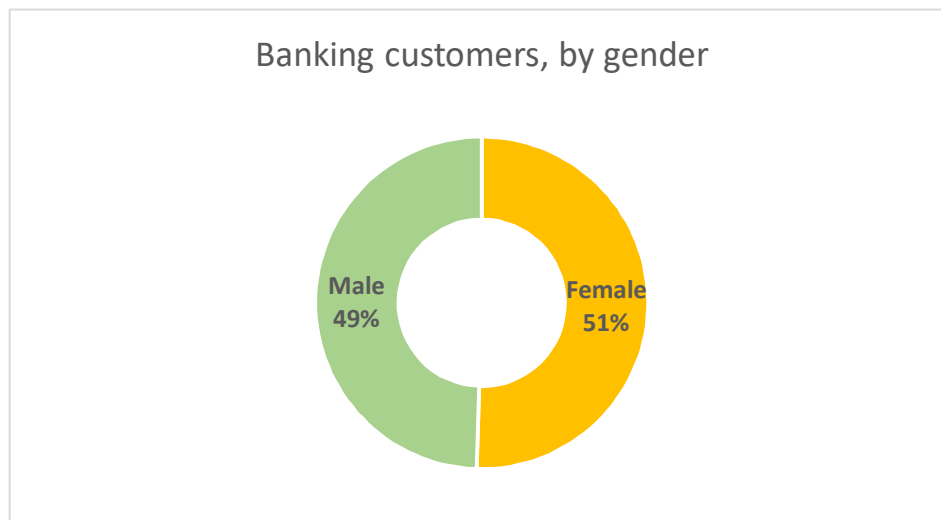
Figure 1. Banking customers, by gender
Source: Author's sketching based on BRAT (2018), SNA – Focus, and Forbes Romania (2018), *Profilul clienților băncilor comerciale din România (studiu),* https://www.forbes.ro/profilul-clientilor-bancilor-comerciale-din-romania-studiu-107989 [04 Nov 2020]

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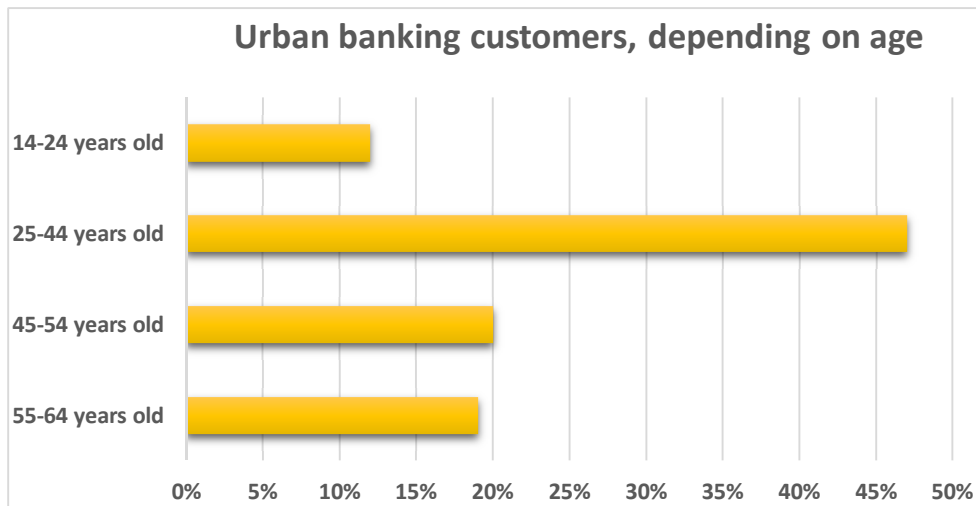
Figure 2. Urban banking customers, depending on age
Source: Author's sketching based on BRAT (2018), SNA – Focus, and Forbes Romania (2018), *Profilul clienților băncilor comerciale din România (studiu),* https://www.forbes.ro/profilul-clientilor-bancilor-comerciale-din-romania-studiu-107989 [04 Nov 2020]

On the other hand, it should be noticed the way the internet is used by Romanian, Bulgarian, Serbian, Hungarian and European users, in general. Talking about social media, one popular platform is, indeed, Facebook. Although it started as an application for Harvard students, then for several universities in the United States, in 2006, Facebook started to be available to anyone over the age of 13. It is clear that social networks have provided a quick and convenient alternative for consumers to be informed. Also, a clear segmentation of social media consumers may help companies target their markets online, according to their marketing needs. Thus, in the graph bellow, it can be seen how all the analyzed countries, except from Romania, registered increases in social media consumption in 2019, compared to previous years.

Contrary to what occurs with social media, the use of internet banking platforms is not as successful. Despite the digitalization and investments made by banks in this area, there are Romanians who prefer to keep in touch in real life with bankers. Through internet banking, many transactions can be carried out conveniently. However, in Romania, those who use it are still a minority. According to Figure 4, the trend is upward in all countries analyzed, as well as throughout the whole European Union.

Comparing the two figures, it should be noted that users prefer to use social media platforms instead of internet banking platforms. These differences may also be due to the limitation of banks in providing access to internet banking to young people, those under 18 years old, while social media is much more lenient in terms of age.
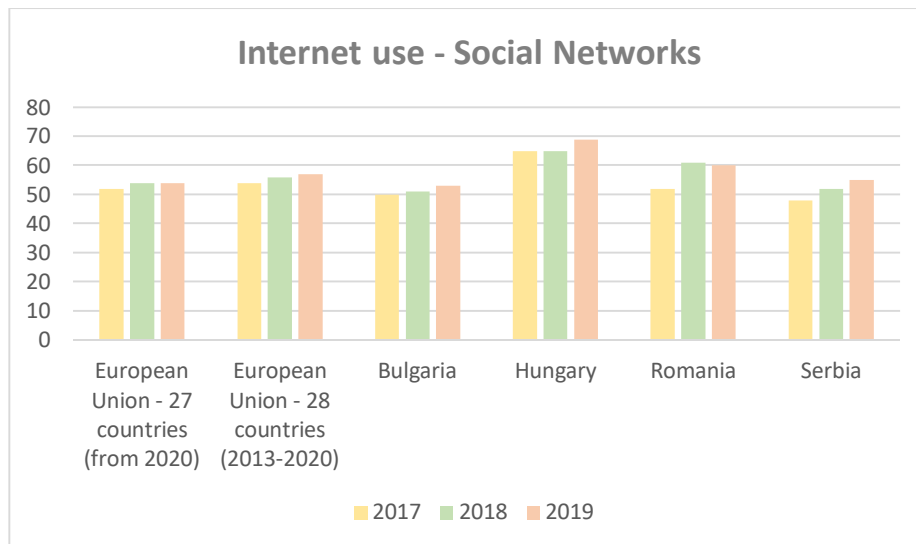
Figure 3. The use of internet within social networks in European Union, Romania and neighboring countries
Source: Author's sketching based on Digital Economy and Society Index, Eurostat, [20 Nov 2020]
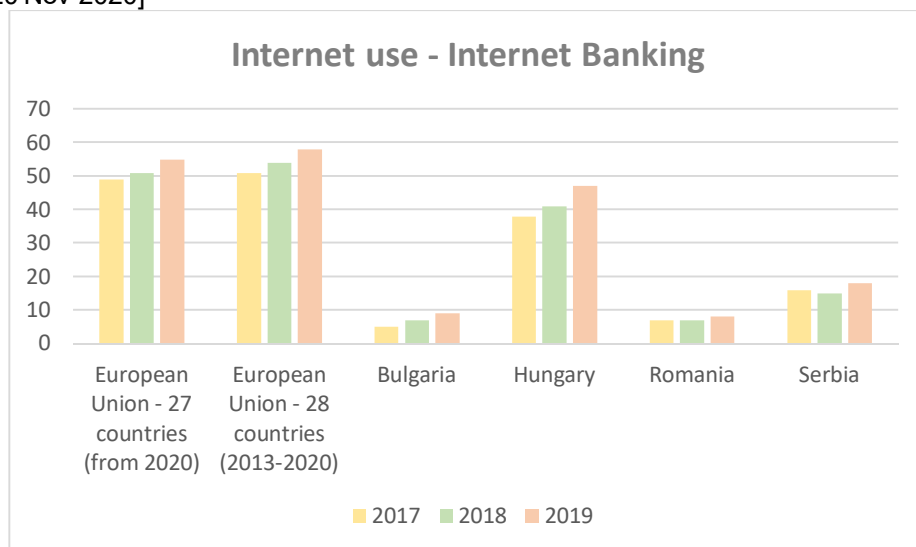
Figure 4. The use of internet within internet banking platforms in European Union, Romania and neighboring countries
Source: Author's sketching based on based on Digital Economy and Society Index, Eurostat, [20 Nov 2020]

However, there are banks that allow young people over 14 years old to have access to internet banking, but they are limited in transactions. Therefore, the higher the

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use of internet banking platforms, the more digitalization may increase. The offered services will get in time more numerous and diverse. However, there is a need of a digitalized population with an increased appetite for using the internet. In the situation where internet consumers use social media networks more frequently, banks must point in that direction. There can be offered personalized ads to attract their attention through Facebook, Instagram, TikTok or other platforms or there can be organized contests or online events. However, the current economic and health situation, along with the multitude of restrictions, have led to a profound change in the entire system. Financial-banking institutions, like many other companies from different sectors, turned to technology in order to continue their activities, despite the restrictions imposed by COVID-19 pandemic. Anyhow, digitalization is the future of the banking industry, as consumers will choose to work with banks that can provide remote services.

3. How can design thinking be successfully applied in the banking system? The role of design thinking

Digital transformation is a vast concept and often partially implemented because it is interpreted differently. A successful approach is one that begins with understanding what current and potential customers want. This involves designing with customers the experience that the bank wants to offer. Without a clearly defined roadmap, banks risk allocating insufficient budgets, offering few resources for implementation or even delaying the fulfillment of certain activities. Thus, the design thinking method is intended to be applied to the entire customer experience – from compliance and acquisition, to awareness and assistance, followed by an analytical overview that further amplifies positive experiences and indicates less strong points. The advantages of the newcomers are flexibility, creativity and quickness. Therefore, banks that already exist on the market must focus on innovation.

An outstanding example that brings to the fore both a bank and the design thinking method comes from the Bank of America. In 2004, this bank set a goal to increase the number of active customers, with current accounts open. Thus, the bank asked IDEO for help, with the desire to establish a strategic plan to achieve the objective. The company started to observe and question the behavior of the customers. However, through a certain interaction with a client, it was observed that he would round up the amounts by adding, when calculating his expenses, at the end of the month. Two advantages may be pointed out – an easier calculation and the few cents left over added up and became a few dollars. Due to the fact that this practice was common for many customers, Bank of America developed a service that rounded the amounts of the products bought with the debit or credit cards. The cents left after the rounding went automatically to a savings account. Thus, it is not important the amount saved, but the idea of saving. (Bank of America, 2020)

Likewise, Barclays, an English bank that functions internationally, in North America, Asia, Africa and South America, is a model for other financial institutions, by putting innovation first. Back in time, Barclays was the first bank to launch an ATM in the United Kingdom. And now, they created *Chief Design Officer*, a unique job beyond the entire group. In fact, a Chief Design Officer communicates with end users, listens

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to their opinion and analyzes their behavior. Thus, all the bank's products and services are adapted to the users' needs. The effects are certainly as expected, as this mindset is spread throughout the Barclays group, and the design thinking method also shapes the entire team's thinking. Altogether, the products and services that this employee analyzes are digital, offered through online banking platforms. Basically, what is launched is really relevant for the end users. (The Creative Industries, 2020)

National Australia Bank (NAB) had set a goal: to exceptional serve its SME customers, as they are a valuable customer segment for the bank. To achieve this goal, NAB has signed a partnership with a third-party company to help by observing and analyzing the behavior of SME customers. Following the market research, it was observed that the application process for a loan was not characterized by an ease of use, instead was time consuming. Also, as expected, it was noticed that an upgraded online banking platform could lead to a better perception of the customers. (Schoenmakers, 2018) The result of applying the design thinking method was seen in the launch of NAB QuickBiz Loan. Through this, a SME may quickly take an unsecured business loan online. (NAB, 2020)

Therefore, the design thinking process is, as it turns out, time consuming and, although it works with people of all ages and backgrounds, it is easier to put it into practice in a coordinated environment. Despite these limitations, the process is valuable, developing the creativity and ability of participants, but also the discovery of products and services that can give favorable outcomes.

In fact, it is of outmost importance to put oneself in the customer's shoes and evaluate the reality from the end user angle. Once the particular behavior of the clients is observed, discovered and understood, the bank may tailor its business model in accordance with the demand. In this way, a competitive advantage may be strongly built.

Figure 2. Three relevant elements for the application of the design thinking method in the banking system
Source: Author's sketching

Applying the theoretical elements, there can be stated the three elements of the process in which design thinking is used in banks. Firstly, to find out who the customers are, it is a must to understand the business. A realistic look at the business is needed and understanding the key elements of the company is a first step in this direction. On the other hand, understanding refers also to the customers. It is necessary to know what kind of customers would be willing to work with the bank. Besides, their income, education or age may be influential. The more a bank

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focuses on serving its customers and meeting their expectations, the more successful will be. Thus, a clearer picture of the needs and desires of customers can be made by choosing a group of people from the target market to work on applying the design thinking method.

Moreover, the financial resources are established and calculated after using the design thinking method, because the correct allocation of money is required. First of all, short, medium and long-term goals must be set, Thus, these objectives should reflect the new products and services to be launched following the ideas from the customers. Knowing exactly the strategy, the allocation of budges is more accurate. Finally, a critical look of the new product or service can be obtained by analyzing the income and expenses. Also, customer feedback is constructive and may help understand consumer behavior. Additionally, the brand and the image of the bank can be outlined by knowing the clients and figuring out the real purposes.

4. The benefits of design thinking on bank employees

Looking from another perspective, employee satisfaction is essential for the bank's image. It is not enough to create and promote a desired image of the bank, though it is very important that employees support it. Both current and past employees, even candidates who participate in interviews can write about their experiences with the bank on social media platforms. Most candidates interested in a position open at a bank ask their acquaintances about that specific bank, in order to create a clear opinion. What the employees say may make a difference in the decision of a highly rated candidate to accept or reject the position within the bank. As it may be imagined, happier employees are even more vocal and ready at any time to share their positive experiences. (Auer Antoncic, Antoncic, 2011) Thus, employees with a high degree of satisfaction are more likely to recommend the bank to relatives, friends, and acquaintances. Otherwise, no employee will risk damaging their personal relationship due to a wrong recommendation. Moreover, satisfied employees will want to work for the same bank as long as possible.

First of all, design thinking can be used to increase employee satisfaction. It is desired that these employees to be loyal, work with passion and be rewarded accordingly. To aim for this goal, the employer (in this case, the bank) must start by defining its Employee Life Cycle, known as ELC. Through this, it can be observed the stage of relationship that each and every employee has with the bank. (Cattermole, 2019) One step that needs to be taken in this regard is to form teams from different departments, to share opinions and to work together. Several ideas, from different perspectives, can solve problems effectively.

A first element of design thinking comes from the human resources department to put itself in the employees' shoes. Thus, they will better understand their needs. Indeed, it is necessary to have a clear image of a satisfied employee, who will support the company and who will perform the tasks successfully. In this sense, there are certain challenges that employees will face or are already facing. Awareness of these challenges is a first step towards solving them. Thus, special attention is required on these problematic elements, in order to be solved simply and effectively and to reduce the gap between a current condition and a desired

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one. The next step in the design thinking method is prototyping. Testing is an important part, which will bring the bank relevant information about how to act. If the new strategies work, then continue with them. Instead, if these are found to be ineffective, there is a must to return to the first step and start again by looking for new solutions. (Coene, 2018)

Finally, the design thinking method is universally valid. It can bring benefits to both employees and customes. In addition, through the increased satisfaction of the employees, their relationship with the clients can be improved, brining benefits for the bank as well.

5. Conclusions

Design thinking seems to be the key to success, as, first of all, it brings humans to the core. Neither technology, nor profit is the crucial element that may conduct a bank to accomplishment. Design thinking invites people to be collaborative, to build on the ideas of others, to think out of the box and to work in a team of people with different perspectives.

Therefore, emerging technologies seek to automate various financial processes, leading to the launch of cost-effective banking products and services. Thus, the aim is to overcome information asymmetries, representing an essential part of banking, seen as a business. A digital economy is gradually being build, step by step, over time. However, the bank being one of the emblematic institutions of the financial system, has a decisive function for the digitalization process. In essence, banks are using technology to do what they were already doing, but better. Although years ago, customers had only the opportunity to view only the balance of the account in the online format, now the variety of transactions is increased. It is just about imagination and the involvement of design thinking in everyday activity.

Indeed, it is a precondition to mention the concepts of User Experience (UX) and User Interface (UI), being important elements of web design. The aim is to improve the experience that a user has with a specific bank. Additionally, UX seeks to increase customer satisfaction through analytical thinking, attention to detail, empathy and simplification of the processes that a customer must go through. It is intended to be all intuitive, without the need to read a user manual. Besides, UI refers to the particular characteristics of a display system, which integrates graphic elements.

Furthermore, it is desirable for the banking system to involve as much design thinking in banking activity in order to innovate. Customers are also encouraged to be part of the decision-making process, finding out what are their real needs and expectations. Forthcoming, design thinking will bring competitive advantage to banks that decide to use it.

In the end, it is advisable to make a more comprehensive analysis of the impact of design thinking on the performance of the banking industry. Moreover, it is recommended to discuss the issue with international specialists.

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MANAGING THE IMPACT OF THE INVENTORY LEVEL ON THE FINANCIAL RATIOS THROUGH DUAL SIMPLEX ALGORITHM IN THE CORONAVIRUS CRISIS

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Abstract: *This paper presents the impact of inventory level on the financial ratios, namely Return on assets and Debt to assets ratio. This study is designed to help managers to establish an efficient inventory level to obtain a high ROA and a low D/A, which indicates that the company is doing well in managing its resources, can attract more investors and can meet financial obligations with its resources. Determining the inventory level that generates a high ROA and a low D/A is possible using the Primal or Dual Simplex Algorithm. Primal Simplex Algorithm has some limits in determining the inventory level, so the Dual is preferable. Using Dual, the company can simulate more production plans until the optimal stock level is obtained. Also, the Dual Algorithm can help managers to identify the initial optimal solution in the shortest time possible and to re-optimize this solution until the ROA and D/A have the expected value. This possibility of re-optimization is important nowadays due to the impact of the coronavirus crisis on the sales: the company can model the production plan whenever the demand is changing and can simulate the production process which generates the best ROA and D/A that can be obtained even if the revenues decrease or the liabilities increase. This paper presents the initial production plan created by the managers, a worst-case scenario (most common in crisis), where the turnover decreases, the ROA is low and D/A is high, and a best-case scenario (the ideal one), where the turnover increases and ROA and D/A have optimal values. Forecasting inventory level, and therefore ROA and D/A has also the advantage that it could avoid a potential conflict of interest between shareholders and managers. Despite these advantages, there are some limits: firstly, using Dual Simplex Algorithm on determining the inventory level that generates a high ROA or a low D/A makes managers simulate several times until the optimal solution is obtained and secondly there are some short them debts that are not considered. The first limit would be removed in further research, by using fuzzy numbers.*

Keywords: *simplex algorithm; return; debt; assets; liabilities; optimal solution.*

JEL Classification: *C61; G17; G31.*

1. Introduction

All companies, either large or small companies, hold stocks. A shop buys stocks from suppliers and holds them until they meet the demand. A factory buys raw materials and uses them in the production process; even non-manufacturing or service companies need to hold stocks to provide their services to customers.

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Holding stocks and determining the stock level are important issues in the decision process. There are three types of decisions, depending on the time horizon: strategic decisions (long term), tactical decisions (medium-term), and operational decisions (short term). The stock level is a:

- strategic issue for the decision of building a new warehouse for stocks or shipping them directly to the consumers;
- a tactical issue for the decision of how much to invest in stocks;
- an operational issue for decisions about the number of raw materials needed for the production process or about the quantity of the finished goods that should be produced in the next period. (Waters, 2009).

There are some traditional inventory methods: EOQ (Economic Order Quantity), JIT (Just-in-time), ABC (Activity-based Costing) that measure and determine the stock level. Moreover, some mathematical algorithms provide the possibility to identify an optimal inventory stock in the next period. These are the Simplex Methods, and compared to inventory methods, they have more advantages: firstly, they relate the stock level not only to the holding cost and reorder cost as EOQ does, but to the time, space, budget, or demand constraints, and secondly, they help managers not only to make the right operational decisions, but also tactical, or strategic decisions.

2. Short Literature Review

Establishing the inventory level is an important issue, due to the impact that it may have on the company's financial performance. There are two different perspectives in the literature: some researchers sustain that there is no relationship between the inventory level and financial performance, while others demonstrate the impact of the stock level on the ROA and Debt to Asset Ratio. Table 1 classifies the publications according to these different views.

Table 1: Different perspectives in literature review

Existing relationship between stock level and ROA, D/A	Non- existing relationship between stock level and ROA, D/A
- Blinder, A. S., & Maccini, L. J. (1991) - Lieberman, M. B., Helper, S., & Demeester, L. (1999) - Chen, et. al (2005) - Waters, C. D. (2009) - Koumanakos, D. P. (2008) - Modi, S. B., & Mishra, S. (2011) - Jayaram, J., & Xu, K. (2016)	- Rumyantsev, S., & Netessine, S. (2007) - Basu, N., & Wang, X. (2011)

Chen et al. (2005) formulated the idea that a low inventory level does not mean a profitable company, but the highest inventory level makes companies perform poorly. It is relevant to determine a stock level that is "low, but not too low."

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Waters (2009) demonstrated that level stock has an impact on ROA, considering the formula: Net Profit/Total Assets, where Total Assets means: Current Assets + Non-current (Fixed) Assets. Current Assets are accounts receivable, cash, inventories: raw materials, work-in-progress, and finished goods; and non-current assets are warehouses, plants, equipment, information systems. Current assets will be low when reducing the stock level, while the investment in non-current assets will decrease, and the value of ROA will be high.

Blinder & Maccini (1991) showed that maintaining low inventory would improve production planning, would minimize the cost of shortage and the reorder cost. They also mentioned that it is crucial to establish the inventory level not too high but not too low either.

On the other side, Rumyantsev & Netessine (2007) considered that the absolute inventory level does not influence financial performance. They compared the inventory and sale movements as follows. If the inventory moves faster or more slowly than sales, the company will be less profitable.

Basu, N., & Wang, X. (2011) proved that for the wholesale and retail industry, the relation between stock level and financial indicators is attenuated by the fact that the companies from these industries generally carry a low level of inventory. Also, they showed that the relation between stock and financial performance is sensitive to the choice of the analyzed period.

Reviewing the literature, the question, "what levels of inventory maximize financial performance?" remains, mainly because there is no exact answer to this question.

This paper would offer an answer by using the Simplex Algorithm. The companies would be allowed to find the inventory level adapted to their activity and forecast this level considering both financial performance and operational restrictions (space, time, budget, reorder level, safety stock). Moreover, if the company has a lower ROA and a higher Debt to Asset Ratio after optimizing stock level, this paper provides the possibility for the management to re-optimize the stock level until the expected ROA or D/A has the best value.

3. Optimizing Inventory Level Using Simplex Dual Algorithm

3.1. Definition and Methodology

The inventory level depends on production planning and market demand. The market demand is a variable that can be rarely influenced by the company. The only way to deal with this factor is to adapt the company strategies to the movements of the market in the quickest way. Therefore, it is vital to use methods that collect data and process them in the shortest time. The production planning is at the hand of each company. Using mathematical methods, companies can determine the production level considering the beginning stock, safety stock, and space, time, financial constraints. The most popular method for optimizing production is Primal Simplex Algorithm. The quickest way for re-optimization production is the Dual Simplex Method.

The Simplex Algorithm is "a step by step arithmetic method of solving linear programming problems, whereby one moves progressively from say a position of zero production and therefore zero contribution until no further contribution can be

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made. Each step produces a feasible solution and each step is an answer better than one before it, either greater contribution in maximizing problems or smaller costs in minimizing problems" (Okoye,1998).

In using the Simplex Algorithm, it is necessary to formulate the linear program as a mathematical model.

Table 2: The Elements of Linear Program

Components	Mathematical Model	Explanations
1. Objective function	$f(x) = c_1x_1 + c_2x_2 + c_3x_3 + \ldots + c_nx_n$	c_n – the coefficients of the objective function x_i , i $=\overline{1,n}$ - the variables of the problem
2. Restrictions	$\begin{cases} a_{11}x_1 + a_{12}x_2 + \ldots + a_{1n}x_n \leq b_1 \\ a_{21}x_1 + a_{22}x_2 + \ldots + a_{2n}x_n \leq b_2 \\ a_{31}x_1 + a_{32}x_2 + \ldots + a_{3n}x_n \geq b_3 \\ \vdots \\ a_{m1}x_1 + a_{m2}x_2 + \ldots + a_{mn}x_n \leq b_m \end{cases}$	a_{ij} , i $=\overline{1,n}$ - the coefficients of restrictions b_i , i $=\overline{1,m}$ - right hand side value of the constraint
3. Nonnegativity conditions	$x_1 \geq 0$, $x_2 \geq 0$, ... , $x_n \geq 0$	

After the formulation of the linear program, some steps should be followed to obtain an optimal solution for the linear program. The next step after modeling the linear program is: transforming the linear program from canonical form to standard form (Table 3). There are three possibilities:

- Adding slack variables for every inequality from the linear program. For ≤ inequality, it is necessary a slack variable with a positive coefficient, and for ≥ inequality, a slack variable with a negative coefficient. In the first case, it is recommended to apply the Primal Simplex Algorithm. In the second case, there are two different options: Big M Penalty Method and Dual Simplex Method.

- Adding artificial variables if the slack variable coefficients are negative. Then it is necessary to use the Big M Penalty Method.

- Multiplying the constraints with negative coefficients for slack variables by -1. This form of the linear program can be solved by using the Dual Simplex Algorithm.

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Table 3: Converting linear program from canonical form to standard form

Converting canonical form to standard form	Mathematical description
- Adding slack variables (s_i) – Primal Simplex Method, if their coefficients a_{ij} are positive;	$\begin{cases} a_{11}x_1 + a_{12}x_2 + \ldots + a_{1n}x_n + s_1 & = b_1 \\ a_{21}x_1 + a_{22}x_2 + \ldots + a_{2n}x_n + s_2 & = b_2 \\ a_{31}x_1 + a_{32}x_2 + \ldots + a_{3n}x_n + s_3 & = b_3 \\ \quad\vdots \\ a_{m1}x_1 + a_{m2}x_2 + \ldots + a_{mn}x_n + s_n & = b_m \end{cases}$
- Adding artificial variables (A_n) - Big M Penalty Method, if slack variable coefficients a_{ij} are negative;	$\begin{cases} a_{11}x_1 + a_{12}x_2 + \ldots + a_{1n}x_n + s_1 & = b_1 \\ a_{21}x_1 + a_{22}x_2 + \ldots + a_{2n}x_n + s_2 & = b_2 \\ a_{31}x_1 + a_{32}x_2 + \ldots + a_{3n}x_n + s_3 & = b_3 \\ \quad\vdots \\ a_{m1}x_1 + a_{m2}x_2 + \ldots + a_{mn}x_n - s_n + A_n & = b_m \end{cases}$
- Multiplying by -1 the constraints with negative coefficient for slack variable – Dual Simplex Metod	$\begin{cases} a_{11}x_1 + a_{12}x_2 + \ldots + a_{1n}x_n + s_1 & = b_1 \\ a_{21}x_1 + a_{22}x_2 + \ldots + a_{2n}x_n + s_2 & = b_2 \\ a_{31}x_1 + a_{32}x_2 + \ldots + a_{3n}x_n + s_3 & = b_3 \\ \quad\vdots \\ a_{m1}x_1 + a_{m2}x_2 + \ldots + a_{mn}x_n - s_n & = b_m(-1) \end{cases}$

According Keough Gerard and Thie Paul (2011), the next steps are:
- Creating the Initial Simplex Table:
  - If all $b_i \geq 0$ and the differences from the last row of the table are positive for maximizing problem and negative for minimization program, then stop. The solution is primal and dual feasible, so it is optimal.

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- o If there is a row on the table such that $b_r \le 0$, and $a_{rj} \ge 0$ for all j, there is no feasible solution.
- o Otherwise, determine the pivot by selecting leaving and entering variable.
- Selecting of the leaving variable – the most negative b_i.
- Selecting of the entering variable – the non basic variable that accomplish this condition: Max $\{c_j/a_{rj} : a_{rj} < 0\}$
- Updating the Simplex Table and solving the iteration until the solution meet the optimality criterion.

Theorem 1 (Fundamental Theorem of Duality): Suppose the problems (Eiselt & Sandblom, 2007):

 P (primal): maximizing z= c • x   subject to A • x ≤ b
 D (dual): minimizing v = b • y   subject to y • A ≥ c

1. If the P program has an finite optimal solution, the D program has finite optimal solution too, and their objective function value are equal: max z= min v.
2. If the P program has an unbounded optimal solution, the D program is infeasible.
3. If the P program is infeasible, the D program is infeasible.

Theorem 2 (Complementary Slackness) : Suppose the same programs for Theorem 1 . Then x^* and y^* are optimal solution for P and D program if and only if the following equations are satisfied:

$$\begin{cases} (yA - c)x = 0 \\ y(b - Ax) = 0 \end{cases}$$

Linear programming problems use theorem 1 that formulates a dual problem for a primal problem. The Dual Simplex Method does not assess the formulation of the dual problem. It solves the primal problems that do not have a standard form.

Theorem 2 defines the optimality criterion for the dual program. The optimality criterion for the solution means that the P or D program has an optimal solution if and only if the solution for each program is at the same time primal and dual feasible as well. A basic solution is a primal feasible solution if its elements are non-negative and it is a dual feasible solution if it accomplishes the optimality criterion of the Simplex Method.

The Dual Simplex Method is also used in the re-optimization problem:
- When the right-hand side values of the constraints are modified;
- When the constraints system needs a new restriction.

3.2. Example

Suppose a manufacturing company X, that produce 3 products A_1, A_2 and A_3 and should optimize its production process so that to determine the inventory level for the next period. The company collects data about its resources and constraints in

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the Tabel 4, relates them to the objective (minimizing cost) and formulates the mathematical model for the production planning in order to obtain the minimum value of the objective function and to establish the optimal production quantity and inventory level.

Table 4: The Coefficient's Values of the objective function and constraints

Elements	Criteria	Not.	A_1	A_2	A_3
Objective function	Number of products	x_i	x_1	x_2	x_3
	Unit cost	c_i	20€	30€	15€
Restriction 1	Production time/product	h_i	20'	60'	45'
	Total production time	H	28.760' *		
Restriction 2	The surface/product	s_i	30cm	16cm	20cm
	Total surface	S	10.000 cm**		
Restriction 3	The demand ratio/ product (complementary goods)	q_i	1	2	0
	Total demand	D****	300		
Restriction 4	Price/product	p_i	30€	55€	40€
	Total Sales	T	25.000 €		

*28.720 hours – the company has the working time in three shifts (3 shifts x 8 hours/shift x 20 working days x 60 minutes/hour – 2 hours for maintenance/day x 20 working days)
**10.000 cm – the company has a storage space of 1000 m
**** Total Demand = Expected Demand – Initial Stock + Safety Stock (the initial stock for A_1 and A_2 is equal to 200; the initial stock for A_3 is 0 and safety stock is equal to 100)

The mathematical model for the linear program is as follows:
Objective function:

$$f(x) = 20x_1 + 30x_2 + 15x_3$$ - minimize

Constraints:

$$\begin{cases} 20x_1 + 60x_2 + 45x_3 \leq 28.760 \\ 30x_1 + 16x_2 + 20x_3 \leq 10.000 \\ 1x_1 + 2x_2 \geq 300 \\ 30x_1 + 55x_2 + 40x_3 \geq 25.000 \end{cases}$$

Non-negativity conditions

$x_1, x_2, x_3 \geq 0$

Due to the last constraints with ≥ inequalities and due to the coefficients of objective function, the production program needs to be solved with the Dual Simplex Algorithm. Using this algorithm, the problem has the following optimal solution: $x_1=0$, $x_2=150$, $x_3=419$. This means that the company should produce only the product A_2 and A_3 in order to achieve the minimum cost (=10.781€). This optimal solution

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indicates the stock level, considering the holding cost (space), the production time and the demand. So, the company should have the following inventory level: 150 pieces of product A_2 and 419 pieces of product A_3.

4. The impact of ROA and D/A on inventory level

4.1. Definition of ROA

The return on asset (ROA) is one of the most popular of the financial ratios. It measures how well available resources of the company are used to achieve the highest financial performance.

Jewell and Mankin (2012) summarized the formulas of the ROA in the following table:

Table 5: The ROA formulas adapted from Jewell and Mankin (2012):

Version	Formula
1	Net Income/Total assets
2	Net Income/Average Total assets
3	Earnings Available to Common Shareholders/Total Assets
4	Operating profit/Total Assets
5	Earnings Before Tax/Total Assets

All these formulas have as denominators "Total assets." Total Assets is the sum of current assets (accounts receivable, inventories, cash) and fixed assets (equipment, plants, lands). There are two possibilities for any company to reduce or increase total assets:

- to increase or reduce current assets through optimizing stocks, contracting or reimbursing credits to influence cash, investing in short term bonds, treasury bills, or other money market funds;
- to increase or reduce fixed assets through buying or selling them, depending on the management decision and optimizing inventories.

Optimizing stocks influence both possibilities. Low inventory level frees up cash for other uses (reimbursing credits, short-term or long-term investments), so the current assets will decrease. Low inventory level will also bring reductions in IT systems, storage space, materials handling equipment, so the fixed assets will decrease.

If the denominator "Total Assets" is low, ROA will be high, if "Total Assets" will be high, ROA will get low. A high value of ROA means that the company uses efficiently available resources to generate income. A low value of ROA means that inventory management was bad. The relationship between ROA and inventory level optimization was described by Waters (2009) through the following figure:

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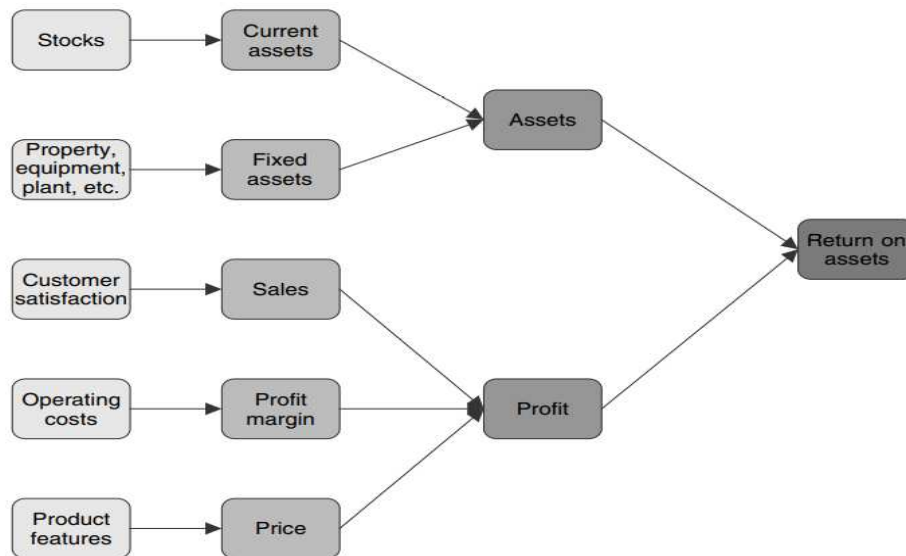
Figure 1 Effects of stock on the ROA
Source: Waters, C. D. (2009). *Inventory control and management*.

4.2. Definition D/A

Debt to asset ratio is a solvency ratio that indicates the participation of debt in financing assets. (Hidayat & Yahya, 2020). It is used to measure the capacity of a company to meet its long-term liabilities (Zelgalve, E., & Berzkalne, I., 2015).
The formulas for these ratios in the previous papers are summarized in the next Table:

Table 6: The D/A formulas

Author	Formulas
R. A. Brealey et al. (2001)	Total Liabilities/Total Assets
E. F. Brigham, J. F. Houston (2009)	Net Debt/ Total Assets
A. Cekrezi and A. Kukeli (2013)	Financial Debt/Total Assets

D/A formulas, as ROA ratios, have as denominator "Total Assets". A high "Total Assets" generates a low D/A ratio, a low "Total Assets" generates a high D/A ratio. A high D/A ratio means that a significant proportion of assets are financed from debt and show a high risk of investing in a company. A low D/A means that the company can meet its financial obligations.
Inventory level, through D/A denominator, can influence debt to asset ratio this way:
- a high inventory level generates high total assets and a low D/A ratio;
- a low inventory level generates low total assets and a high D/A ratio.

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D/A does not refer to long or short-term debts. That means the inventory level cannot impact the debt level if the company is contracting loans for non-current assets. Thus, the numerator of the formula will be approximately the same, but the denominator will be low or high, depending on the stock level.

Short-term debts, such as accounts payable, can be influenced by the stock level. This relationship between short-term debts and inventories can be directly proportional if more acquisitions draw up more debts and inversely proportional if buying more materials can bring discounts, so the debt will decrease. Considering this relation, short-term debts as accounts payable, in this paper are equal to 0 (company buys and pays for the materials at the same time.)

Compared to the impact of inventory level on ROA, there are some differences:

Table 7: Differences of the stock level on ROA and D/A

Impact on ROA	Impact on D/A
Bad impact: - a high inventory level generates a high total assets and low ROA – which means that the company does not use efficiently available resources to generate profits Good impact: - a low inventory level generates low total assets and high ROA	Good impact: - a high inventory level generates a high total assets and a low D/A – which means that company has capacity to meet its obligations Bad impact: - a low inventory level generates a low total assets and high D/A

4.3. Example

Considering the same company X, its ROA and D/A ratios after the production planning, from the previous example, are:

Table 8: ROA and D/A for company X

ROA	D/A
Net Income = 25.000 € (Turnover) - 10.781€ (Optimal Solution) + 3.000 € (Other income)	Total Debts = 20.000 €
Total Assets = 10.781 € (Optimal Solution) + 40.000 € (Fixed + Cash)	Total Assets = 10.781 € (Optimal Solution) + 40.000 € (Fixed + Cash)
ROA = 17.219 € / 50.781 € = 33%	D/A = 20.000 € / 50.781 € = 39%

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If the company expects another value for the turnover in the next period due to the impact of the COVID crisis on the market and wants to evaluate the impact of the modified turnover on the inventory level and then on the ROA and D/A, the managers should simulate another production plans with fourth constraint or turnover constraint adjusted. There is a worst-case scenario when the managers expect a decreased turnover due to the regulations in the logistics systems or the consumers' behavior oriented to save money at that time. In the best-case scenario, where the turnover increase, the companies try to offer price reductions during the crisis and thus, to sell more items.

A. The new ROA < first ROA, the new D/A > the first D/A (worst case scenario)
The company wants to obtain a production plan that achieves the minimum cost and the highest turnover than the turnover from the first model (< 25.000 €). Thus, the new production model, with modified turnover constraint, will be:
Objective function:
$$f(x) = 20x_1 + 30x_2 + 15x_3$$
Constraints:
$$\begin{cases} 20x_1 + 60x_2 + 45x_3 \leq 28.760 \\ 30x_1 + 16x_2 + 20x_3 \leq 10.000 \\ 1x_1 + 2x_2 \geq 300 \\ 30x_1 + 55x_2 + 40x_3 \geq 20.000 \end{cases}$$

Non-negativity conditions
$x_1, x_2, x_3 \geq 0$

Using the dual algorithm, the new model has a different optimal solution: $x_1=0$, $x_2=150$, $x_3=294$. Compared to the first optimal solution, which shows that the company should produce only A_2 and A_3, this solution shows that the company should produce A_1 and A_2 to obtain a lower ROA and a lower D/A. The objective function of the new model is $f(x) = 8.906€$. It can be observed that the minimum production cost from the new model is lower than the first minimum production cost (10.781 €). Therefore, the decrease on the turnover generates an optimal solution with decreased cost.
The impact of the new inventory level on the ROA and D/A can be evaluated in the following table:

Table 9: ROA and D/A for company X according to the A case model

ROA	D/A
Net Income = 20.000 € (Turnover) – 8.906€ (Optimal Solution) + 3.000 € (Other income)	Total Debts = 20.000 €
Total Assets = 8.906 € (Optimal Solution) + 40.000 € (Fixed + Cash)	Total Assets = 8.906 € (Optimal Solution) + 40.000 € (Fixed +

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	Cash)
ROA = 14.094€ / 48.906 € = 28%	D/A = 20.000 € / 48.906 € = 40%

The results show that ROA has a lower value and D/A has a greater value.

B. The new ROA > first ROA, the new D/A < the first D/A (best case scenario)
Considering this case, the fourth constraint will have a right-hand side value equal to 28.000 €.

Objective function:
$$f(x) = 20x_1 + 30x_2 + 15x_3$$
Constraints:
$$\begin{cases} 20x_1 + 60x_2 + 45x_3 \leq 28.760 \\ 30x_1 + 16x_2 + 20x_3 \leq 10.000 \\ 1x_1 + 2x_2 \qquad\qquad \geq 300 \\ 30x_1 + 55x_2 + 40x_3 \geq 28.000 \end{cases}$$

Non-negativity conditions
$x_1, x_2, x_3 \geq 0$

The optimal solution for this production plan is: x_1=191, x_2=54, x_3=481. The company should have the following stock level: 191 pieces of product A_1, 54 pieces of product A_2 and 481 pieces of A_3, in order to obtain the objective function: $f(x) = 12.685$ €.
The production cost is higher than the first and second model.
The impact on ROA and D/A is illustrated by the following table:

Table 10: ROA and D/A for company X according to the B case model

ROA	D/A
Net Income = 28.000 € (Turnover) – 12.685 € (Optimal Solution) + 3.000 € (Other income)	Total Debts = 20.000 €
Total Assets = 12.685 € (Optimal Solution) + 40.000 € (Fixed + Cash)	Total Assets = 12.685 € (Optimal Solution) + 40.000 € (Fixed + Cash)
ROA = 18.315 € / 52.685 € = 35%	D/A = 20.000 € / 52.685 € = 37%

This case is an ideal one because both ratios have the expected movement: ROA increased from 33% to 35%, and D/A has decreased from 39% to 37%. These movements are determined by acting only on the turnover constraint. There are more opportunities to obtain expecting ROA and D/A even in crisis period by modifying the production planning problem:
- Adding a new debt constraint, holding cost constraint, or budget constraint;
- Modifying the right-hand side value of the space constraint or time constraint by scheduling efficiently.

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Table 9 summarizes the impact of the analyzed production model on the ROA and D/A. Case B is preferable to Case A in terms of ROA, due to the increased ROA and decreased D/A, but if the company appreciates that it is more important to have a low D/A (needed for banks or investors), then case A is the best option.

Table 11: ROA and D/A for company X according to the initial and two cases production models

Elements	Initial production problem	Case A	Case B
Linear Model	Objective function: $f(x) = 20x_1 + 30x_2 + 15x_3$ Constraints: $\begin{cases} 20x_1 + 60x_2 + 45x_3 \leq 2 \\ 30x_1 + 16x_2 + 20x_3 \leq 1 \\ 1x_1 + 2x_2 \geq \\ 30x_1 + 55x_2 + 40x_3 \geq 2 \end{cases}$ Non-negativity conditions $x_1, x_2, x_3 \geq 0,$	Objective function: $f(x) = 20x_1 + 30x_2 + 15x_3$ Constraints: $\begin{cases} 20x_1 + 60x_2 + 45x_3 \leq 2 \\ 30x_1 + 16x_2 + 20x_3 \leq 1 \\ 1x_1 + 2x_2 \geq \\ 30x_1 + 55x_2 + 40x_3 \geq 2 \end{cases}$ Non-negativity conditions $x_1, x_2, x_3 \geq 0$	Objective function: $f(x) = 20x_1 + 30x_2 + 15x$ Constraints: $\begin{cases} 20x_1 + 60x_2 + 45x_3 \leq \\ 30x_1 + 16x_2 + 20x_3 \leq \\ 1x_1 + 2x_2 \geq \\ 30x_1 + 55x_2 + 40x_3 \geq \end{cases}$ Non-negativity conditions $x_1, x_2, x_3 \geq 0$
Optimal	$x_1=0$, $x_2=150$, $x_3=419$	$x_1=1.182$, $x_2=0$, $x_3=114$	$x_1=191$, $x_2=54$, $x_3=481$
ROA	33%	27%	35%
D/A	39%	31%	37%

5. Conclusions and Recommendations

In the nowadays pandemic crisis, the necessity of mathematical methods that can solve inventory problems quickly is more and more obvious. The changes in the logistics fields, consumer behavior, and the markets can hustle the decision-makers into problematic decisions. They have to adapt their supply to the changing demand in the shortest time possible. Using the Dual Simplex algorithm in this context has some advantages:
- Solves problems with the non-standard form of mathematical method so the company can solve even the most difficult decision problems;
- If the company wants to modify one element of the initial linear program, and therefore to simulate more production plans, to compare optimal solutions, Dual simplex has fewer steps and helps the managers to obtain the solution in the shortest time.
- If the company wants to evaluate the impact of modifying one element of the production program on the financial indicators (ROA, D/A, in this paper), Dual Simplex makes an easier way for obtaining the solution. From the initial program,

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the company must take the last Simplex Table and go through all the Dual Simplex Steps. There will be fewer iterations, so the company will reduce the solving time and will manage the need for an adapted supply to the changing market.

Using linear programming in evaluating the impact of stock level on ROA and D/A has also some advantages:

- Estimating an efficient production plan, the stock level will be "low, but not too low," expected ROA will be high, and expected D/A gets low. These projections would help managers to evaluate the impact of the production level on the financial ratios and to find the optimal solution that will give good results for financial ratios. Then, investors, banks, and other stakeholders will invest with confidence due to the values of ROA and D/A that meet the investor's requirements;

- Estimating an efficient production program, and therefore high ROA and low D/A can attract more investors, more funds that will increase the financing capacity. This is important for the company, especially when inventory level is a strategic issue (the company needs funds to build a new warehouse for storage).

The limits of this study are:

- Short-term debts on the D/A ratio, such as accounts payable, are not considered;

- ROA considers the inventories at the level of optimal solution from the linear program. It does not take into account the difference between the production level and sales, which is the ending inventory. That means that ROA can be determined using the inventory level with 0 sales;

- Managers should simulate more times until the expected value of ROA and D/A are attained. This paper simulated only three scenarios (initial, A and B), but in fact, the company can have more cases.

These limits could be removed by using a fuzzy number. These numbers will overcome the last limit, due to the possibility of expressing both linear program's elements and financial ratios in interval numbers, triangular or trapezoidal fuzzy number. Thus, if the company uses fuzzy numbers in the linear program, the ROA and D/A will also be expressed in fuzzy numbers. This means that the company can select the low value from the fuzzy number if it meets the requirements or the high value from the fuzzy ROA and D/A if it is preferable.

Further research is needed to evaluate the impact of using the fuzzy number on the relationship between inventory level and financial indicators. Also, it would be interesting to analyze this relationship using the Multi-objective linear programming and the Multi-objective Simplex Method.

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HETEROGENEITY OF FISCAL POLICIES

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Abstract: *Understanding the functionality of fiscal policies, as well as its fundamental role in economic balancing, these are important aspects in terms of protecting and developing the business environment with obvious effects on social life. This study delves into the heterogeneity of fiscal policies to create a delimiting framework for them. The two types of fiscal policies, the discretionary or deliberative fiscal policy and the fiscal policy that act as an automatic stabilizer, were debated and detailed. The characteristics of the two types of policies are offered the way of using government revenues and expenditures as fiscal instruments. Thus, deliberative fiscal policies use instruments in directions strictly defined by the government in the sense of economic expansion or coercion. In contrast, fiscal policies that act as an automatic stabilizer do not require government intervention, acting by increasing the number of payments in times of recession and reducing them in times of economic expansion. Automatic stabilizers operate on the basis of state regulations, although their nature, size and effect have not yet been well defined in the empirical literature. The overall picture obtained in this study by researching the types of fiscal policies has allowed us to understand their functionality and the effects they can produce in the economy.*

Keywords: *discretionary fiscal policy; automatic stabilizer; expansionary fiscal policy; contractionary fiscal policy.*

JEL Classification: *E61; E62; H30.*

1. Introduction

The study of fiscal policy is a desideratum in the context of identifying the particularities that underlie the creation of a fiscal protection against the well-known economic crises. Aspects of the nature of those regarding the reaction of fiscal policies to the fluctuations of the business cycle, the political and institutional determinants, but also the social issues, constitute the interest of the debates and empirical analyzes on this topic. The definition of the concept of fiscal policy has received different connotations, due to its consequences on specific areas of research. A broader definition of fiscal policy has been devised by Bhattarai and Trzeciakiewicz (2017), who argue that it has been used on a large scale over time to stabilize the economy, encouraging the development of societies in a more efficient way, fairer and more equitable. Arestis (2012) frames fiscal policy as an automatic macroeconomic stabilizer that should be based only on certain

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instruments to ensure the broad balance of government expenditures and taxation. For a deeper understanding of the types of fiscal policies and an understanding of their functionality related to the phases of the economic cycle, this article is structured as follows: Section 2 Literature review, Section 3 Diversity of fiscal policies, Section 4 Conclusions, followed by References.

2. Literature review

The applicability of fiscal policies in terms of their characteristics have generated a number of controversies in the literature. An extensive theoretical study was conducted by Günel (2019) who analyzed discretionary tax policy and relations with tax rules. He stated that a policy can be conducted by rules or discretion and fiscal rules are a solution to the predictability and inconsistency of fiscal policy, thus increasing the effectiveness and predictability of fiscal policy. Cristea et al. (2019) studied the determinant factors of fiscal revenues as an important instrument in the fiscal policy application. Fatás and Mihov (2012) conducted an analysis demonstrating that discretionary fiscal policy tends to be acyclic in developed countries and pro-cyclical in emerging countries. Badinger (2009) did not identify any evidence to show that discretionary fiscal policy would have effects on destabilizing inflation. Beetsma (2008) conducts a study analyzing the effects of discretionary fiscal policy stating that most evidence suggests that an increase in government procurement or a reduction in net taxes has a short-term positive effect on economic activity and aggregate consumption and an effect negative on the trade balance. Considering the two types of discretionary fiscal policy, Truger (2015) states that the calls for a more expansive fiscal policy have become stronger, as it becomes clearer that monetary policy alone will not be able to trigger recovery. Weil (2008) emphasizes the institutional enthusiasm for expansionist policies during recessions, which is not matched by the desire for contractionary policies during economic expansion, as the benefits of such a policy are immediately felt, while its costs, future higher taxes and growth lower economic costs are postponed until a later date. Gravelle and Hungerford (2011) conducted a study to identify whether contractionary fiscal policy can also be expansionary, so that the debt problem was analyzed with two options by exposing a still fragile economy to risk by applying a contractionary fiscal policy or exposing to failure by pursuing an expansionary fiscal policy. On the other hand, there are studies in the empirical literature that emphasize the importance and effects of automatic stabilizers in the economy. Andrés and Doménech (2006) state that automatic stabilizers that operate in terms of demand do not compensate for the pro-cyclical movements of aggregate supply, on the contrary, they tend to increase the size of economic fluctuations associated with distorted taxes. The effects of automatic stabilizers were also analyzed by McKay and Reis (2016) and Colciago et al. (2008).

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3. Diversity of fiscal policies

Economic stability or instability, the objectives pursued by governments, the degree of economic development, socio-political factors, as well as the phases of the economic cycle, are a series of elements that have been the basis for identifying different types of fiscal policies. Currently, two types of fiscal policies are known, namely, discretionary or deliberative fiscal policy and fiscal policy that acts as an automatic stabilizer, their components being indexed in *Figure 1*.
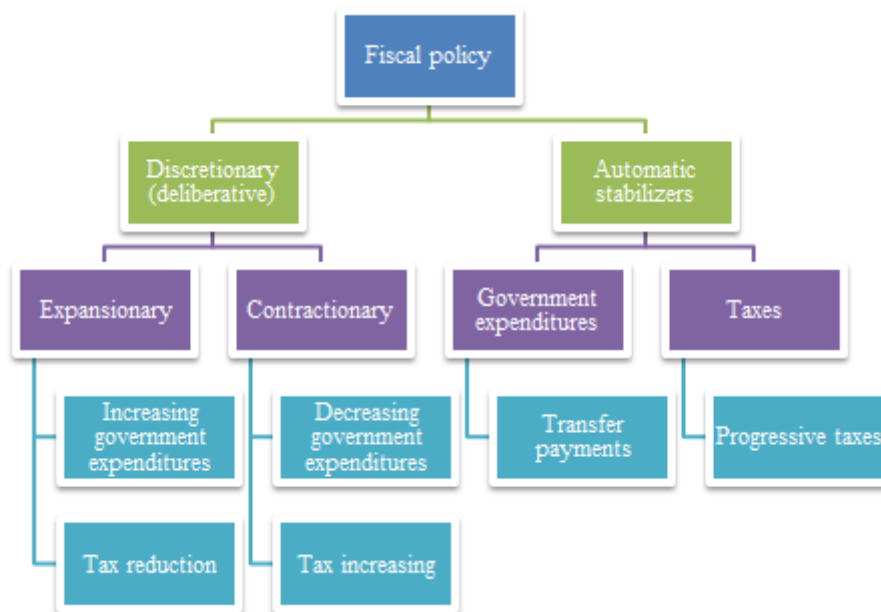
Figure 1: Heterogeneity of fiscal policies
Source: Author processing

Discretionary fiscal policy is classified dichotomously into expansionary fiscal policy and contractionary fiscal policy. The two main instruments of action are government expenditures and taxes that contribute together with other levies to the establishment of government revenues. The impact of discretionary fiscal policy on economic growth was the aim of an analysis by Attinasi and Klemm (2014) in 18 European countries suggesting that the increase in consumption taxes is harmful only during the recession. Arsic et al. (2017) explored the economic, political and institutional determinants of discretionary fiscal policy in 11 Central and Eastern European countries by noting discretionary fiscal responses before and after the global economic crisis, highlighting the existence of a systemic discrepancy between government revenues and expenditures as a consequence of discretionary measures of governments. The heterogeneity of fiscal policies is a prerogative given

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to governments to anticipate risks and apply only those measures that ensure sustainable economic growth. The most used category among the fiscal policy is the expansionist one, characterized by the increase of government expenditures and the decrease of taxes and duties, an approach that inevitably encourages the increase of consumption. Such a practice will make it difficult for governments to maintain a balanced budget, as in the absence of a surplus during expansion periods, these will have to act to reduce government expenditures in response to declining government revenues during the recession. Expansionary fiscal policy is defined by Hebous (2009) as a stimulus of the multi-effect economy, in which the increase of government expenditures leads to the stimulation of economic progress in a closed economy as well as in a small economy. In Bingyang's (2011) view, it is used as a method of protecting the economy in times of recession due to low macroeconomic performance in which supply exceeds demand. Given the universal objective of fiscal policies to facilitate economic development, expansionary fiscal policy is presided over by a well-defined mechanism of increasing government expenditures and decreasing revenues in order to stimulate aggregate demand and thus production in times of recession. risks of amplifying the inflationary process as a result of a crowding out effect. This effect occurs when the economy is closed at full capacity, between the limits of CA 3 and CA 4 in *Graph 1*, and loans are constantly growing. Governments will tend to spend more on private sector lending. In turn, it will be affected by a decrease in investment capacity, with government expenditures having a crowding-out effect on private sector expenditures. The need to identify the effects of increased government expenditures on economic development due to the application of an expansionary fiscal policy, has led to numerous studies. Thus, Chugunov and Pasichnyi (2018) demonstrated that episodes of expansive fiscal adjustments based on government revenue cuts and expenditures increases were more efficient compared to those that relied entirely on expenditures increases, a statement that was substantiated by the analysis achieved in the emerging economies of the Member States of the European Union. Hebous (2009) questions whether fiscal expansion is effective in stimulating the economy following a study that examined theoretical predictions and empirical evidence from autoregressive vector analysis (VAR) to identify short-term effects of discretionary fiscal policy on macroeconomic aggregates. Contrary to the above, Mahmoudzadeh et al. (2017) analyzed the effects of expansionary fiscal policy in developed and emerging countries, arguing that the application of such a policy can lead to economic growth. This assertion is also supported by those identified by Truger and Nagel (2016), who highlighted the adoption of expansionary fiscal policy in most euro area countries since the spring of 2014, when monetary policy could no longer independently help revive the economy. Contractionary fiscal policy is an antithesis of expansionary fiscal policy due to instruments that act as a reverse mechanism to stimulate the economy. Its restriction is due to higher taxes and lower government expenditures. The effect is rapidly visible in the economy due to the reduction in the amount of capital available. Although the measures imposed by such a policy are not sympathetic to the business community and citizens, they ensure a slow but sustainable growth of the economy. Inflationary expectations are much more present than in the case of expansionary fiscal policy because the increase in taxes and fees

will result in higher prices and destabilization of living standards. Auerbach (2002) states that budgetary pressure could destabilize the positive effects of expansionary fiscal policy, however, contractionary fiscal policy will have a salutary effect on economic growth. The usefulness of applying contractionary fiscal policy is argued by Periklis and Pragidis (2015) who argue that the use of government revenues as a tool to stabilize the economy, in the sense of increasing taxes and duties, will help reduce demobilizing influences on production.
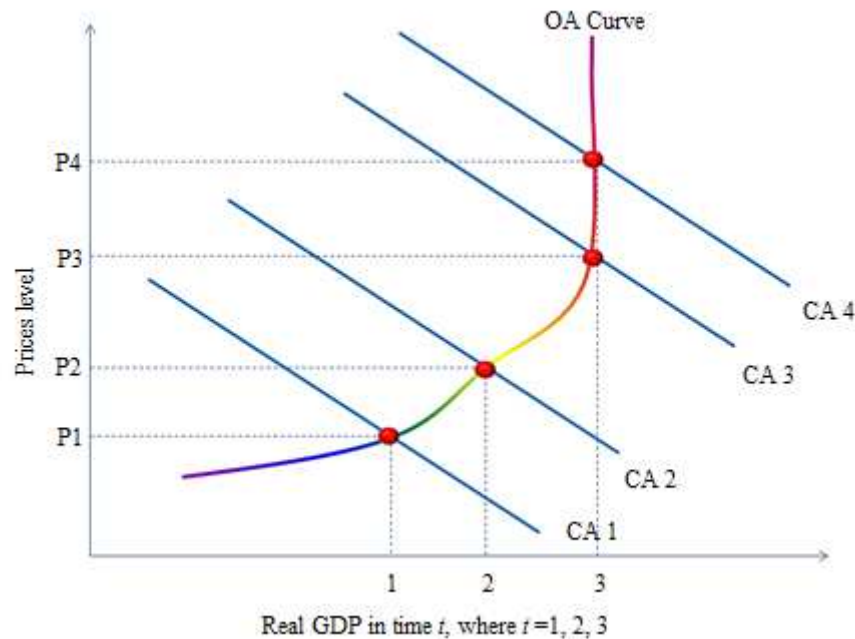
Graph 1: Fiscal policy synchronization
Note: CA represents the aggregate demand, and the OA Curve represents the aggregate supply curve
Source: Author's processing after Carlson, Spencer (1975, pp. 5, 7) in the vector graphics editor Corel Draw

The aspects highlighted by Fatás (2019) contradict the positive effects of contractionary fiscal policy, stating that following the economic crisis of 2008 many European countries were destabilized by their own actions in an attempt to recover, and the application of such policies produced negative effects, predominantly over gross domestic product. Despite the contradictory arguments brought to the efficiency of the application of the contractionary fiscal policy, this is defined by Neto (2017) as an incentive offered to countries facing a budget deficit. However, there are many limitations to this approach as contractionary fiscal policy is characterized by budget surplus, requiring increased taxes and fees while reducing government

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expenditures only during periods of economic expansion to avoid expansionary anticipations and facilitate sustainable economic development.

The second type of fiscal policy is that which acts as an automatic stabilizer. Business cycle fluctuations are spontaneously balanced without the need for government or other decision-making. Tools used as automatic stabilizers are government expenditures through the social transfer system and progressive taxes on corporate income or profits. Dolls et al. (2012) noted that the operation of automatic stabilizers play a key role in stabilizing demand and production. In another perspective, they are defined by Eaton and Rosen (1980) in the light of the classical instruments used in fiscal policy, having the role of harmonizing production fluctuations without the need for discretionary action by governments. In its own sense, the fiscal policy acting in the form of an automatic stabilizer is determined by the interference of government expenditures, mostly represented by transfer payments, with government revenues, which work as a mechanism to reduce changes in the business cycle in the absence of government implications. The automatic stabilizer, which includes the use of progressive taxes, works by setting differentiated rates that are higher where revenues are higher, a result assimilated to periods of economic expansion, and in the event of their decrease during recessions there are also reduced, proportional tax rates with the income obtained. The role of corporate tax, which must act as an automatic stabilizer, was analyzed by Buettner and Fuest (2010) showing that the stabilizing effect is fluctuating over a business cycle and tends to increase during periods of recession. Regarding the role of government expenditures as an automatic stabilizer in the economy, most of the adversities in the empirical literature are focused on transfer systems in the field of social unemployment insurance. They act as a buffer by increasing the number of payments in times of recession and reducing them in times of economic expansion based on a series of state regulations, thus eliminating government intervention in this process. In an analysis of 20 OECD member countries, Darby and Melitz (2008) found that social costs related to age and health, as well as other benefits for the disabled, react to fluctuations in the business cycle in a stabilizing manner. The results of this analysis are in opposition to those found by Arze del Granado et al. (2013) according to which social expenditures follows an asymmetric pattern in developing countries, these effects being acyclic, in addition, the degree of cyclicality is higher the lower the level of economic development.

4. Conclusions

Fiscal policy must be applied in order to restore economic balance and reorient towards sustainable development. Its applicability has multiple implications on socio-economic life. Taking into account the etymology of the word discretion, this type of fiscal policy acts as a prerogative recognized by law for a government to take measures to balance the economy. There are a number of differences, both among practitioners in the field and among academics, regarding the effects that expansionary fiscal policy and contractionary fiscal policy have on the economy, as well as on the extent to which they can bring necessary benefits to balance or development without exceeding them. The functionality of automatic stabilizers is

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positioned in a sphere of uncertainty. Their nature, size and effect have not yet been well defined in the empirical literature. Establishing benchmarks in order to identify their relevance in balancing the economy as a result of cyclical fluctuations can improve the expected projections. Moreover, the clear delineation of the effects produced individually by each automatic stabilizer will help to formulate realistic assertions to be framed in a concrete mechanism in which they work together. Understanding the nature, size and delimitation of their effects will contribute to the normalization of business cycle fluctuations, which currently cause major management difficulties for many governments.

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SECTION: *MANAGEMENT, MARKETING, ECONOMIC INFORMATICS AND CYBERNETICS*

THE IMPACT OF WORKING FROM HOME ON PRODUCTIVITY. A STUDY ON THE PANDEMIC PERIOD

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Abstract: *The study on working from home productivity has received much interest from researchers in the recent years. Numerous studies have found working from home to be productive. However, now with the coronavirus pandemic turning many more people into remote workers overnight, is working from home still productive? This is what the current study aims to find, taking into account that the employees have no choice during this pandemic period; they are forced to work from home. Before the pandemic, the employees were consent with working from home and usually they were coming in the working environment at least one day a week, but usually two or three days. Full-time working at home may be different. Moreover, the employees are now forced to work from home without any training or preparation. Most of them have never worked from home before. Even if the employees worked from home occasionally and they are trained for it, yet they are not prepared for such a long period away from their working environment. Working from home still has its advantages: there are no face-to-face meetings, no distractions from co-workers, no annoying managers to boss them around, no wasted time in traffic, no worries about the children's safety, as they are at home. Besides the advantages, working from home comes also with some disadvantages. The specialists worry about the negative effects, such as an explosion of mental health issues that could also generate physical health problems. The current study focuses on finding the advantages and disadvantages of working from home, but also on ways to make working from home more effectively. For this purpose, a questionnaire was administered to the employees from three private companies in Bihor county. The final results indicate a negative effect of working from home on productivity. We have found the main benefits and challenges and also the ways to improve productivity when working from home.*

Keywords: *working from home; remote worker; productivity; coronavirus pandemic; benefits; challenges.*

JEL Classification: *M50; M54.*

1. Introduction

Working from home is a modern way of working, very common in the current conditions. Even before the pandemic, this way of work had begun to grow. Actually, working from home refers to an office at home. So, instead of a traditional office with colleagues, the employees move their workplace at home, but still they do the same work.

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important to set up a work system and not leave things to chance. Some aspects can positively affect the level of productivity, and some others, negatively.

The main advantages when working from home are:

- Balance between personal and professional life

Employees who work from home have a much better balance between personal and professional life. This is due to efficiency. They can organize themselves, solve their tasks when they want, leaving more time for personal life.

- No time wasted in traffic

Many employees who work at company headquarters mention that the time spent in traffic to the corporation, which is even out of town, tires them and lowers their productivity. For example, according to numerous studies, in Bucharest, employees spend an average of 2 hours in traffic, to and from the office. Even if they do not work during that period, employees mention that they feel tired and do not have time for relaxation activities at the end of the day.

- Flexibility

Another advantage of working from home is the flexibility that employees have. They can start work earlier to have more free time in the evening or they can choose to work after 10 am to get more hours of sleep.

As specified in the Labor Code, employees working from home can organize their own program, with the consent of the employer. The employer establishes with the employees the way he/her can check them, most often using a program that can be installed directly on the computer.

- Increased productivity

This is a benefit for both employees and employers. Two-thirds of managers mentioned that employees who work from home are more productive than those who work at headquarters. This is because people who work from home are not distracted by colleagues or superiors. This way, they can finish their tasks without being interrupted.

In the light of these advantages, the idea of working from home sounds nice, but there are also negative aspects to this way of working. The main disadvantages are:

- Lack of organization

Management plays a key role in any company. A manager must organize and coordinate a team. Although communication can be done online, employees who work from home often have problems organizing tasks because they lack effective communication with the manager. In the online environment, more information may be lost, and employees may not receive all the necessary details. Until recently, working from home was a relatively new trend in Romania, but, in the new conditions required by the pandemic period, it was adopted by more and more companies.

Employees who want to work from home must be organized and have a schedule to follow. Although flexibility and work environment attract many candidates to work from home jobs, other candidates prefer to work from the office, where they can be coordinated by the manager and where they have all the necessary resources at their disposal.

- Social isolation

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Employees who work from home feel isolated. Having no one to communicate with, this feeling of isolation can lead to decreased morale and efficiency. Therefore, it is important for employees to keep in touch and communicate daily with superiors or colleagues. Even if this communication takes place on social networks or on business platforms, employees will feel that they are part of the team.

- Distractions at home

A common problem among employees working from home is the distractions they have at home. One the one hand, given the fact that children learn from home during this period, they can distract their parents from work, disturbing them with school problems, especially if they are younger or with other kind of problems. On the other hand, the involvement in household chore can be another distraction. Because they are at home, many employees feel compelled to cook or tidy the house while working. Unfortunately, this leads to low productivity and more distractions than those caused by office colleagues. To avoid this disadvantage, employees working from home must make a clear schedule and follow it daily.

- Separate workplace is needed

In order to have a quiet work atmosphere, employees who work from home must have a separate space. Children screaming, being demanding while the parents are working, a package delivery, a washing machine beeping, other this kind of things can be disruptive factors in the situation when the workspace cannot be a separate one.

3. Research Methodology, Results and Discussions

A questionnaire was sent by email to 150 employees of three large companies in Bihor County. 57 people completed the questionnaire, which means that response rate was 38%.

Our objective was to find out how working from home impacts productivity during the pandemic period.

The questionnaire consisted of 10 questions:

1. How often did you work from home before the pandemic period?
2. How satisfied are you with your current work from home arrangement?
3. How full-time work from home arrangement influences your productivity?
4. What work from home arrangement would you like?
5. Do you have all the equipment you need in order to do your work from home?
6. Do you have a dedicated workspace where you can work at home?
7. Do you keep to a regular working schedule at home?
8. Do you consider you have more distractions at home or at work?
9. What is the biggest benefit when working from home?
10. What is the biggest struggle with working from home?

We analyzed the answers of these questions and the results were as follows:

The most popular response to the question refers to how often the employees worked from home before the pandemic period revealed that 62 percent of the employees had never worked from home before, while just 4 percent stated they had a full-time work from home job before.

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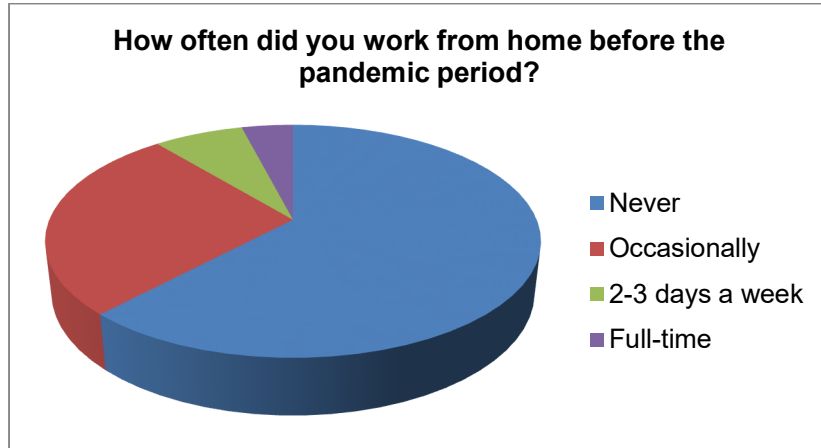
Figure 1: WFH before the pandemic

When asked about their satisfaction related to the current work from home arrangement, just a 13 percent claimed that they are very satisfied, while 27 percent claimed they are very dissatisfied.
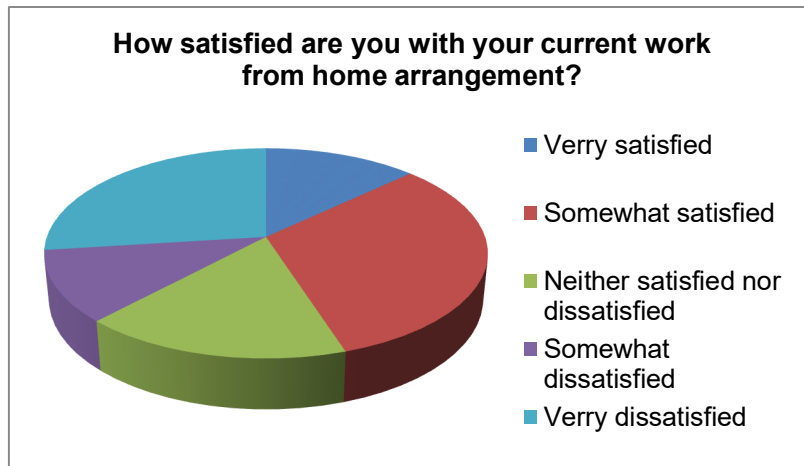
Figure 2: Level of satisfaction with WFH

A large percentage of employees who work from home, 57 percent, consider that this way of work negatively influences their productivity, while 43 percent consider that their productivity was positively affected.

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While more than 50 percent of the respondents, would prefer working from home 2-3 days a week, a small percentage want a full-time work from home job.
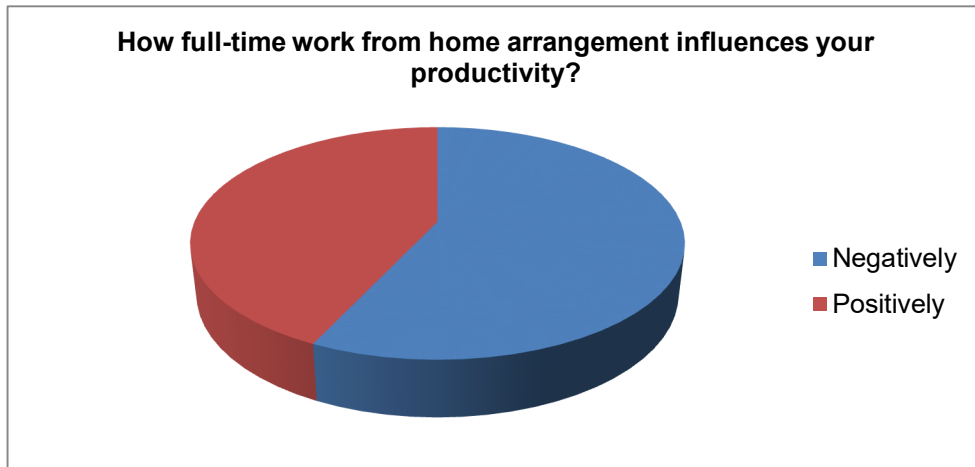
Figure 3: The influence of full-time WFH
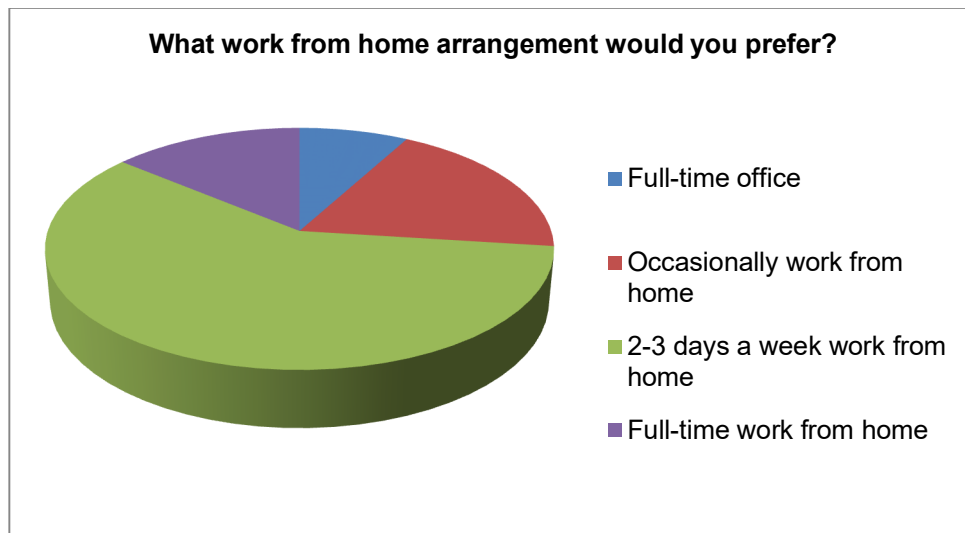
Figure 4: Preference for the way of WFH

23 percent of the respondents donot have all the equipment they need in order to do the work from home. As the study was conducted at the begining of the pandemic period, we can consider that they were not prepared for this situation.

Regarding the workspace we learned that 38 percent donot have a dedicated workspace where they can work at home. This is somewhat explicable, given that 62% have never worked from home before the pandemic period.

About the same amount of people (43 percent) reported that they donot keep to a regular working schedule at home. Especially women are tempted to take care of household chores, so that they are not able to have an orderly work schedule.

More than 50 percent of the respondents said they have more distractions at home than at work. Most likely, a large number of employees have children who stay at home and are disturbed by them during working hours.

Regarding the biggest benefit and challange, the results are presented in figures 5 and 6.
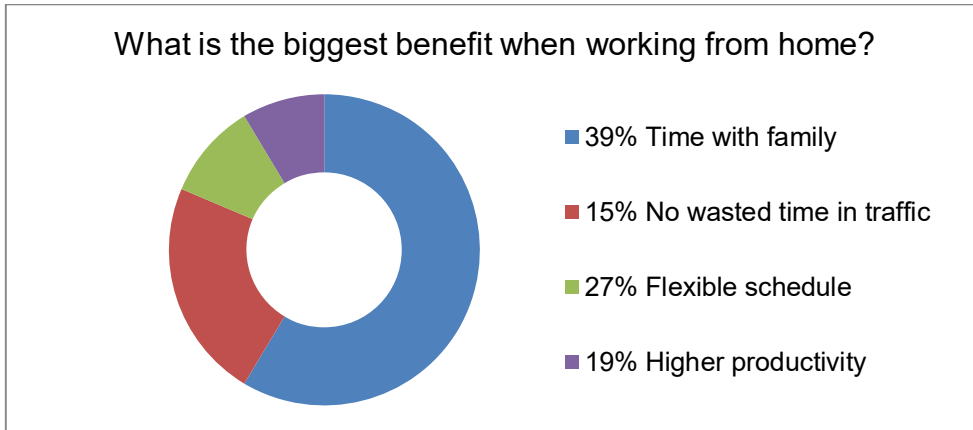
Figure 5: The biggest benefit when working from home
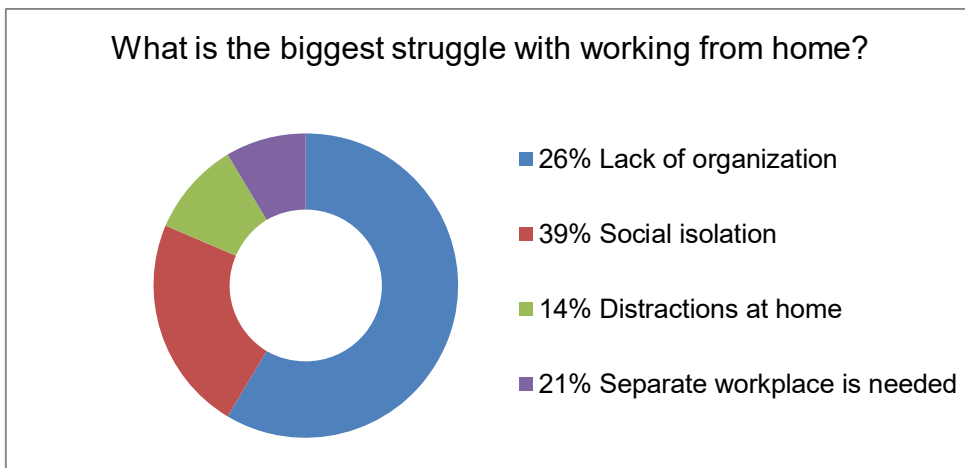
 Figure 6: The bigest struggle with working from home

Analyzing the biggest challenges when working from home, we found some ways to be more productive:
- Make a schedule and stick to it

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- ▪ Focus on what you have accomplished at the end of each day to keep yourself motivated
- ▪ Reward yourself for your wins
- ▪ Take regular breaks
- ▪ Stay in contact with your colleagues and other people
- ▪ Create a dedicated workspace and let your family know that you are unavailable during work hours

4. Conclusions

Working from home is a challenge, because it is difficult to stay productive and show professionalism with no boss to boss you around. The communication with colleagues and clients is difficult when you do not have the necessary tools, but however, work on the remote system had grown even before the pandemic. Even before the pandemic, in many countries, about 50% of employees solve some of their work tasks at home, and despite the fact that most have the opportunity to work from anywhere, a very large percentage of them choose to do so from the comfort of their own homes. Fortunately, there are many applications that make homework easier during this period; employees just need to show dedication and want to learn how to use them. It all comes down to productivity, pros and cons.

Working from home can mean more things in a shorter time, stress reduction, well-being. However, this does not happen automatically; if the situation is incorrectly approached, life can become a nightmare, because that professional-personal balance that everyone longs for disappears, which most of the time, employees have if they work 8 hours a day at the office.

However, surprisingly, following the analysis of the answers to the questions regarding the effect of work from home on productivity, it turned out that it is negative rather than positive. We consider that the main reason for this result is that the study was conducted at the beginning of the pandemic period, when the employees were forced to work from home, most of them not being familiar with this way of working.

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QUALITATIVE STUDY OF A COMPUTER MODEL IN THE CYBERNETIC FIELD

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Abstract: *The starting point of this study described in this paper is the desire to create a model that will be useful in various fields related to mathematical modeling and that will contain a new perspective of what we call and know about feedback. This feedback has appeared in cyber studies. The modeling of this computer system involves the transfer of information from the data of a problem written in a practical language to the language specific to the feedback contained in cellular automata and algebraic fractals. Both cellular automata and algebraic fractals are fundamental in the development of technical solutions used in the fields related to quantum mechanics. The bases of these researches are from the articles conceived by Prof. Dr. Colceag, in which he mentions information fields, structural fractals, but also about modeling and the models that emerge from this modeling. All this complex modeling structure will describe more complex objects with characteristics such as: feedback cycles, projective relationships in the projective space and specific transformations that describe how this model was obtained, these being common features for everything that means description and modeling the phenomena of physics, chemistry, biology, economy etc. At the beginning, such a model focuses on feedback cycles, and will also develop commutative diagrams based on automorphisms. After this first phase, the model is organized on progressive levels where its structure is divided into new and stable structures that self-determine, this leading to a fractalized modeling in which a feedback structure is inserted in the form of a loop.*

Keywords: *feedback; modeling; cybernetic system; information space; algebraic fractals; cellular automata.*

JEL Classification: *C63; C68; C88; D59; L63.*

1. Introduction

The motivation for carrying out this work is to find a variant of qualitative modeling of a computer system, built on the fractals used to generate feedback. Basically, this system is a feedback loop, based on a mathematical procedure that includes the theory of cellular automata. It is able to offer technical solutions in the development of economic, biological, IT applications, etc.
John von Neumann (1948), present at a conference, Hixon Symposium, introduced the idea of the theory of automata, specifying that it is not a theory, but rather "an imperfect articulated and difficult to formalize" ("The computer and the brain", written in the years 1955-1956, but published after his death). Also, based on implicit

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mathematics, both logic and probabilities, there are interesting points of view that lead from discrete to continuous.

Viewed from the informational perspective, a cellular automaton is an abstract object containing two intrinsically linked components, where the first component is represented by architecture, the Universe, seen as a utility function, and the second component is practically represented by a finite automaton, having at each node of the network a copy of it. (Delorme, 1999)

From the research done by Colceag (2001), the theory of cellular automata claims that the Universe is an information and that every structure in the universe is composed of a mini-computer, and these mini-computers induce a universe of information.

He also claims that information has the following characteristics:

- It is considered a computerized unit, capable of connecting information in a predictable way.
- It is essentially a complexity that can reveal different behaviors in a different situation.
- It can connect to other information contained in cellular machines.
- Is able to develop in different stages of complexity.
- It is universal and can characterize any phenomenon (including life).

This property of universality can provide another type of mathematical approach, being able to detect informational connections in different types of structures. This new mathematical approach could be used in complex systems in different fields, such as living structures, economic processes, physics (Colceag, 2001).

To understand how a complex system works, viewed from different perspectives and at different levels of design, a different approach is needed. This approach will be done using structural algebraic properties of space in which different levels of complexity can be created on the same feedback generation system (Colceag, 2004).

2. State of the art

According to the initiator of cybernetics, Norbert Wiener (2019), feedback is an intelligent behavior that can be simulated by machines (robots), but not only, being applicable in various sciences such as engineering, computer science, systems control, neuroscience and many other fields.

Hlaváč (2019) states that the functions that describe the feedback cycles are connected with vectors, in a circuit, and the connection of the structures is at the vertices. By applying the vectors characterized by the functions of the structure, a modeling of the functionality of the structure itself will be obtained. This type of modeling characterizes the function of a global structure, from the same level of perception, but also from the same perspective.

The stages of the decomposed feedback cycles characterize a model of informational interconnection, because this decomposition is a perspective that describes the behavior of a basic mathematical theory, namely a universal projective space. Basically, this design space is universally used, because the relationships

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between different objects are universal, and this mathematical perspective describes a basic dialogue for the development of algebraic fractals (Colceag, 2001).

Research by neurologists uses projective space to describe neural networks. This type of modeling provides a good description corresponding to high-precision experimental data. This is why this type of fractal type (algebraic fractal) used in this paper could correspond to a real situation that describes a macro-structure, resulting from neural structures modeled in projective spaces (Colceag, 2001).

There is thus a group of automorphisms of projective space, consisting of a set of equations:

$F1(x) = x$;
$F2(x) = 1-x$;
$F3(x) = 1/x$;
$F4(x) = 1-1/x$;
$F5(x) = 1/1-x$;
$F6(x) = x/x-1$

A feedback loop can result from this group of equations (Colceag, 2001).

Grundhöfer, T. and Stroppel, M., (1991) argue in their research that large groups of automorphisms, in the study of geometry, it is often desirable to limit the action of the group to a certain subgeometry.
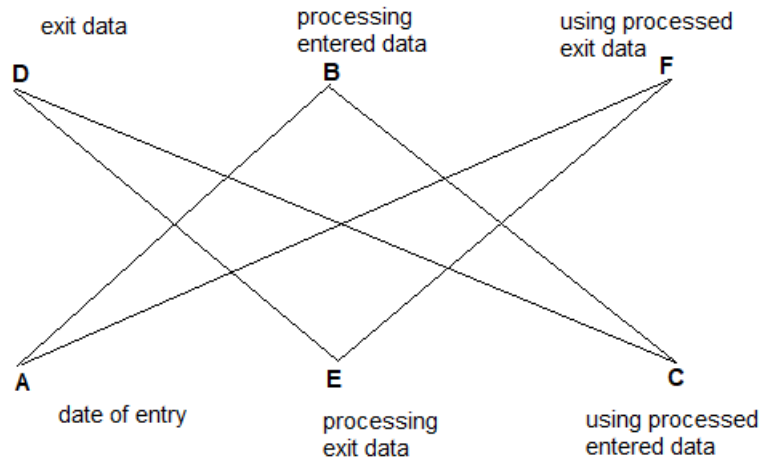
Figure 1: Feedback cycle
Source: Colceag, 2003, Information Fields, Structural Fractals

Colceag (2003) in his research demonstrates that based on the set of equations above, there is an example in which two parallel mirrors will reflect an image to infinity, and the reflections created by them are feedback cycles that will be transformed into new cycles. feedback, but this time of a higher order, being isomorphic with the first subgroup of equations (F2, F3, F6). Thanks to this model, we are subjected to a lesson, namely: a small amount of information can change the

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balance of information by creating information storms (catastrophe theory). It also gives us an insight into what mobile phones will really mean, given the structure of the dialogues that form feedback cycles.

From Colceag's (2001, 2003) model of feedback cycles and cellular automata formed by such cycles, it appears that the planetary ecosystem has its own intelligence and that these relationships can be described today using computer programs and algebraic fractal theory that describe behavioral feedback cycles.

Various mathematical models have considered the Universe, from different scientific philosophical perspectives, as a logical Fuzzy universe, using a probabilistic structural approach, described by Feinman in its entirety, or a universe that is described by equations, according to Maxwell's elasticity hypothesis. All these perspectives have led to a quantum mechanical universe.

In 1874 Pasteur said: "Life, as is known to us, is a direct result of the asymmetry of the universe or of its indirect consequences. The universe is asymmetric." The energy of the universe is constant.

The subjectivity of the Universe, vis-à-vis entropy and the relationship with information and irreversibility, are currently viewed from the perspective of a quantum measurement problem. (Bhandari, R., 1976)

Nomura (2011) argues in his research that the entire universe is "a quantum state defined on its cones of light in the past bordered by apparent horizons", based on practical quantum mechanics, which plays a key role in regulating infinity. In this case, the predictions do not depend on how space-time is parameterized, as it should be if we were based on the theory of quantum gravity.

Linde (1990) argues that our essence is a unique and well-known object with a fractal dimension of space in the Universe, being in itself a model of chaotic inflation in the great Universe. This model is essentially a fractal model due to the stochastic branching of the inflation process in time and space.

In Colceag's theories (2001, 2003), it is reported that the relationship between space and time can be characterized by quantum feedback cycles.

If we divide the feedback cycles into factors, we get the description of an information interconnection model, because this perspective describes the behavior of a basic mathematical theory. This mathematical theory contains six functions that represent the subgroup of automorphisms of projective space and can be composed as follows, and can be permuted circularly:

Table 1. Composition of functions (Colceag, 2003)

Func	f1	f2	f3	f4	f5	f6
f1	f1	f2	f3	f4	f5	f6
f2	f2	f1	f4	f3	f6	f5
f3	f3	f5	f1	f6	f2	f4
f4	f4	f6	f2	f5	f1	f3
f5	f5	f3	f6	f1	f4	f2
f6	f6	f4	f5	f2	f3	f1

Source: Florian Colceag, Information Fields, Structural Fractals, 2003

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In his research, Colceag, (2003), explains the essence of each function and what each function means, as follows:

- f1 is the identity of the function;
- f2 is symmetry;
- f3 is the inversion;
- f4 is the rotation of 60 degrees;
- f5 is the rotation at 120 degrees;
- f6 is polar;

We can see that any row or column consists of feedback cycles obtained by circular permutations. Due to the fact that the lines are obtained by circular permutations of the first line, it is an implicit argument for rotations in cubic structures (Colceag, 2003).

Looking more closely at these feedback cycles, we can see that there are four categories of cycles with symmetric properties, and in practice, there is a composition table for a new set of functions starting from the next level of complexity of algebraic fractals, identical to composition table for the initial automorphisms in the projective space (Colceag, 2001, 2003)

We can project an approximate picture of the complexity of information, if we observe that in the structures of life, the information contained reveals different components for different objects. From this complexity we can say that the composition of the functions is also differentiated by different components. Hence the belonging of a similar situation that appears in the structure of life, where there is practically an algorithm transmitted as a processed informational message, if it is a complex informational structure. (Colceag, 2001)
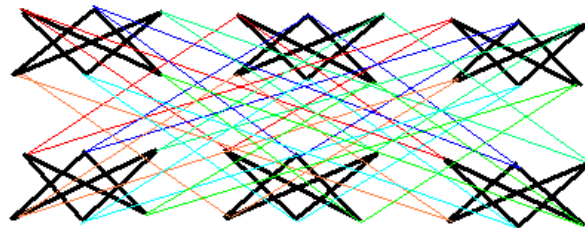
Figure 2: The way information is connected in a feedback cycle
Souce: Colceag, Algebraic Fractals - Fractal Varieties, 2001

Colceag (2001) argues that the new object is built from each generator, from each set that has the same place in the circuit, and the variant obtained by permutation, will give another type of complex cycles, more complex than the first set. This new level of complexity can lead to another given the different connections and sets of phenomena.

Returning to cellular automata based on algebraic fractals, the circulation of information is described by two models:

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- Fixed model - described by hypercubic matrices, structures with border at n-1.
- The mobile model - being obtained by combining fixed structures, an example could be the automorphism.

There is a possibility that information can be shared and collected at different points on the faces can be analyzed only with the help of computer simulators (Colceag, 2001).

Cellular automaton models have such high computing power that they can emulate universal Turing machines based on computational theories and complexity. In recent theories, Chua has shown that some of the models of cellular automata are capable of manifesting themselves as Turing machines in universal calculations, studying Wolfram's empirical research. At the same time, Chua introduced a method of generalizing cellular automata through the paradigm of cellular neural networks, which have performance in massive parallel calculations (Chua, 2005).

Also, Colceag (2001, 2003) stated that there is a second possibility in which the input data of the second cycle correspond to another automorphism that uses the output data of the first cycle. In this case, the two automorphisms will be composed of each other. The composition of two cycles belongs to the next fractal level. At this fractal level, information about compound automorphisms will be divided as follows: one part will be used in the metamer of the second, the other part will be eliminated. The deleted information will create a lateral connection starting from the junction of the two metamers, which will be able to develop a new informational structure. These metameric structures, which provide a different composite structure, in which the nerves and inner information contained in two vertebral sections can give external products are derived structures. This pattern can be seen in the membrane structures connected to the DNA structures, the lateral bones connected to the vertebrae, etc. From the perspective of algebraic fractals, both the structure and the information are formed by cycles or feedback circuits that can be composed of each other, giving a visible result in changing the structure.

From this research, Colceag (2001, 2004) states that the information units in cellular automata are adequate, and the concept of feedback cycle and algebraic fractals, combined, in a theoretical approach, provides a feedback cycle that can be characterized mathematically. in different isomorphic ways.

For example, if we characterize a set of six elements as a feedback cycle, in which three elements determine the other three and each other, we say that this set of six elements is a cycle, only if the elements are operated in order to get the neutral group element. The relationship between these types of objects characterizes the grammar of internal connections, and due to the universality property, in feedback cycles, there is a relationship between cycles and circuits (Colceag, 2001).

The example of a group of automorphisms describing the feedback given by sets of four points is studied, so that each automorphism includes such feedback, but expressed analytically. If these rules have universality in their construction, they will normally be found in other different structures, such as biological or social (Colceag, 2001).

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Moreover, there is an induction model in finite cellular automata, which contains a selection stage (data entry), a property analysis stage (data entry processing), an information structuring stage (data usage), a data entry stage expression in a formula (output data), an analysis step using the formula (output data processing) and finally a complex structuring step using the previous steps so that there are connections between the steps with the same functionality (Figure 1) . All these connection networks developed using the same algorithms form finite automata capable of describing complexity in algebraic fractals (Colceag, 2001, 2004).

Fractal visualizations in cellular automata are not new: Buckminister Fuller proposed an architecture built with components that can have a recursive or fractal structure. The macro-level structure, the "tensile integrity tensor", is a rigid structure constructed of a tension assembly and a compression element. The compression elements of the solid abutments are insulated from each other, held together by the tension elements. In one of its variants, Fuller noted that in the macro-tensegrity mast, each individual solid abutment could be replaced with a miniaturized version of the macro-tensegrity mast. And then each of the solid miniature abutments can be replaced with a miniature tensegrity mast and so on at the atomic level. Thus, integrity structures may have a fractal substructure (Hameroff, 1978).

From a mathematical point of view, Colceag (2001) argues that algebraic fractals describe the intimate structure of information in a fractal way, and both metal theory and feedback are complementary. The graphical theory of feedback cycles loaded with specific functions presents the same informational reality from a different angle. The greatest benefit of developing this theory could be the possibility of modeling life phenomena, including social phenomena, cellular phenomena, organisms or colonies. Feedback cycles could provide insight into the causes of change, degeneration, or death (Colceag 2001).

3. Conclusions

In conclusion, I specify that the main objective is to achieve a cybernetic model based on fractalization, mathematical modeling and feedback. The creation of this general model is useful in certain processes (economic, IT, etc.), having applicability in different fields.

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AESTHETIC INTERFERENCES IN ORGANIZATIONAL COMMUNICATION

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Abstract: *The paper presents some philosophical practices and categories that can be successfully applied in organizations, trends that come from the openness manifested by aesthetics, a field of philosophy that although initially was dedicated to the art and concept of beauty, now it shows an opening for everyday life, where the interpersonal communication is present. The application of concepts and categories specific to aesthetics was developed in the form of applied philosophical norms and concepts, and will positively influence the communication process that takes place in organizations at all its levels. The aesthetic concepts may be involved in other activities of the organization, such as marketing, building branding or in promotion and advertising actions, or active participation to building messages and press communicating, preparing the company's mission statement, organizing events, presence and promotion of the organization in online, activities that will take into account and compliance to some rules derived from aesthetics. The elements taken from aesthetics are the form of some categories, defined since antiquity by Aristotle, synthetically reformulated by Kant, and contemporary, they are adapted to other forms of the social application, in a new applied concept called the organizational aesthetics, which can be successfully introduced into the practice of any organization, with beneficial effects on the organization as a whole, but also on the community in their areas. The introduction of the new concept of aesthetics applied in organizations can have a wider area of implementation than that of organizational communication, such as social actions of the organization, with effects in developing the social responsibility applied in the community and to increase the organization's reputation, both within the community and in the business environment where it is located. The paper also indicates some adaptations of organizational communication for periods of crisis, with the recommendation to include in the communication process rules and concepts specific to applied aesthetics, in order to maintain the current trend of including them in business consultancy, offered in the form of specialized services of philosophical practice, through the new specialists called the organizational philosophical consultants. Other philosophical practices and the ethics applied in organizations are briefly presented in the paper, projected to support leaders and managers in making optimal decisions, which can benefit from professional organizational consulting and ethics services, which are promoted through a new specialization in Romania, that of the philosophical counselling and the consultancy applied in organizations and communities.*

Keywords: *organizational communication; aesthetic; marketing; philosophical consultancy; organizational aesthetic; crisis communication.*

JEL Classification: *D83; M10; M31.*

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1. Introduction

The paper shows the role that aesthetics can play, as a philosophy of beauty, expressed by philosophers in the applied field of arts study, but extended to other fields, reaching an aesthetic seen as part of everyday life (Bejan, 2014) and through this philosophical approach, art has undergone a paradigm shift, in the sense of being seen as an investment, which brings us closer to the field of business, a reason to analyze whether aesthetics can be part of everyday human activities. Starting from the option of involving aesthetics in everyday life, the question is whether philosophy can be applied in the process of organizational communication, by introducing philosophical categories and work elements specific to aesthetics, and to conclude that it can be included in the communication process that has place within organizations, to amplify and support the message sent by the organization, in the various forms, becoming an integral part of the public communication of organizations or institutions.

The approach of the paper starts from the premise that, like interpersonal relationships which are based on communication, the organizations are concerned to build their own communication system, carried out in public, where the connection takes place with society but also with the state authority. This process of the organizational communication will be subject to formal and substantive requirements, which may also interact with some categories specific to aesthetics, as part of a philosophy applied to the organizational field. We consider identifying the interdisciplinary links that can be built between aesthetics, seen as a philosophical practice, and organization-specific communication, and will be presented their characteristics to emphasize the need for their interference, both used to optimize and improve the communication process in organization, carried out both inside and outside it.

2. The organizational communication: approaches, objectives, forms

The organizational communication is a process present in any economic entity or institution, being the subject to permanent requirements for development, improvement and adaptation to the evolution of the community and society where it is located. The analyzed communication is one based on interaction, which is based on people working within the organization, from the manager and management team, to all employees, who are concerned with lucrative activities, in accordance with the purpose and stated strategy of the organization.

We thus highlight some approaches to the importance of communication within an organization, as they have been presented by other researchers in the field, namely: the mechanistic approach, which aims to achieve strict objectives; another is the perspective of developed human relationships, which focuses on the person and not on goals; the perspective offered by information systems, another approach promoted by Karl Weich, which highlights the organization as a system open to the environment; the cultural approach, identified by Clifford Geertz and Michael

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Pacanowski, which introduces the concept of culture, which is seen as a metaphor for organizational life, and the manager as an agent of change; as well as a critical approach, developed by Stanley Deetz, which notes the differences between information and communication, but also develops concepts specific to corporate organizations, such as strategy and consent, considered elements of a camouflaged control used by managers, or issues of employee involvement even the concept of democracy, if it can be used in organization (Griffin, 2019, 337-384).

Communication within an organization pursues the several main objectives, that can be expressed as follows: transmission of information, expression and facilitation of belonging to the common values of the organization, fostering the development of cooperation with other entities or institutions, identification of the role of the communicator communication skills, the ability to generate the collective identity of the organization, the acquisition of a system of rules, seen as rules of conduct of the communication process, as well as the development of relational perspectives derived from the communication process (Mucchielli, 2008, 85-87).

The main forms of organizational communication can be analyzed according to the destination of information, first is the internal communication, which develops interpersonal relationships between all employees, being based on the flow of information between them, being part of the management system of organization; and second is external communication, of the public or community type, which ensures the connection of the organization within the society (Haineș, 2008).

The strong organizations are those that can develop their own communication capabilities and structures, being concerned in defining their own public communication policies and strategies, aiming to constantly adapt to the requirements of the community and develop an organizational culture, which will increase the organization's reputation.

The designated department for the communication process, for internal and external areas, is the first structure of the organization that can use the facilities of practices inspired by aesthetics, which can take specific characteristics and categories of work, in order to frame the message and from an aesthetic point of view, which will amplify the quality and performance of the communication process. The argument we make is that the recipients of the information or message transmitted are always people, in different positions in the community, institutions or other organizations, and who react naturally to those stimuli that define the concept of beauty, considered to be the main the field of work of aesthetics, which has recently become an applied practice of philosophy.

3. Aesthetics, seen as a philosophical applied category

Tudor Vianu is the Romanian philosopher who initiated the teaching of aesthetics in the Romanian university environment, presenting a course in which he defined aesthetics as "The science of artistic beauty", debating the theme from the point of view of a philosophical interpretation of the work of art, what are the aesthetic categories of beauty, stating that "the so-called aesthetic categories are therefore outside the aesthetic sphere of art" (Vianu, 2011, 130), which permanently supports

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the usefulness of creating an aesthetic attitude necessary to receive the art. Through this approach, he places aesthetics in a broader dimension, going beyond the initially studied field of arts, and in a way anticipating the options that open up to identify specific categories of aesthetics in other fields, one being the organizational environment, where it can be applied in various forms.

In 1970 the German philosopher Theodor Adorno published in Frankfurt his reference book *Theory of Aesthetics* (Adorno, 1970) in which he resumes the theme of aesthetic categories, in the form of philosophical interpretations that frame art in society with the help of aesthetics, developing in his theory the concepts of natural beauty and artistic beauty, thus placed in the series of categories specific to aesthetics, studied by other philosophers.

The categories of aesthetics are general concepts defined by philosophers to express specific characteristics and evaluate works of art, in the form of qualities attributed to them being inspired by the categories of Aristotle (who identified ten such categories), later reduced by Kant to a number of four categories (Bejan, 2007).

The concepts we refer to are considered to be human (Dufrenne, 1976, 151) not simple labels for recognizing the value of certain things, through which aesthetics can be distinguished as a form of philosophy, which is why we can conclude that they can be included in other applications intended for people, as recipients of beauty, in any form of its expression.

Aesthetics use the knowledge method of the aesthetic object, developing to the users a certain aesthetic experience, based on the observation of creation, which leads to the creation of an aesthetic attitude, being capable of an aesthetic valorization or even an aesthetic judgment to the object of art (Sabados, 2019), and these means can be extended in other fields of life, including in organizations.

4. Discussion

4.1. Optimizing organizational communication by cultivating some aesthetic categories

Given the aesthetic characteristics we referred to, the aesthetics can make the transition from the initial object of study, philosophy dedicated to the arts, to an applied philosophy that can now address other areas, one being organizational, where aesthetics can support to optimize the communication specific to an organization, by applying its concepts in some forms of communication, in order to improve the message and the way it is transmitted. One of the premises of this movement was the emergence in the 70s of a sociological practice specializing in the arts, called "sociological art", which led to the emergence of the theory of communication aesthetics, initiated by Fred Forest and Mario Costa, who launched the so-called *Manifest of the aesthetics of communication*, aiming to overcome the limits given by the field of arts and "the purpose of this aesthetic of communication is to show how new communication and information technologies can succeed in changing our relationships with reality, the time and space" (Bejan, 2007).

This movement makes aesthetics to be recognized in more and more fields, through communication, and which can easily take on aesthetic forms. Here the quoted

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author refers to "social processes that have an expressive side in communication (advertising, personal development, leisure) and, on the other hand, the phenomena of aesthetic expression that perform a function of communication (media, shows, ceremonies social)" (Bejan, 2007).

An interdisciplinary link between communication and philosophical practices was presented by the philosophical counseling practitioner Sandu Frunză, who in his book (Frunză, 2019, 135-167) related to the human body, identified by the author as a powerful tool of communication, which he considers it to be in line with the self-concern identified with the philosopher Michel Foucault, and concludes on the role of philosophical counseling, stating that it "can facilitate the integration of the body into the development of technologies of the self". Based on these statements, we consider it appropriate to emphasize once again the role of applying aesthetic rules in the management and care of the body of the person participating in the transmission of a message, and which can contribute to improving its image; or the concept can be applied to the location, defined to be the host for the development of the communication process. Semiotics also deals with body language, as a part of communication that has been studied and debated by philosophers or practitioners concerned with improving the person's communication, using other means of communication than language, identifying the body as the language of communication, but also the image that can take on the same important role of human communication (Codoban, 2011). The process of communication with the help of the image, can take into account some aesthetic categories referred to in the work, through artistic inspirations generated by productions that use this communication vector by using the image, in various forms, either photography or film, and which may include and capture exceptional artistic elements, which may at any time be subject to aesthetic requirements having a source, the aesthetics dedicated to art.

Communication with aesthetic elements included in the content may also take place in the field of advertising or brand or marketing promotion, as activities organized within an organization, the activity which may operate separately from the communication department, and which may also have the task of organizing events specific to their field of action. Another sector of the company can successfully interfere with organizational aesthetics, when it is applied by those involved in work organization, and where aesthetics can influence the way of arranging workspaces or professional ones, by creating a benefic environment for people who works in such location organized on aesthetic principles and norms, aspects which will implicitly lead to increased productivity and increased satisfaction of the workers from these organizations.

A remark on these interferences that we deal with, comes from Bejan (2008, 53), through his interdisciplinary approach about the possibility of applying aesthetics in other fields of interest, expressing that "Undoubtedly, there are areas of beauty beyond art - nature, relationships between people, industrial activities of environmental design, design, fashion". The author emphasizing the role of aesthetic communication, as a concept part of the aesthetics of the communication society.

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Aesthetic communication, as a new concept, was presented by Denmark researcher Ole Thyssen in his book about this topic, and his conclusion about organizations is they always used the aesthetic ideas to have a good communication, using the organizational aesthetics referring to create an aesthetic strategy for organizational communication (Thyssen, 2011), and this aims that can be to the attention of any manager. Returning to the application of aesthetics in organizations, another Romanian author, Rațiu (2016), writes about the concept of organizational aesthetics, including brief references to a new specialist called aestheticist, who has a certain accumulated aesthetic experience, can make specific judgments, show sensitivity and acknowledge beauty in all its forms, the author indicating at the end the importance of "the role of aesthetic elements in mediating action and in everyday life in organizations, as well as in their functioning". In the same context, a Romanian ethicist, when analyzing the moral rules underlying the application of ethics management in organizations, does so by distinguishing them from other norms, including the aesthetic norms (Mureșan, 2009: 164).

4.2. Applications of the organizational communication in times of crisis

The Covid-19 pandemic quickly generated a global crisis that affected all states of the world and surprised all of humanity, and the unprepared world's governments, in their fight to combat its effects, have taken some restrictive measures with present and future effects on people, both on national economies and on contemporary society as a whole. Starting from the negative impact generated by an unknown virus, we need to consider the challenges faced by all organizations, both those in the business environment, in the field of health or social services or care, and the institutions involved in managing the effects of the pandemic crisis, which were forced to take swift measures, leading to the creation of the social security conditions and the protection of people's health, by facilitating remote work, and maintaining a physical distance, which proved effective in combating the spread of the pandemic virus.

Leaders and management teams have been under great pressure to make quick and efficient decisions that will ensure the best possible functioning of the organization, having to adapt to restrictions that may affect long-term activity, through the economic effects generated by the cessation of activities, relocation of activities, increased costs generated by the pandemic crisis or rising unemployment, with effects throughout the community. In this context, we believe that the entire communication specific to a period of crisis must be in the attention of each organization, in order to limit the effects and the achievement of an efficient and operative communication, both inside the organization and outside.

An important role for achieving the effective communication is played by the communication department, which must be developed and encouraged to carry out a coherent and unitary communication process, in accordance with the management decisions of the organization, by creating clear information messages for employees, business partners, shareholders, stakeholders, community institutions, and which can be transmitted in various forms specific to the field, such as press releases, marketing communications or advertising promotions for

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markets, socially responsible community actions have adapted to combat pandemic effects, public reports for institutions managing the effects of the crisis, with reference to its economic effects (unemployment, restriction of activity, costs for ensuring safety and protection of persons).

For internal communication, the organization will maintain some forms of communication that respect physical distance, making a quick adaptation to online communication, in which workers receive information by e-mail or video conferencing meetings, and the communication materials used can keep the same form: internal notes or managerial decisions, submission of operational reports on ongoing activities or proposed working meetings facilitated by online platforms, in order to maintain a permanent dialogue between the organization's management and those involved in the smooth running of the activity.

Consistent with this topic, we conclude for the need to use elements of aesthetics applied to communication in times of crisis, avoiding the elimination or non-application of aesthetic rules, due to urgency or severity of the effects of the crisis or events facing the organization, thus realizing the importance of applying minimum aesthetic rules on how to present communicators, organizing communication events or even in conducting crisis information and public communications, which must send a message of stability and control, which can be supported by application of the rules taken recently, about aesthetics applied in organizations.

4.3. Philosophical practices and ethics applied in the organizations

In order to highlight the increasingly real involvement of philosophical practice for the business environment and organizations working in this field, we return to previously published studies (Hațegan, 2018b, 2019, 2020b) that refer to the possibility of use by managers and leaders, the other methods and working tools provided by new specialists, in the form of organizational philosophical consulting or counseling services, or ethics applied, in organizations.

Starting from the premise that philosophy can be applied to managers, in previous research we have identified different various forms of work of philosophical practitioners with teams of managers, highlighting the practice of reflective leadership (Hațegan, 2020b, 41-70), dilemma training (Hațegan, 2020a) the theory of 4 C to clarify any problems (Hategan, 2018a) or using contemplative practices that can be applied in the training and preparation of leaders.

In the field of applied ethics we find specialized services offered by specialists in organizational ethics counseling, which can assist organizations in developing codes of ethics and deontology, preparing the company's mission statement, applying the concept of ethical compliance or conducting an ethics audit, all these are activities can be applied in organizational and business area (Marinoff, 2002, 161-163). We support the importance of implementing and promoting these new services to the business environment, through service packages for personal development, similar to coaching services, individual or group counseling services, through professionals and facilitators specializing in philosophical counseling or organizational or ethical consultants, which use methods and tools specific to philosophical practices and ethics applied in organizations. Another involvement of

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philosophical consulting for organizations is given by counseling activity for leaders, offered by specialists in communication specific for the field of social responsibility (Hategan, 2018c) and communication for communities, these new specializations that are generically grouped under the name: *Philosophy for community*, or the acronym *P4Com*.

5. Conclusion

We conclude by supporting the importance of introducing organizational aesthetics in the business environment, as a utility application that can successfully intervene in the communication process but also in other activities to promote the organization, by identifying and recognizing it in the community.

All these approaches presented refer to the openness manifested by philosophical practice, by taking over specific concepts of aesthetics, which will generate the appearance on the market of organizational consulting services of specialists in applied aesthetics, for organizations and communities, which may have specific skills of organizational consulting, using the concepts taken from aesthetics, specialists who can be called organizational aestheticians, and actively and qualifiedly contributing to the development of an aesthetic code to be adopted by the organization, as a form of aesthetic compliance within their community.

In the absence of these new specialists, we presented in the paper some adaptations of organizational communication for periods of crisis, with the recommendation to include in the communication process rules and concepts specific to applied aesthetics, in order to maintain the current trend of including them in the counseling services, offered in the form of specialized philosophical practice services, through new specialists also present in Romania, the organizational philosophical consultants or other philosophical practitioners.

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TECHNICAL, COST AND ALLOCATIVE EFFICIENCY IN THE HUNGARIAN DAIRY FARMS

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Abstract: *The general aim of the research was to explore the main indicators of the dairy sector in Hungary, and then define and systematize their efficiency and the factors relevant concerning dairy farms. Moreover, the objective is to introduce the most commonly used methods for measuring technical efficiency, which can explore hidden reserves within the dairy sector. To achieve the research objective, first the main indicators of the industry will be introduced, which will be explained in the first part of the literature section. The Hungarian dairy sector production trends and indicators where mainly came from FAOSTAT, EUROSTAT, KSH (Hungarian Central Statistical Office) and AKI (Research Institute of Agricultural Economics) databases. For my assessment, I will use the most reliable and comprehensive domestic agricultural economics database, the AKI- FADN (Farm Accountancy Data Network) database. In accordance with my objective, based on the database, a representative sample was selected in my analyses to represent the national dairy sector. More than 6800 data points were analysed in the different DEA models, which includes data from about more than 950 dairy farms in Hungary. Based on the secondary database (FADN), I created a technical efficiency inputs in four main economic areas (current assets, fix assets, human resources and livestock) which were characterized by using dairy farms efficiency differences of different size, year and regional categories. The model input variables comes from Hungarian FADN database. I confirmed that the used efficiency methods for measuring complex efficiency level were higher in my sample in the case of the large-sized farms than for small and medium-sized farms. The average technical efficiency of the Hungarian dairy sector during the examined 10 years was 64.6%, which means that the farmers can scale down their inputs with 35.4%, without changing the level of output (efficiency reserve). Large and small farms regarding the livestock number are more efficient (93.3%) than the medium sized farms (83.0%) and the small sizes farms (65.8%) maybe, because the medium and small farms are mixed profile farms.*

Keywords: *DEA; technical efficiency; cost efficiency; allocative efficiency; dairy farms; Hungary.*

JEL Classification: *Q12; Q13.*

1. Introduction

In an economics and social point of view, increasing the efficiency level of the milk production is a highly important area of the European Union (EU) and Hungarian

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agriculture as well. If milk producers would like to increase their profitability, resulting almost exclusively from the preceding, the only way they can follow is to increase their efficiency level.

The general objective of my research was to explore the main efficiency indicators of the dairy sector in Hungary. Moreover, our objective is to introduce the most commonly used methods for measuring efficiency, which can explore hidden reserves within the sector. During the research, we seek to find the answers to the following general objective related questions:

1. How does the Hungarian dairy farms perform from 2008 to 2017 in a technical and cost efficiency point of view?
2. Are there any differences arise during those 10 years in a different farms size in the Hungarian dairy farms?

2. Materials and methods

Measuring farm level performance or in this research we can tend as an efficiency is a widely used concept in economics. Economic (or overall) efficiency expressed as a combination of technical and allocative (or price) efficiencies. Technical efficiency is the ability of the farmer to obtain maximal output from a given set of inputs while allocative efficiency measures the ability of the farmer to use inputs in optimal proportions, given their input prices and technology (Begum el. al. 2009; Coelli et. all 2005). There have been several methods to measuring efficiency; the generally used methods are data envelopment analysis (DEA), which involves mathematical programming and econometric methods, respectively.

In this research we use input orientation to measure the DEA VRS technical-, allocative and cost efficiency. The DEA VRS formula envelopes the data points more tightly and provides higher or equal efficiency scores than the CRS model. The difference between the VRS and CRS technical efficiency scores is the scale inefficiency.

To measure technical efficiency we use the radial measures of technical efficiency. The advantage of the radial approach is that its technical efficiency measures are easily interpreted and communicated as the maximum percentage reduction of inputs required to produce a given output bundle, or the maximum percentage expansion of outputs allowed for at given inputs.

DEA VRS (input oriented) model and Directional Input Distance function:

$$\underset{\beta,\lambda}{Max}\ \beta$$

$$s.t. \quad -y_i + Y\lambda \geq 0$$

$$x_i - \beta g_x - X\lambda \geq 0$$

$$\lambda\,'1 = 1$$

$$\lambda \geq 0$$

- where:

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- • *ß = Technical Inefficiency score*
- • *λ= vector of parameters (firm weights)*
- • *X and Y are matrixes with all outputs and inputs*

Figure 2 presents a space, where we have for example two inputs like labour hours (X_1) and machines hours (X_2) and one output like milk production in EUR (Y). The negative slope parabolic curve represents the production possibility curve or as the DEA literature mentioned frontier. The other negative line is an iso-cost line for the two input prices. A dairy farm (K) on this space is not efficient, because it is not on the frontier. The distance between the frontier (point T) and the sample dairy firm K represents the technical inefficiency of the farm K. The technical inefficiency can be calculated as 0T/K for farm K. Point T represent a fully efficient farm, which is on the frontier. Farm K can be allocative efficient, if it reduce their inputs (X_1 and X_2) and do their production on point A. This allocative efficiency can be calculated as 0A/OT. This is a theoretical optimum, because this is not technically feasible. What technically feasible for farm K is the point C, where it can be cost and technically efficient too, but to do that they have to change their technology too. The cost efficiency can be calculated as: 0A/OK. But that can be an ultimate goal for a farm to be cost and technically efficient in the same time.

Thus, assuming input-orientated technical efficiency of 80 percent for a farm, that means the farm can decrease inputs by 20 percent without changing outputs (*Figure 1*).
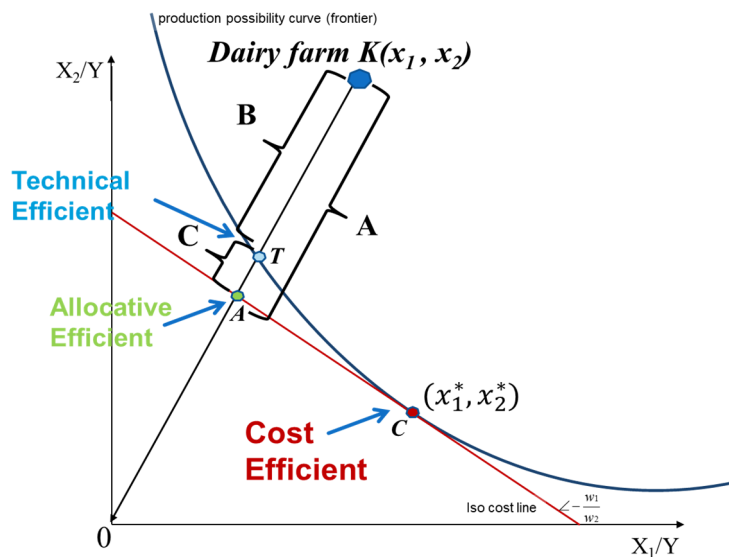
Figure 1: Measuring technical-, cost- and allocative (in)efficiency in input orientation

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In this research we use a database from the European Farm Accountancy Data Network (FADN). From the database we selected the dairy farms from Hungary from 2008 to 2017.

We use **two outputs** in our input orientated DEA models, the output variables are the

(1) cow's milk and milk products variable (*values expressed in EUR in the database under the following code: SE216);* and as another income, they sold **(2) beef and veal variable** *(values expressed in EUR in the database under the following code: SE220).*

For the farms model (KOVACS, 2016), the five input variables were, namely:

(1) Total fixed assets: It includes land associated to agricultural activity and the buildings and is expressed in EUR, these assets remain constant all the time, or at least for a prolonged time to serve the population of economic activity and they do not wear out are not, or only slightly wear out during production. This is shown as the following code in the FADN database: SE441.

(2) Total current assets: The current assets comprise (stocks and other rotating equipment) and expressed in EUR is basically the value of the breeding animals which wear during production, or stocks wholly destroyed, or else pass through the target assets, so that continuous replacement is essential. *This is shown as the following code in the FADN database: SE465*

(3) Labour input: It contains the total number of working hours. *This is shown as the following code in the FADN database: SE011*

(4) Major cost items: This input factors include the biggest three categories of costs and is expressed in EUR. These are usually the highest per capita livestock feed costs, but it represents a significant cost item in energy costs as well. The unit cost of energy includes fossil fuels and electrical energy costs, as well as the value of the plant and lubricants as well. The third component of this category of categories other direct costs, which is the biggest factor in the cost of veterinary expenses, but includes a variety of tests, or storage costs that can be directly charged to the sector. *It is listed with the following code in the FADN database: SE310 + SE330 + SE345.*

(5) Dairy cows: This category includes female sex cattle on the farm European livestock units (LSU), which are held primarily for milk production. European livestock units of the dairy cow are 1, while younger than two years old calves take account of between 0.4 and 0.6. *This is stated in the following codes in the FADN database: SE085.*

The following *Tables 1* contains the descriptive statistic from the used dataset.

Both input and output factors of the model were derived from the Hungarian AKI (Research Institute of Agricultural Economics) FADN database. The 6818 data points were analysed in the model, which includes data from about 974 dairy farms in Hungary.

During my examination set by the research questions, efficiency indicators of dairy farms were analysed from the year *2008 to 2017*. We also explore the efficiency *level of small, medium and large holdings* regarding to their the number of dairy cow livestock.

We presumed input orientation for the DEA model, which suggests that the farms in the database, we estimate how much input amounts (outputs) can be proportionally decreased (minimized) without varying the output quantities used (KOVACS, 2009).

Table 1: Variable averages in the examined dairy cow (DC) livestock size categories

Livestock's size category	Cows' milk & milk products production (1000 EUR)	Beef and veal production (1000 EUR)	Total fixed assets (1000 EUR)	Total current assets (1000 EUR)	Labour input (1000 hour)	Major direct cost (1000 EUR)	Number of dairy cows (head)	Total number of farms (piece)
DC large (DC > 501)	2 453	371	4 382	2 585	180	2 209	1 015	**79**
DC medium (51< DC <500)	365	58	754	407	30	334	190	**397**
DC small (DC<50)	23	7	120	47	3	23	19	**498**

Source: Own calculation based on the AKI FADN database 2008-2017

For the efficiency indicators calculation we used the R 3.6.1 software with the R Studio 1.2.1335 version software and we calculated the technical, allocative and cost efficiency with a Benchmarking packages version 0.27 (BOGETOFT – OTTO, 2018).

3. Results and discussion

The research results shows that the 10 years long model variables of efficiency of the Hungarian dairy farms produce an average of 64.6% efficiency based on DEA method (technical efficiency under variable returns to scale (vrsTE)). This means that effective backup solution (reserves) lies in an average of 35.4% of the Hungarian milk producing farms during the examined ten years. This means the Hungarian milk producing farms can still have an opportunity to increase the efficiency by 35.4% to minimise the level of their input resources to get the same output value.

If we take a look at the *Table 2*, we can see that during the examined period, the most efficient year was 2011 and 2013. The biggest technical efficiency reserves was in 2009, where the dairy farms can decrease their inputs with 26.7% without changing the produced output quantity. On the year, 2015 and 2016, the dairy farms also lost their efficiency and they can decrease their used inputs with 24.1-25.0% to reach the sector specific production possibility output level (curve) of their production.

The farm scale category, what we generated during this examination was the size regarding the individual farm livestock number. There are three category were generated large size farms regarding the number of dairy cows (DC) on the farms (more than 501 DC/farm). The medium size farms has dairy cows between 51 and 500. The small size farms has less than 50 dairy cows. In the sample the large farms represents 8%, the medium size farms represents 41% and the small farms has 51% shares of the total 974 dairy farms *(Table 3)*.

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Table 2: The technical efficiency numbers in different years in the Hungarian Dairy Sector

Year	No. of firms	vrsTE	vrs Techn.INEF	allocative INEF	cost INEF
2008	92	0.786	0.214	0.194	0.408
2009	110	0.733	0.267	0.238	0.505
2010	95	0.754	0.246	0.230	0.476
2011	90	0.842	0.158	0.276	0.433
2012	94	0.801	0.199	0.257	0.456
2013	87	0.839	0.161	0.284	0.445
2014	93	0.817	0.183	0.231	0.414
2015	109	0.759	0.241	0.230	0.471
2016	100	0.750	0.250	0.219	0.470
2017	104	0.788	0.212	0.300	0.512
All period (2008-2017)	974	0.646	0.354	0.235	0.589

Source: Own calculation based on the AKI FADN database 2008-2017.

Table 3: The technical efficiency numbers in the examined dairy cow (DC) livestock size categories

Livestock's size category	No. of firms	vrsTE	vrs Techn.INEF	allocative INEF
DC large (DC > 501)	79	0.933	0.067	0.016
DC medium (51< DC <500)	397	0.830	0.170	0.336
DC small (DC<50)	498	0.658	0.342	0.231
Total:	974			

Source: Own calculation based on the AKI FADN database 2008-2017.

On the sample, the highest efficiency number during the ten years belongs to the large farms (93.3%), which means that they are close to their possible production curve line; their efficiency reserve are 6.7%. The medium farms efficiency are 83.0%. The small fames efficiency are the lowest with 65.8% technical efficiency indicator. That means that they can decrease their input use with 34.2%, without any output change. The allocative inefficiency in this case means, what how much more the different farm categories can scale down their inputs, to become cost efficient as well. The medium farms has to decrease 33.6% more of their inputs to became cost efficient as well. The large dairy farms only need to scale down 1.6% more inputs to be cost efficient as well.

On the previous examination, we estimated only one frontier for the whole sample and select the different farms regarding their size and took an averages on the

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different farm sizes and compared with each other. In this case we had only one frontier. But not we have three, where the same sized farms are competing each others only. On *Figure 3* we can observe an increasing technical efficiency on the small scale farms, till 2013, but after their technical efficiency will dropped down dramatically, and it can happened because of the milk quota system abolishment or the lower milk prices as a conclusion of it. The polynomial trend line is quiet clear in this case with good fit (R^2=0.862).

The medium scale farms presents the same trend as the small scale dairy farms during the examined period, but maybe higher level and smoother fluctuation on the technical efficiency indicators (R^2=0.488). However, the milk quota system abolishment and their low milk price effect also decreased their technical efficiency numbers. Definitely, the farms has less than 500 dairy cows had great benefit from the quota system in Hungary (*Figure 2*).

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
SMALL vrsTE	0,780	0,785	0,823	0,862	0,848	0,880	0,816	0,808	0,801	0,828
MEDIUM vrsTE	0,933	0,889	0,894	0,968	0,923	0,925	0,951	0,919	0,888	0,904
LARGE vrsTE	0,964	0,989	0,992	0,997	0,978	0,994	0,984	0,986	0,977	1,000
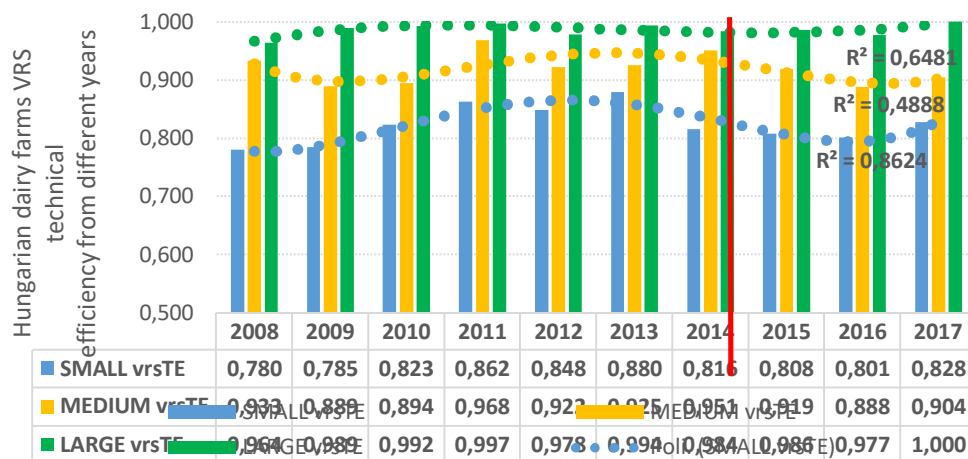
Figure 2: The technical efficiency (input orientated VRS) numbers in the examined dairy cow (DC) livestock size categories
Source: Own calculation based on the AKI FADN database 2008-2017.

The large scale farms, more than 501 dairy cows has almost no impact was observed because of the milk quota system abolishment for their technical efficiency. Their technical efficiency was changed between 96-100%. Which means that they are doing quiet good job, and use the external and internal opportunities much better than the smaller farms in the country.

To get a better picture about the situation in different years and different farm size in the Hungarian Dairy Farms, it is necessary to see other performance indicators like allocative efficiency or inefficiency, which measures that how far the exact farm has from the cost efficiency isocost line. Thus, it is and extra input down scaling from the production possibility curve. If we add the certain farm technical inefficiency and allocative inefficiency, we got the cost inefficiency, which means, that how far the that certain farm lie to be not only technical efficient but cost efficient too.

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On *Figure 3* the large scales dairy farms allocative and technical efficiency were shown for the different years. The allocative inefficiency lies in between 16.6-28.4% during the examined period, while the VRS input orientated technical efficiency lies in between 12.0-21.5%. That means that in the small size farms are more allocative inefficient than technically. They have to focuses there financial performance more than to change their technology, however it is also important, because of their relatively high inefficiency numbers.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
▇ allocative INEF	0,184	0,284	0,168	0,240	0,228	0,255	0,166	0,196	0,266	0,265
▇ vrs Techn.INEF	0,220	0,215	0,177	0,138	0,152	0,120	0,184	0,192	0,199	0,172
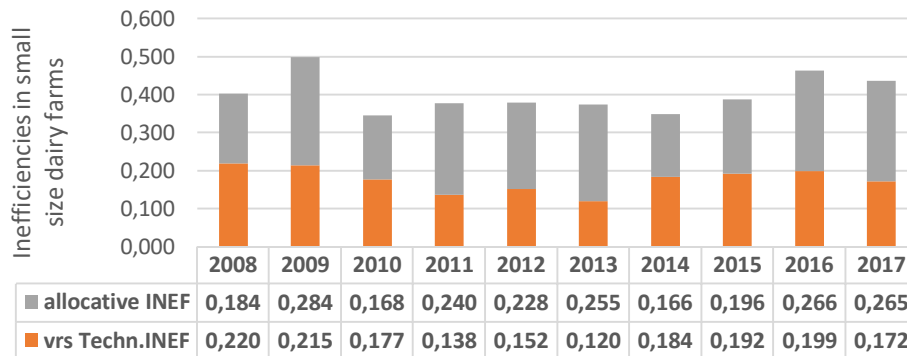
Figure 3: The technical inefficiency (input orientated VRS) in small sized dairy farms
Source: Own calculation based on the AKI FADN database 2008-2017.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
▇ allocative INEF	0,243	0,225	0,240	0,263	0,253	0,239	0,252	0,273	0,238	0,340
▇ vrs Techn.INEF	0,067	0,111	0,106	0,032	0,078	0,075	0,049	0,080	0,111	0,096
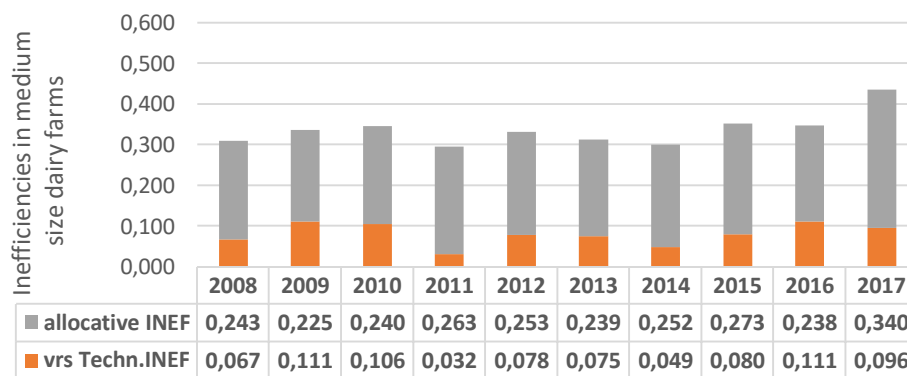
Figure 4: The technical inefficiency (input orientated VRS) in medium sized dairy farms
Source: Own calculation based on the AKI FADN database 2008-2017.

The medium size farms technical inefficiency trends shows on *Figure 4*. The technical inefficiency indicator is quiet low, comparing to the small scale farms results, it lies in between 3.2% and 11.1%. Thus, we can see that the medium size dairy farms are quiet homogenous group regarding their technical inefficiency. Thus, they do almost the same things to increase their technical efficiency. Nevertheless,

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their allocative inefficiency are relative high from 22.5%-34.0%. In the future the need to focus to decrease this number, if they want to be cost efficient too. Their technical performance is close to the efficient frontier, but their cost inefficiency is really high. The last size category what was examined are the large scale farms. Their overall performance was the best among all farms. However, what about if they are in a separate group and we measure their performance among them. *Figure 5* present the result on the large scale farms. The large farms technical inefficiency is low, comparing to the other two farm size. Their technical inefficiency are maximum 3.6%. That means that they are close to their production possibility frontier, and there are not so much to improve technically. Their allocative inefficiency numbers are low too; it lies in between 1.6 and 23.1%. The year 2011 was a bad year for them regarding to this number.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
allocative INEF	0,016	0,023	0,084	0,231	0,086	0,075	0,086	0,077	0,072	0,098
vrs Techn.INEF	0,036	0,011	0,008	0,003	0,022	0,006	0,016	0,014	0,023	0,000
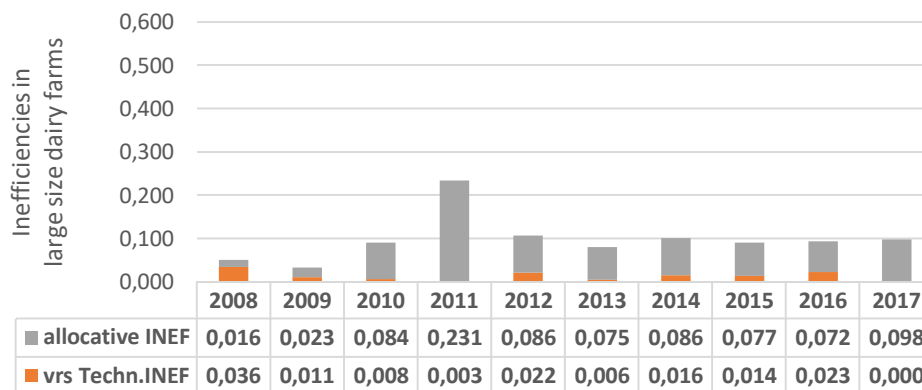
Figure 5: The technical inefficiency (input orientated VRS) in large sized dairy farms
Source: Own calculation based on the AKI FADN database 2008-2017.

4. In conclusion

The average (input orientated) technical efficiency of the whole Hungarian dairy sector during the examined 10 years was 64.6%, which means that it can decrease their inputs with 35.4%, without changing the level of output (technical efficiency reserve) to be technical efficient. The farms can reduce their inputs by an additional 23.5% to be allocative and technically efficient too.
By changing the production structure, they can be cost and technical efficient too, by reducing their inputs with 58.9% (cost efficiency reserve).
The large farms, which kept more than 501 dairy cows are more efficient (93.3%) than the other two size farms (83.0% and 65.8%).
The small scale farms can reduce their inputs by 40.2% to be cost efficient. The medium farms can reduce by 33.7%, while the large scale farms can reduce their inputs by 9.9% to be cost efficient too!

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5. Acknowledgements

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SUPPORTING CORPORATE DECISION-MAKING WITH THE TABLEAU PROGRAM

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Abstract: *Decision making is a common activity for all of us. Often we find ourselves in a position to be among different options and alternatives choose. While related to our everyday actions decision situations contain few alternatives, belonging to our work, to business decisions are more complex and we need a considerable amount of information and knowledge to make a decision. The quality of our decision depends heavily on the accuracy of the knowledge and information available to us, which can range from exact knowledge to belief. The rapidly changing information technology environment assigns a significant and ever-increasing role to the information systems used by managers. In today 's economic environment, all kinds of help is useful for managers, which a they can be used in decision-making, whether long-term strategic or short-term operational these are decisions. The simplest way to support decision - making is to use the knowledge and skills in question concise presentation, presentation, summary and weighting of information. A higher level of decision support is the use of tools that make the relationships between the different components of the decision problem and the uncertain effects of the environment visible. For the operation of companies, the continuous development of decision support functions, the application of business intelligence (BI) tools, is a priority, since those facilitate the undertaking of management tasks as support instruments. All these methods are info-communication solutions, which are applicable to link and analyse data, obtained from various data sources of the company systems. These are reporting-oriented, focussing on decision support. In our study, we introduce an application of the latest Tableau software, supporting business intelligence, which is applicable at SME's and corporations as well. Within Hungary, we have created a system that provides assistance to entrepreneurs in the border region of Hajdú-Bihar County, with the help of which they can examine the performance of their business in a benchmark-like way, on the other hand by changing certain input parameters of the model - e.g. by achieving the planned future performances - it is possible to show what kind of development and change they can achieve in the given business environment.*

Keywords: *Tableau softver; Business Intelligence; Decision Making; SME; Hungary.*

JEL Classification: *M15.*

1. Introduction

In the 1980's decision support systems were particularly able to provide support in decisions related to clearly specified problems, mostly as targeted applications (e.g. analysis of company accounts in the financial sector, or supplier analysis in commerce) (POWER 2002). Due to the progress in technology, the system expanded: on the one hand, text-, database-, table-, equation- and rule-based, on the other hand communication-, data-, document-, knowledge-, web- and model controlled decision support solutions emerged. Over time this distinction disappeared. Complexity increased many times over, and in the same time it was indispensable that relational databases, Online Analytical Processing (OLAP), data warehouse technologies and data mining appeared (LINSTEDT ET AL, 2008). Today's decision support systems are really multi-purpose, and applicable to solve diversified problems (HAMMERGEN – SIMON, 2009).

Business Intelligence became a commonly known phrase in the early 1990's, because the advertising professionals felt this expression is better marketable than the Decision Support System that had been used until then. There is no practical borderline between the two expressions, though. In his definition, Loshin highlighted that the expression Business Intelligence is not exclusively equal to the information systems, since it also includes the conversion of necessary processes, technologies and tools into information, the conversion of information into knowledge, and finally the conversion of knowledge into plans (LOSHIN, 2003). These processes are the drivers of profitable business activities. In addition it includes the data warehouses, business analysis tools and knowledge management. In conclusion, business intelligence is not only a collection of IT solutions, but a complex concept, a set of instruments strengthening the decision support function of the company. It concentrates the existing data of the organisation in a data warehouse, which provides for the preparation of statements, reports, and exploration of previously unknown relations by connecting data (HOWSON, 2007).

Business Intelligence systems can be used in various areas, including but not limited to:

- Preparation of reports, statements and records.
- Visualisation of executive dashboards.
- Definition of indicators, key performance indicators (KPI), monitoring of the critical values.
- Undertaking of business and financial analysis tasks.
- Tasks related to planning and modelling.
- Analysis and comparison of expected and actual data, investigation of the reasons for the deviations.
- Consolidation, roll-up of data, run time series analyses.
- Implementation of data visualisation solutions (Kővári, 2007).

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Tableau is a BI instrument, which offers a highly interactive and intuitive visual-based exploration experience for business users. Provides analytic to easily access, prepare and analyse their data without the need for coding. Advantages include (ROZMIS, 2017):

- Fulfils strict security requirements of the clients even in the financial, government and healthcare sectors.
- It can provide accessible solutions for smaller companies, while can also serve the tens of thousands of users of a corporation.
- Maintains a direct contact with most of the data sources, and communicates: Results are accessible for everyone, can be flexibly edited by whatever means (mobile applications available for IOS and Android).
- User-friendly environment, since analytic becomes feeling of exploration. See and understand data!
- Simple and flexible filtering, managed analysis options, collation of data, association of data.
- Requires minimal IT resources

To compare the companies we can choose form lots of aspects, but we have to keen for the best based structure of the financial indicators, what can show the real performance of the companies. Fenyves et al (2019) based their analisys for four financial indicators for benchmarking of the pharmaceutical companies on international level.

2. Methodology

One of the objectives of the ROHU 217 project – what supported this paper - is that – according to the previously introduced general decision support, business intelligence methods – it should provide useful information for the managers in the decision-making process. In frame of the ROHU 217 project we needed to develop such an application what can support the decision making process of the companies compared this with another firms, according the following conditions:
The software will be used for:
a. Processing company databases in an efficient and operational manner to substantiate financial decisions;
b. Realization of managerial scoreboards with the main performance indicators of the companies;
c. Monitoring the dynamics of company performance indicators and establishing their financial diagnosis based on the selected indicators;
d. Establishing mechanism for risk control and risk warning for company business management;
So the software can be used by staff of the University in instructing business owners, financial managers or other interested parties in the financial decision making process. In the same time, in the future, all other interesting parties can use this software for their financial decision making process, as the software will be available inside the University.

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In the same time, the model also serves the activities of the ROHU 217 project, whereby we provide assistance in the use of the business intelligence support software. The application shown in the study, can be exploited jointly by the company stakeholders in the development of well-founded financial decisions of the company. Accordingly, a model has been developed for the business intelligence-like utilisation of the Tableau software at the Faculty of Economics and Business of the University of Debrecen, which is applicable for providing assistance to the entrepreneurs of the border region, so that they can conduct a benchmark-like performance review of their respective companies. By changing certain input parameters – for example, by reaching planned future performances – the model can also reveal their potential development in the given entrepreneurial environment.

To achieve this objective, the circle of undertakings, involved in the survey, has been defined, which in our case are the small and medium-sized agricultural production companies of Hajdú-Bihar County, with their respective financial statement data, originating from the EMIS database. The SME's have been filtered from the database, based on the EU criteria, for their net sales being between 2 and 50 million EUR. In order to get the largest possible number of businesses included in the comparison, no further filtering was set up for the number of employees or balance sheet total.

Setting the balance sheet total between 2 and 47 million EUR, and number of employees between 10 and 249, would have only caused minimal differences in the number of enterprises included in the survey.

From the EMIS database, data of the companies was exported to Excel worksheets, where we started by data cleansing for the indicators with no value, using the built-in Power Query extension of Excel.

In the second step, we deleted the companies, which did not have sufficient data filled, compared to the rest of the companies, since they would have not provided a correct base for comparison.

Then, based on the data of companies, the scorecard of Table 1, was compiled.

Table 1: The range of indices formed

Indicators	Calculation
Profitability situation	
Operating ROA	EBIT/ Average Total Assets
ROA	Net Income, divided by Average Total Assets
ROE	Net Income, divided by Shareholders' Equity
ROS	Operating Profit, divided by Net Sales
Gross Profit Margin	(Net Sales Revenue – Cost of Goods Sold) /Net Sales Revenue
Financial situation	
Current Ratio	Current Assets, divided by Current Liabilities
Quick Ratio	Current Assets minus Inventory, divided by Current Liabilities
Debt Ratio	Total Debt, divided by Total Assets
Other indicators	

Indicators	Calculation
Rate of Tax Payable, compared to Sales	Tax Liability, divided by Net Sales Revenue
Turnover Rate of Customers	Net sales revenue, divided by Trade Receivable
Average Turnover Time of Customers	365 days, divided by Turnover Rate of Customers

Source: own result

In compiling the indicators that best qualify the results of the activity, we took into account several relevant literature. In the study of Bayaraa, Tarnóczi and Fenyves (2019), companies are clustered on the basis of performance indicators and compared on the basis of their financial indicators.

In the third step of the preparation, we extend the cleaned EMIS dataset based on the measures in Table 1 and unpivot the measures {Number of Employees, Assets, Current Assets, etc..} to {Indicator, Value}.

Before using the graphical analysis applications, provided by the Tableau software, data of the company, initiating the comparison, have to be recorded in the Excel data source, transformed to the data of the companies involved in benchmarking.

In the first step, year of the source data of the company, has to be selected from the drop-down menu:
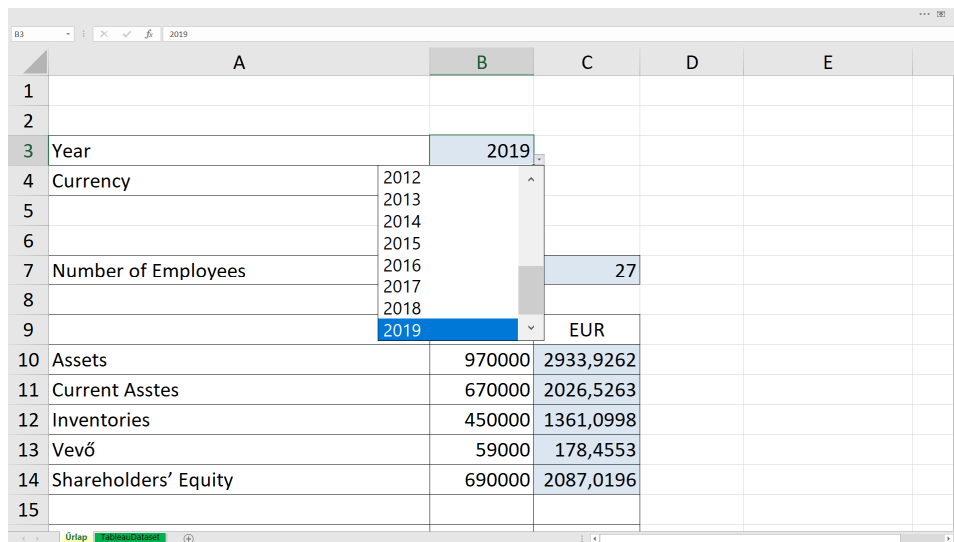
Figure 1: Selection of source data period for company data
Source: own

By selecting the year, data of the company, initiating the comparison, are corrected by the value of the national consumer price index, for the years 2015-2018, providing

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comparability with the 2015-2018 values of companies, downloaded from the EMIS database.

In the second step, currency for the financial data of the company, initiating the comparison, has to be selected. In conjunction with the ROHU217 project, three currencies have been recorded: Euro, RON and HUF. (Figure 2)

The financial data provided in HUF and RON are converted to EUR, using the latest exchange rates of the Hungarian National Bank, since the benchmark company base data were collected in EUR, and the indices were calculated in EUR.

In subsequent steps, the employment, financial and revenue data of the company to be compared, are recorded in the MS Excel worksheet. Figure 2.

Figure 2: Recording options of financial data of the company
Source: own

Using the Update function, the recorded data are transformed to the database, and they become comparable with the enterprises of similar size and pursuing similar activities of Hajdú-Bihar County.

In the last step of preparation we union the EMIS dataset with the recorded and extended (with calculated measures) data of the own company, mark the measures with i-indexable or n-not indexable, extend the unioned dataset with the indexed measures and calculate the category for number of employees.

The saved MS Excel file will be the input data source of the Tableau program (in this case the 'TableauDataset' worksheet in the Agro_ds.xlsm file), which facilitate the comparative analysis in the Tableau program, using different conditions (Figure 3).

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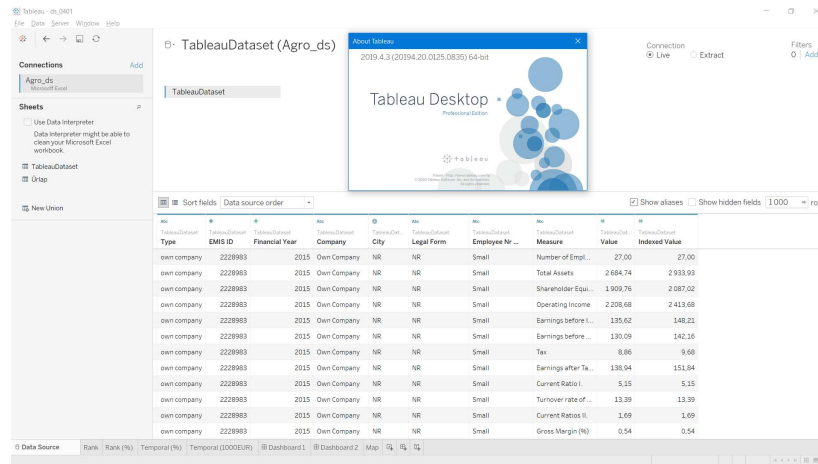
Figure 3: Connection between Tableau and the database (Agro_ds.xlsx)
Source: own

3. Results

The company to be compared, is marked "o" (= own), while the rest of the companies indexed in the database and having averaged values, are marked "c" (= comparison).

The basis for ranking the "own" company, is the comparison with the indexed and averaged database, introduced above. The own company (marked with orange in the figures) is ranked by selecting the desired indicator – or by comparison with the pool of the indicators in the first instance (Figures 4-5-6).
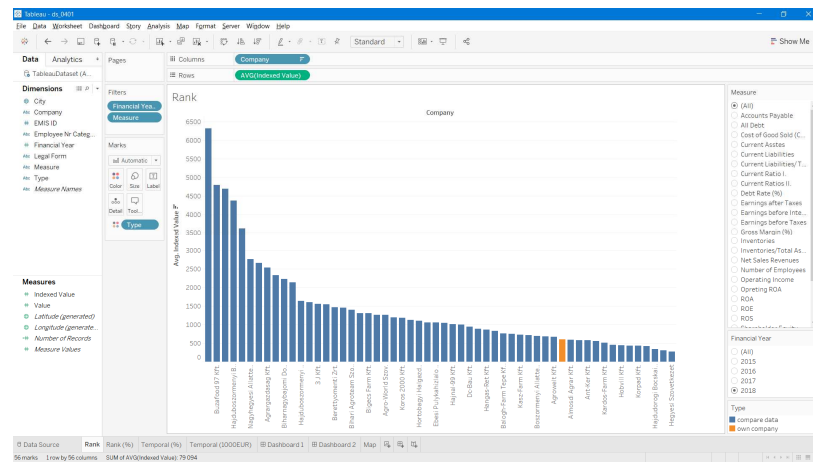
Figure 4: Position of the own company, compared to the pool of averaged indices of the companies in the database (All), indexed for the year 2018
Source: own
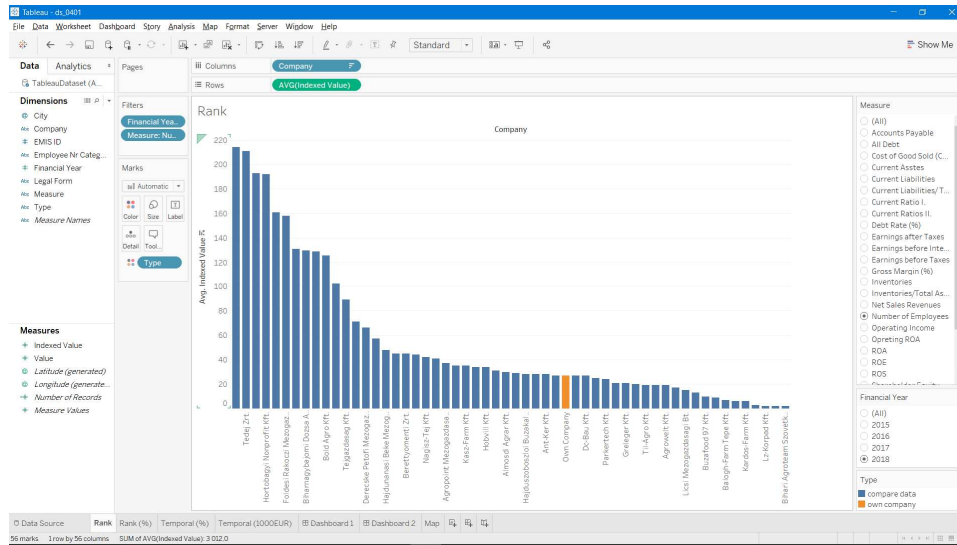
Figure 5: Comparison of the number of employees of the own company with the database companies' values for 2018.
Source: own
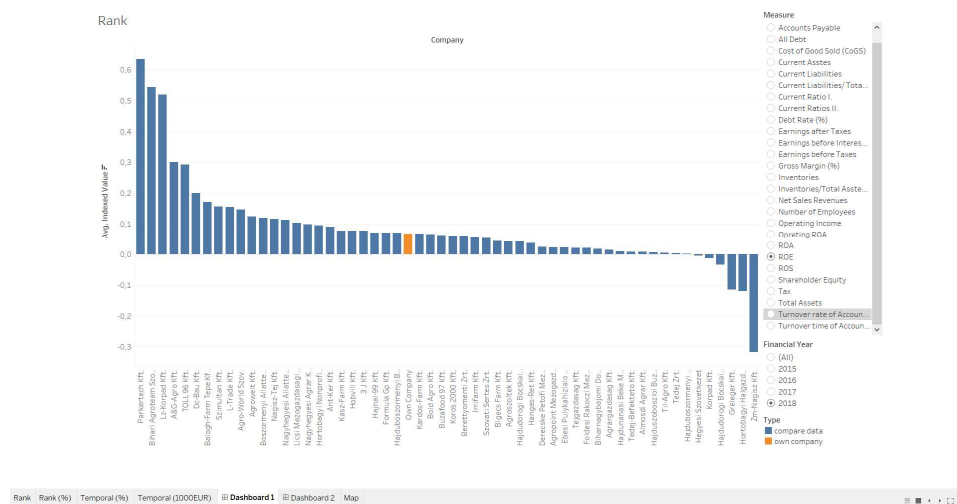
Figure 6: Comparison of the ROE indicator of the own company with the database companies' values for 2018.
Source: own

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Figure 6 is the dashboard-type display of Tableau, where the parameters irrelevant from the user's perspective, are not shown, only the information relevant for the comparison, are visible.

The database also has the option to compare the own company by size categories, broken down to business years, by selecting different indicators (Figures 7-8).
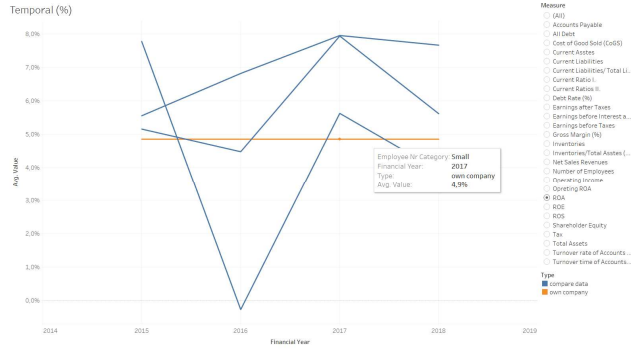
Figure 7: Average ROA value of the own company, compared to the yearly average ROA value of the micro and medium-sized companies.
Source: own
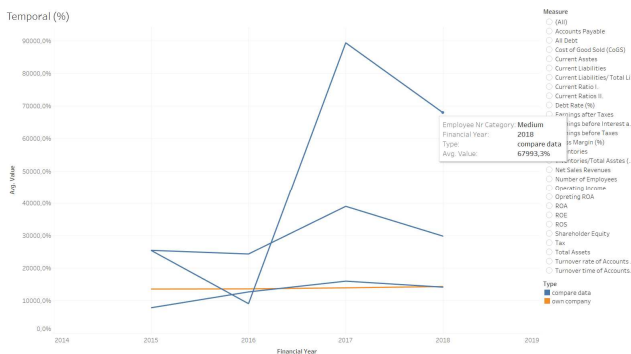
Figure 8: Average EBIT value of the own company, compared to the yearly average EBIT value of the micro and medium-sized companies.
Source: own

There is also a map-based comparison option in the Tableau program, where the community-level average indicator values can be compared with the data of the own company, even filtered by business year (Figure 9).

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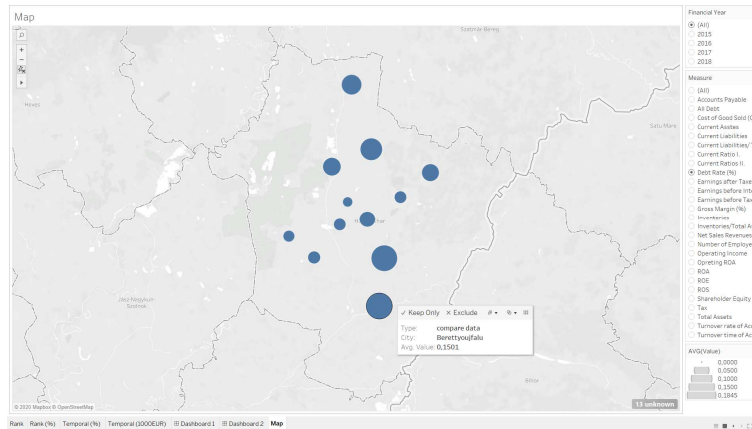
Figure 9: Debt ratio of the own company, compared to the average values of the database companies, for the years 2015 through 2018
Source: own

The developed model enables the decision makers of enterprises to receive a benchmark-type comparison by providing assets, finances and earnings data of their respective companies. In our case this is provided within an area (Hajdú-Bihar County) and within a business field (agricultural production), using 28 company indicators.
The database of the model can be extended both by area and business sector, thus a more complex comparison opportunity can be offered for the indicators representing company performance.
Because of the different currencies and indexing by the changing consumer price index, different periods and companies from different countries, can be compared in the model, which provides even further useful information for the managers.

4. Summary

Careful organisation of data acquisition, storage of the enormous amount of data, and ensuring that the data is workable, is a key challenge for every company. The complex business intelligence systems provide a whole range of possibilities (mostly covering all related processes of companies), which all contribute to enhancing the performance of businesses. This is the result of data being available at all times, and reports prepared, using different analysis techniques, being attainable. Thereby the persons responsible for decision making, should be able to draw conclusions quickly and efficiently, and thus shaping correct solutions. By so doing, the leaders and managers can spend more time on the implementation and supervision of these solutions, ensuring the projects are executed properly.

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5. Acknowledgements

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SMEs DEVELOPMENT IN ROMANIA THROUGHOUT THE 21ST CENTURY

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Abstract: *The theme of this article was chosen because it is very important to be able to determine the way in which certain factors might influence the performance of a firm. The impact that the business environment in Romania and the EU have upon the SMEs in our country represents an area of high interest. The profound changes in our economy and society since 1989 have triggered an ample process of moving from a centralized economy to a free market economy and now an emerging market economy, that has been liberated from the past under these new principles. The new role of the state in the economy and society has led to the reconsiderations of some categories and concepts, such as efficiency, cost effectiveness, price, risk and even business failure, that cannot be measured at a macroeconomic level and then at a firm level, but the other way around. Under these circumstances the firm becomes the core cell of the economy, that is influenced by all of the market specific factors such as uncertainty and risk. The fundamental problem of the existence, operation and development of the firms under the complex conditions of the market economy is the unfolding of an efficient and profitable activity. The reasoning of this research is based on the need to respond to the issues, that most SMEs in Romania confront themselves nowadays. Managers are forced to find solutions to relaunch the business. The profound changes in our economy and society have triggered an ample process of moving from a centralized economy to a free market economy, that has been liberated from the past under these new principles. The creation of this new economy involved privatizations of state owned companies, restructurings, liquidations, insolvencies but at the same time the emergence of new firms. Economic agents gained full autonomy, passing the entire responsibility of decision-making at a microeconomic level. The development of more and more SMEs and start-ups in Romania, offers the possibility of a professional and social fulfilment, for a significant part of the population, especially for its most active and innovative segment, which drives the economy of our country nowadays.*

Keywords: *SMEs; business environment; free market economy; emerging market economy; firm performance.*

JEL Classification: *E61; E62; D25.*

1. Introduction

The new role of the state in the economy and society has led to the reconsiderations of some categories and concepts, such as efficiency, cost effectiveness, price, risk and even business failure, that cannot be measured at a macroeconomic level and

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then at a firm level, but the other way around. Due to private property, which becomes the economic and legal basis of society, the state no longer interferes directly through the distribution of material and financial resources between enterprises, but indirectly through a state aid. This type of aid is allowed by the European legislation as well as by the fiscal policies provided nationally by the Fiscal Code.

Under these circumstances the firm becomes the core cell of the economy, that is influenced by all of the market specific factors such as uncertainty and risk. The fundamental problem of the existence, operation and development of the firms under the complex conditions of the market economy is the unfolding of an efficient and profitable activity. Because of the high degree of the competitiveness in our economy lately, the uncertainty and the level of risk have increased. In this national and international context, it is more than obvious that the decision factor with regard to the economic and financial policies that have a major impact upon the profitability of the firm, go hand in hand with the way that the management adapts itself to the opportunities offered by the mutations on the internal and international markets. Managers are forced to find solutions to relaunch the business. The question is what role do the financial activities play in the development of the decision-making processes within this process. Also, managers' decisions do not always base themselves on a very strong logistical foundation, in order to be sustained by the policies adopted.

The SMEs play a very significant role in the economy, first of all because of the flexibility of their structures, that gives them a quite high capacity to adapt to the frequent fluctuations of the economic environment. Small and medium sized businesses can easily integrate into an industrial network, that most certainly would contribute to the development of that certain region. Most of the times, the small or medium size of this businesses help avoiding excessive bureaucracy and possibly the dehumanization of the employees. At the individual level, SMEs usually form an assembly that is much easier to drive and control, than in the case of large corporations.

The firm is also an open system, because it manifests itself as one component of many systems, with which it finds itself in continuous relationships on various levels. These relationships are expressed through the flow of inputs, such as machinery, raw materials, fuels, electricity, information, money or capital, but also through its outputs, mainly consisting of products or services. As an adaptive organic system, the enterprise changes permanently, under the influence of endogenous and exogenous factors, adapting to both the market and to the evolution of the market, but also to the demands generated by the sustained dynamics of the embedded resources.

SMEs represent the largest number and most important enterprises around the globe and fulfill multiple economic functions. Furthermore, there will be a few arguments in favor of this premise. First of all, they generate the highest ratio of the GDP of a country. This factor provides a higher flexibility and adaptability to the market demands and constant changes, that favor the smaller sized firms, because of the fact that the decision-making process happens at a smaller level, specific to

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the entrepreneur and therefore, SMEs are much more flexible and adaptable to change. Last but not least, they represent one of the main sources of state budget revenues, such as income taxes or VAT.

Moreover, the development of more and more SMEs and start-ups in Romania, offers the possibility of a professional and social fulfilment, for a significant part of the population, especially for its most active and innovative segment, which drives the economy of our country nowadays. Also, they ensure the main component of an economic background that is favorable for the market economy and it is characterized by flexibility, innovation and dynamism. At the same time, SMEs can represent the seeds of future large companies, especially in new and cutting edge fields based on complex technology and performance. Current social, economic and technical trends, are in favor of the SMEs. These would contribute in a positive way to the degree of the training of the population, a rapid reduction of differences in living conditions between certain areas, both urban and rural, administrative decentralization, which would not only make possible but also would generate superior economic performance. The knowledge revolution and the transition to the knowledge based economy are based upon an increase in the number and impact of the SMEs, through all of their economical, scientific, technical, educational, ecological and cultural aspects.

On the other hand, SMEs have all sorts of congenital weaknesses, most of which are of a high importance in the development of the firm. Some of these weaknesses specific for the SMEs would be:

- their small amount of resources and limited reserves;
- the dependence, usually a decisive one, of a single person, namely the entrepreneur;
- most often, their lower technical level, compared to large firms;
- the fact that they have a much more volatile stability and persistence due to the previous specific features.

Large businesses may make big mistakes but they survive, SMEs on the other hand, when they make big mistakes, they most often fail.

A proper industry analysis would be needed, when trying to start up any sort of firm, regardless of the industry. Usually an industry analysis would be based on certain frameworks, such as the identification of key factors affecting the firms' performance, the determination of how changes within the business environment both at a local and global level might affect the firms' development, and last but not the least important, the identification of the opportunities and threats in the business landscape as a whole. Also, the analysis of the industry is invaluable for the generic assessment of the strategies that the business need to adopt, because it can provide an overview of the potential profitability of the average firm in a certain industry. A proper analysis of an industry would assess the five forces of the Porter's analysis, namely the internal rivalry, entry, substitutes, the supplier power and the buying power, because usually a firms' profits might be threatened of any or even more of these sources (Besanko, Dranove, Dhanley & Schaefer, 2010).

2. General aspects of the SMEs in the EU

The market is the central concept of the competition policy. It is very important to understand how the concept of market power should be addressed both in theory and in practice, because many competition law investigations would probably start with such an assessment. In an ideal scenario, one could directly estimate the extent to which a company has got market power, but in reality, there are ways in which this market power can be measured. The market definition is instrumental to the assessment of the market power, but the relevant market should not be comprised by any set of products or by any sort of services that resemble each other through some characteristics, but rather by a set of products or services and geographical areas that show some sort of a competitive constraint for each other (Motta, 2009).

In order to define the market power, we first need to acknowledge the fact that it is a crucial concept in the economics of competition law. Market power refers to a firms' ability to raise their prices above the competitive level and to be able to benchmark that price in a profitable way. Taking into consideration the fact that the lowest price that a company may charge in order not to register a loss, is the price equal to the marginal cost of production, the market power is usually defined by the difference obtained when subtracting the marginal cost of production form the prices charged by that firm. Market power refers to the ability of companies to charge prices above the marginal costs of production, therefore it is expectable for most of the companies in the real world to charge a higher price for their products or services, not only to gain market power, but also to actually make some profits, because otherwise they would have zero variable profits and would not be able to cover for their fixed costs (Motta, 2009).

SMEs are a very important factor in the evolution of the economy of any nation. Their main advantages are the flexibility of the workforce and their close ties with the local environment. In a global post-industrial economy, the consumers are more orientated towards standard products, but at the same time, one can notice an accentuated inclination towards the consumption of products or services, and even a growing demand with regard to the quality and appearance of the products. This trend, even if it is still limited, appears nowadays in poorer countries and more traditional sectors as well.

In Romania, the newest types of innovative activities in the SMEs sector can be identified, mostly in the traditional sectors than in the leading industries. In most of the countries, small and medium businesses have the highest rate of success, regardless of their technological level. These types of businesses measure their work through projects and not necessarily through the number of hours worked. This type of work in an organization is comparable to the structures of work dedicated to R&D, regardless if they have a technology center or a research department. This new way of managing a business can be nowadays identified, evaluated and verified, in more and more SMEs in Romania. In order to get a better understanding of a certain industry, companies usually need to carry out an industry assessment, in order to measure the firms' performance, within their own niche. Therefore, there

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would be a need to identify a few key factors that might affect the firms' performance when it comes to vertical trading relationships or to horizontal competitive relationships. Also, this sort of industry analysis would help identify how certain changes in the business environment, either locally or at a global scale, might affect the company's performance. This analysis would be invaluable, for assessing the business strategies that would need to be implemented within a firm (Besanko, Dranove, Dhanley & Schaefer, 2010).

This is also reflected by the insufficient development in the financial sector in Romania, a real Achilles' heel for the Romanian economy. The excessively reduced share of specialized SMEs in the services sector, indicates the low level of the services development in Romania, having a great negative impact upon the performance of the SMEs. In order to determine the role that the SMEs play within our countries economy, we need to be taking into account several indicators, such as the total number of employees in the non-agricultural enterprises, the added value that the SMEs have at the national economy level, the proportion of labor productivity, the share of these enterprises in direct exports and the weighted average of their turnover.

It is already a habit to talk about SMEs as if they were the engine of economic growth. This habit is caused by the fact that in every EU country in general, SMEs generate turnover and provide jobs for the majority of the population. Romania is no exception to this rule. In 2009, the turnover of the SMEs in our country accounted for over 60% of the turnover of all of the companies in Romania. Moreover, in the hotels and restaurants sector, the share of the SMEs was even higher, close to 85%. About two thirds of the staff of our country's businesses are operating within SMEs (Marin, 2002).

Beyond the quantitative argument, SMEs already have been labelled as being the engine of the economic growth in Romania, especially because they are characterized by dynamism, flexibility and innovative strength, being able to adapt to the changes that intervene at both an economic and a legal level. SMEs are able to quickly spot the market trends, even open roads to economic growth and technological progress and to be promoters of change.

In order to help the development of the SMEs, the National Bank of Romania is making sure that we have a stable macroeconomic environment that is favourable to the proper functioning of the business environment. For example, reducing the level and the volatility of the inflation rate is essential in this respect, and the fundamental objective of the NBR is to ensure the prices stability. Being aware of the importance of the SMEs in Romania, the NBR pursues the interest in their development, even if its main responsibilities are targeting the financial stability, and not to support this particular sector of the economy (NBR, 2012).

However, the enlargement of the EU to 27 member states has increased the geographical disparities within the European Union, because suddenly there was an increasing number of European citizens living in disadvantaged areas. This lead to a decrease of the average living standards of the EU area and an increase in the number of the population that has a quite small buying power. Reducing these gaps will inevitably be a lengthy process, which is why the least developed regions are the

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ones that have a priority when it comes to the cohesion policies. Compared to these countries, according to the Fourth Report on Economic Cohesion, the last two countries to join the European Union in 2007, namely Romania and Bulgaria, will most probably achieve a GDP per capita of only 75% of the average of the 27 member states of the EU, in about 15 to 20 years from the date of accession (Hübner, 2007).

3. European and National strategies - the competitive advantage of SME's

Taking into account the financing problem, especially after the strike of the credit crunch, there were quite a few issues that the SMEs were struggling with. To begin with, the accessibility to credits through banks and guarantee of credits was quite a bit of a concern for most of the entrepreneurs in Romania at that time, especially for those in the rural and more isolated areas, that had limited access to funding, excluding other sources, such as family members for example or sources outside the financial sector, in which case interests are very high. Unfortunately, in Romania even at the moment, the number of banking institutions that grant credits to microenterprises and small businesses is still quite low. this situation is mainly caused by the relatively high risks that are associated with the SME sector in our country, and secondly because of the fact that the financial institutions outside the banking system have insufficient funding sources and the associated costs are too high. Most of the companies no longer have enough capital for development, not even to support their current work. The financing sources available were very expensive and also, it used to take very long for yhe companies to even access a potential credit and many of those existing companies in the market had very high leverage ratios. Therefore, in most of the cases, they were unable to reschedule or diminish the costs for their various financial instruments. Another issue is the fact that the banking sector does not recognize the SMEs credit history if this was done through non-banking financial institutions.

This program has set up some specific objectives such as promoting qualitative higher education and research, entrepreneurial culture and increasing the quality and productivity of work. Moreover, it strived to develop a modern and flexible labor market, in order to facilitate young people's access to it, and also to facilitate vulnerable groups' access to education and the labor market. The Sectorial Operational Program for Human Resources Development includes an analysis of the current situation in the areas of education, employment, social cohesion and health. Some of the different areas of human resources development are most of the times reflected by specific indicators, also highlighting the experience gained through the "Phare" programs as part of the pre-accession to the EU financial assistance. The strategy highlighting priority areas of intervention was supported through funding from the European Social Fund and provides the means by which other operational programs support the development of human resources in a complementary way, by avoiding any sort of overlapping.

The most important strategic elements and correlations that were set up over the past decade are the ones including the two European strategies, namely, the Lisbon

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Strategy (European Parliament, The Lisbon Strategy 2000-2010) and the Europe 2020 Strategy. One of the most important strategies for Romania as an EU member state, is the strategy launched in April 2010, under the name of EUROPA 2020. The last European strategy, was set up on the background of a deep economic crisis and intensification of long term challenges such as globalization, scarce resources and the ageing of the population. Under these provisions, steps must be taken in order to create a real online market, based on broadband internet, for the benefits of the digital economy. In Romania, the strategic framework is defined by the governing program, which includes specific business objectives that pursue several directions of action. It is intended to create a stimulating business environment that would stimulate business competitiveness and the development of high entrepreneurial skills and competences. This way our businesses would be able to cope with the competition, both within the European single market and outside the EU.

The purpose of this The Lisbon Strategy 2000-2010 was to revive the Community policies with regard to two major challenges affecting the economy and the society, globalization and the rapid development of the informational society. The strategies main objective is to transform the EU into a more attractive space for investment and work, promoting knowledge and innovation and creating more and better jobs. The following political recommendations were set within the Lisbon Strategy:

- establishing a European framework for new reform programs;
- solving the financial market crisis and social challenges, in terms of the solutions that are expected to overcome the crisis and in particular, the new orientation of the financial system;
- promoting social cohesion - according to EESC, a well-developed and a comprehensive social policy, ads a substantial contribution to the economic growth, through professional development and learning;
- combating inequalities and poverty across Europe - the goal had been set to reduce the number of people at risk of poverty by 2010;
- creating an exclusive labor market;
- having a better coordination of fiscal policies, in line with the EU treaties.

Nowadays there is a stronger European coordination of fiscal policies between the member states, especially in those areas where the risk of tax evasion is the highest.

The Lisbon Strategy 2000-2010 contributed to promoting entrepreneurship and industrial policy as well as the creation of an appropriate framework for SMEs, economic growth and a favorable business environment by reducing disproportionate bureaucratic burdens and barriers, as well as improving the business financing framework, responding to demographic change and addressing migration issues. Employment and growth were and still remain the main points addressed because of the challenges raised by the ageing populations, that stimulate Europe's growth potential without jeopardizing social cohesion.

From a structural point of view, the Lisbon Strategy was not wrong because it included a mechanism that allowed structural transformation and modernization of the economy. However, this strategy had some drawbacks, somewhat contradictory goals, a weak implementation at a national level and results far below the initial

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expectations. The Lisbon Strategy was unrealistic about the pace of economic growth in the EU.

In addition, it did not take into account the duration of a business cycle, but only the phase of Economic expansion. The strategy set a target at an average economic growth rate of 3% in the EU, although in the previous decade, 1990-1999, the average GDP growth rate was only 2.11%. The level of 3% was recorded only between 1997-1999 when there was an economic growth registered in most of the EU-15 countries (European Parliament, The Lisbon Strategy 2000-2010).

Following the implementation of the previous strategy, Europe 2020 is based on the lessons already learned, recognizing both its strengths and failures. The main focus of the smart, sustainable and inclusive growth strategy, are the three interconnected priorities, defining the Community's vision of the market economy of the 21st century. Smart growth - involves strengthening knowledge and innovation as drivers of the economic growth. This requires improving the quality of the education, strengthening the Union's performance in the research field, promoting innovation and the knowledge transfer, ensuring that innovative ideas can be transformed into new products and services that generate growth. Sustainable growth - means achieving a sustainable and competitive economy based on resource efficiency, exploiting Europe's leadership position in the race for a better technology development, a cleaner environment, better use of resources, speeding up the deployment of smart and clean networks, as well as enhancing the competitive advantages of European businesses. Inclusive growth - implies the development of citizens' skills by ensuring a high level of employment, skills investment, poverty alleviation, the modernization of labor markets, the modernization of the social protection systems for the purpose of building a cohesive society and supporting citizens in anticipating and managing change.

No member state can effectively address global challenges only through an isolated action. Consequently, the Europe 2020 Strategy proposes a vision for the social economy of Europe's market in the next decade. In order to accomplish the objectives of the Europe 2020 Strategy, the Commission has proposed an agenda consisting of a series of pilot initiatives. The implementation of these initiatives is a common priority that requires action at all levels: EU organizations, member states, local and regional authorities.

4. The Romanian SME sector in a European context

In 2010, the world economic activity continued to recover after the severe recession recorded during the global financial crisis, especially in the first half of the year, the economic revival was supported by the monetary and fiscal stimulus measures. In addition, the global economic recovery has been sustained by the prolonged cycle of stock recovery, as companies have replenished stocks as a result of more favorable economic prospects at an international level. The shock of the economic and financial crisis has led to the growth of the government deficit and public debt. Therefore, in 2010, financial market participants have questioned the sustainability of the public finances in some of the EU countries. The crisis highlighted the fact that

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ensuring sound public finances is a must for achieving a financial stability at a macroeconomic level. The case of Romania was not a singular one, because other emerging economies in Eastern Europe, with or without a loan agreement from the IMF, applied the same tax philosophy or austerity measures.

There were three options in terms of the alternative solutions for Romania's exit from the crisis. The first option was to resume lending and to boost consumption, but there were two main barriers in this situation, which derived from the monetary philosophy implemented through the agreement with the IMF. The first one is the fact that the restriction on lending is the basis for reducing inflation and lowering the amount of imports, and also the banks reluctance to lend due to the rising share of non-performing loans. The second, even more important one, is the problem of the income distribution within the Romanian society. Romania is an economy in which labor force has a higher share in income than in capital. The total wage fund in the economy exceeds the total profits in the economy, as evidenced by the higher level of receipts to the wage bill than to corporation tax. However, falling wages is counterproductive in any economy, because the immediate effect would be the decrease in consumption (Sawyer, 2009).

The second option would have been to increase public investment in infrastructure. No matter what kind of investments and regardless of the infrastructure, because of the uncertainty, it takes a while for the state to engage in an investment. The uncertainty is permanent and fundamental and therefore, waiting is not an option, because the economy would not adjust by itself. Investments are seen as the source of all good things such as: jobs, growth, price stability. Given the type of investment, it is very important for the state to identify the total volume of resources needed for an investment. As long as the government will be dependent of expensive loans, it will not be able to make any massive public investments. In 2009 Romania has borrowed more money from the domestic market than from the IMF (Sawyer, 2009).

The third option would have been the increased appeal to structural funds, because this way the degree of absorption could have improved rapidly.

In recent years, Romania has made progress on the line of reforms in the field of policies and regulations aimed at improving the business environment and stimulating investments. Considering the fact that after our countrys' accession to the European Union, hundreds of normative acts came into force, mostly regulating the obligations of entrepreneurs, in terms of competitiveness, consumer protection, work, health and safety at work, environmental protection and so on. Following the first national RDI Strategy 2007-2013, that was developed through prospective methods in a broad consultation process, Romania needed to update its vision of the RDI system by identifying internal needs and reporting to the Europe 2020 Strategy and cohesion policy. In the context of the commitments made by Romania, in terms of the Europe 2020 Strategy, a target was set up for 2% of the GDP to be invested in RDI, 1% from the public sector and 1% from the private sector, due to the extensive developments that needed to be made in both the scientific and economic environment. There was an urge of updating the vision of the RDI system and identifying internal needs in the current economic and political context, therefore, there was a need for another strategy document to be implemented. Thus, the

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National Authority for Scientific Research launched a strategy for the years to follow, called "The National Strategy for Research, Technological Development and Innovation 2014-2020" (Strategia Națională de Cercetare, Dezvoltare și Inovare 2014-2020). The overall objective of the project is the elaboration of the main implementing instruments of the National RDI Plan 2014-2020 and the component of the Sectoral Operational Program, with its main objective to strengthen the research, technological development and innovation.

5. Conclusion

Considering the high percentage of SMEs in the market, it is notable that in order to improve the economic and financial situation, the manager should not focus on access to the stock market quotation, but to exhaust all of the existing possibilities in the credit market. In connection with this, there is a trend of opinion both on the governmental level and in the banking system regarding the need to support the economic and financial activity of SMEs, by facilitating their access to credits and by the creation of SME loan guarantee funds, at a national level.

Establishing the optimal financial structure of the firm is one of the most important and difficult decisions of the financing policy. The financial structure is a difficult variable to define, which depends not only on its economic growth objectives, its expected profitability or the risks it agrees to undertake, but also on the implications of some constraints on the firm by the external environment. Therefore, selecting the internal and external means of financing, and establishing an optimal ratio between these means becomes a major task for business managers, if they want to promote a high-return financing policy.

In the field of investment policy, it is necessary to improve the indicators and the methodology for assessing new projects and their adaptation to the techniques used by European and international financiers. The idea can also be argued by the increasingly obvious absence of indigenous capital to finance major investment projects which will have to make a substantial contribution, in the near future, to our country's economy. In the field of financing the current activity, the efforts of the companies should increase in the following two directions: training of own specialists, good acquaintances of the financial and capital market practices, and last but not the least, establishing a close and permanent link between the financial management of the firm and the current activity in these markets.

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CONSUMER DECISION MAKING IN INFLUENCER MARKETING

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Abstract: *Influencers are present in our everyday lives, we see them at events, in advertisments, TV and papers, and in their „natural habitat”: social media. It is not surprising considering that the fact that E-WOM has a stronger impact on consumer decision-making than traditional advertising techniques has been known for a long time. Moreover, advertisements are now consciously ignored by consumers, making influencer marketing an excellent alternative where the opinion leader formulates and publishes the message him- or herself. These individuals seem more approachable compared to traditional celebrities, as they provide insight into their daily lives making it easier to identify with them. Brands, in turn, can collaborate with the right influencers to create positive associations in the minds of consumers. Nowadays, consumers get the needed information about the products from social media and, as a result, make purchases, also they trust even an unknown individual's recommendation more than brand ads. Consistent posting and the presence of socially accepted values in the posts are essential elements in influencer marketing, which must be complemented by active engagement with the followers. It may be worthwhile to start with a look at the number of the followers before starting a collaboration, but the results of the researchers came to a different conclusion. Some of them found that a large following bases does not always represent a real influencing force and it is more rewarding to focus on shared content and the brand–influencer fit. Others found that the number of followers correlated positively with consumer engagement. Interestingly however, even though followers recognize that they are encountering advertised content, they still use the information gained in their decision-making, and even a specifically urging and activating tone can encourage them to purchase. Thus authenticity plays a cruical role for both parties, and for this reason it is crucial how the product and the influencer itself is indicated in the advertised content.*

Keywords: *Decision making; Advertising; Influencer marketing; Personal branding.*

JEL Classification: *D91; M31; M37.*

1. Introduction

Personal brands are already present in our everyday lives, there are hardly any events or advertisements without the presence of a person with a strong brand value. The impact of this also enters the immediate environment of individuals and the organizations that employ them, which has now become an unavoidable economic

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phenomenon. While a few years ago we had no idea who those influencer were, they are everywhere in recent years and are considered among the most influential people. The attention of global brands is also turning more and more towards them. Even the researches are analysing how popular and influential online opinion leaders are among young people and the general population. It is interesting to note the Forbes magazine's 2019 Top-Earning Celebrity List, which listed the occupations of individuals next to their names. In addition to many musicians, actors and athletes, the term "Personality" was not uncommon either. Many of them were ranked very high without any outstanding performance, solely due to self-branding. Further narrowing the circle, several of them became known as influencers in social media (Forbes, 2019). This is a good example of the increasing importance of communication in many fields including even scientific life (Popp et al., 2018).

An opinion leader can be anyone, all they have to do is keep in touch with their followers and share their own experiences. These impulses can already have a positive or negative impact on the "fan base" in relation to a particular brand, product or service. The image created in this way can spread more widely and extremely quickly. An influencer is a person whose words are heeded by a group of people with a significant number of members. So brands can no longer question whether they should work with influencers. Opinion leaders exercise their influence mainly online, on social media platforms such as Instagram, TikTok, YouTube, Snapchat, Tumblr, Twitter and last but not least, Facebook. Because the use of these platforms is free, influencers can easily and organically increase the number of their followers. Typically, opinion leaders usually try to break into only one industry at a time, such as the beauty industry, health care, gastronomy, or fashion. In the future, and depending on their success, they may also target related industries. These people – even under their own name – can advertise the products of a company using only their appearance or physical characteristics.

The influencers who are followed by thousands no longer collaborate only for free products, appearances, VIP events, but also receive financial compensation. Over time, the most successful influencers can even start their own businesses within a given industry, which already requires them to apply conscious self-branding. After all, they become a "brand" themselves. The spread of the internet has allowed anyone to do this with the right amount of ambition. Brands can be potential marketing partners of the influencers because they can get their ads to their potential customers more targeted and more widely (even cheaper) than with only traditional methods. Influencer marketing, is starting to grow into one of the best ways to build a brand. The only question is who are the "celebrities" the brands should work with. In the present research, I am looking for the answer to the question of what are the factors that influence consumer decision-making when it comes to influencer marketing. My aim is to explore the relevant criteria with the help of the literature, which can later help brands and opinion leaders in shaping their agreements.

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2. Literature review

Goldsmith and Clark (2008) have stated more than a decade ago that E-WOM (online word of mouth) or information from interpersonal sources has a stronger impact on consumer decision-making than traditional advertising techniques. The same message seems much more authentic when it comes from one of our partners, than from the advertiser. This phenomenon has long been known, thanks to the concept of word of mouth, but its importance is deepened by the spread of social media, as consumers share their experiences and opinions more and more intensively. E-WOM, which Hennig-Thurau et al. (2004) define as "positive or negative reviews of a product or company by potential, current, or past customers that is shared with many people on the Internet," has gained even more prominence with the appearance of Facebook and Instagram. That is why it is cardinal for brands to identify the opinion leaders they want to work with. On the one hand this method of advertising is very effective because influencers reach not only their own followers, but also the followers of their followers, through shares and activities. The other reason is that there is a growing tendency among consumers to deliberately skip, ignore ads or install ad-blocking software, as a lot of them are found to be annoying. Brands, on the other hand, can circumvent this resistance through collaborations with opinion leaders and sell their products indirectly thanks to the power of E-WOM (Fransen et al., 2015). With the use of different marketing tools – including traditional and online word of mouth – services can also find the right communication channels to connect with the users. For example, the use of modern marketing tools is also popular in case of the the higher educational institutions (Kőmíves et al., 2018; Kőmíves, 2019). This way a proper marketing strategy and organized marketing activities including educational campaigns (Vida, 2013.) can help the institutions – even in practical education (Fenyves, 2019; Fenyves et al., 2020) – to operate in a more cost-effective way (Kőmíves – Dajnoki, 2015). The world of mouth as a marketing approach has likewise particular importance to non-governmental organizations' (Pierog et al., 2015) and could also be used in the practice of human resources management as well (Dajnoki – Héder, 2017; Máté et al., 2017; Héder et al., 2018; Cseh Papp et al., 2019). Consumers search for information both offline and online; nevertheless, a reference person is crucial for them (Nábrádi, 2017).

However, influencer marketing is also significantly different from traditional advertising and WOM as well. On the one hand, this is already reflected in the motivation itself, since while traditional advertising can also have several purposes, influencers must also remain loyal to their followers in addition. On the other hand, in such advertisements, the opinion leader formulates and publishes the message, not the company. At the same time, this "tool" is also different from pure organic WOM, as the shared content and recommendations are sponsored by the given company.

We call influencer those content producers who build a solid following by blogging, vlogging, or just sharing short text content and images on various social media platforms. In this way, they allow insight into their daily lives, share their experiences

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and opinions. Through various collaborations (eg. giving their product for testing and promoting, organizing an event for influencers, or just paying them for shared content), brands want to present their product and company in a positive light to consumers (Nagy et al., 2018). This is a practice that can be defined as influencer marketing (De Veirman et al., 2017). According to Abidin (2016), unlike celebrities, opinion leaders may appear approachable and credible in the eyes of followers because they allow insight into their daily lives, making it easier for people to empathize with them. Schemer et al. (2008) found that associating a brand with positively evaluated opinion leaders results a positive attitude toward the brand. Therefore, brands need to be careful in the selection process and make sure that the influencer has the right qualities, as this is the only way for the right associations to appear in the minds of consumers later on.

In the age of social media, ordinary users are almost on a par with companies, they are able to build their own audience, which allows them to exert social influence and influence customer decisions. These people are called opinion leaders, also known as influencers. Because their opinions are of paramount importance to other consumers, even they themselves can become brands (Nagy et al., 2018). Due to the fact that this process takes place in social media (and between the users) not in the corporate sphere, consumers also have more confidence in these people. Bennett (2014) also pointed out that orientation from the social media and the resulting decision-making proccess can be detected in 74% of customers. This number is also surprising because 96% of people who communicate about brands online do not even follow the brands themselves on social media platforms (Smith, 2016). Moreover, according to Nielsen (2012), 92% of the people trust even an unknown individual's recommendation more than brand ads.

Bakanauskas and Kisieliauskas (2018) also highlighted the importance of examining influencers on social media interfaces. In their research, they examined so-called travel-influencers, i.e. opinion leaders who became known for their travel-promoting posts. In addition to the authors, Xiang and Gretzel (2010) also studied travel-influencers and their results showed that before making their travel decisions, users often use search engines, which usually direct them to the influencers. Bakanauskas and Kisieliauskas (2018) analysed a travel-influencer using qualitative content analysis. Their goal was to create a model that would help to create a brand for a new travel-influencers using Instagram. The Instagram interface was chosen because it is currently the second largest social media interface (Jauncey, 2015). Social media users can influence each other due to the phenomenon of mass culture (Holt, 2016), as they can no longer not only receive but also transmit messages, which can thus spread widely. Bakanauskas and Kisieliauskas (2018) highlighted the importance of consistent posting, which proved more important in examining the success of trademarks than the shared visual content itself. It was also found that linking trademarks to certain social values in the descriptions of the posts makes it possible to create the right associations in the minds of the consumers. It has also been proven that consistent posting and active engagement with followers makes the audience more accessible to brands. It is also an important finding that despite the fact that Instagram is an image-sharing social media interface, textual content is

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also extremely important to trademark owners, as descriptions have a significant impact on user engagement. The researchers identified the following possible variations in the use of Instagram tools:

- value positioning: positioning values can be useful in creating deeper brand associations
- visual content types: different types of visual content generate different engagements
- post descriptions: they should create value that strengthens brand awareness and brand-related associations. Suggested categories:
    - historical: a description of the history of the object in the image
    - experiential: a description of the experience that a person had with the object/place in the picture
    - informational: information and advice for people who might visit the place shown in the picture
    - promotional: promotion of the object shown in the image for financial purposes
    - resonant: writing a post related to events in the follower's life, such as worldwide events
    - non-related: a description related to other things that cannot be linked to the object shown in the image
    - no description
- post time: take into account the time zone of the target group
- destination hashtags: you can increase engagement if the place is listed among the hashtags
- popular hashtags: using popular hashtags related to content can increase engagement
- engaging with other trademarks or brands
- shout-outs or takeovers: increase visibility, perceived quality and credibility
- engaging with followers: extremely important for building commitment and increasing the number of followers (Bakanauskas – Kisieliauskas, 2018)

As social media is gaining ground and concerns about blocking advertisements are growing, influencer marketing is becoming more important to the brands than ever before. Instead of further pilling their target audience with their ads, the brands turn to trusted, online individuals to deliver their products and messages to consumers. One of the biggest challenges in influencer marketing is identifying the right influencing factors. It may make sense to start with the number of followers, but this number is by no means as eloquent as we might think. This was also pointed out by De Veirman et al. (2017), who argued that a large number of followers does not always represent a real influencing force. Their research found that those who are followed by many, but they themselves follow only a few, are less sympathetic to the target audience. The reason of this, according to the researchers, is that the opinion leader is assumed to operate his profile solely for financial purposes. As a result, she/he will be less credible in the eyes of the users. And this is a real problem because credibility is one of the most important criteria that brands pay attention to when collaborating with the influencers. Another important finding of the study was

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that when a unique, new product is advertised by an influencer with a large following base influencer, the perceived uniqueness of the product and ultimately brand-related attitudes are lacking compared to being promoted by an opinion leader with a medium number of followers. Therefore, it is extremely important for marketers to consider the type of product they want to advertise when selecting influencers, as opinion leaders with a large following base will not necessarily be the best partners for every product. Instead, it is much more important what topics they post about and who the target audience is, to whom their posts are addressed, and last but not least: who they reach thanks to their activity and common interest.

Ki and Kim (2019) also suggest, based on their research findings, that brands should look at the shared content when looking for an influencer they want to contract, rather than starting from the number of the influencer's followers, as popularity does not necessarily affect the impact on the followers and their behavior. Brands can achieve the best results with opinion leaders whose shared content conveys the desired prestige, is informative, demonstrates expertise, and promotes interaction with followers. Researchers cite as an example that while some influencers who play online games may have more than 50 million followers, they are not yet best placed to deliver corporate messages or promote branded products. It can be much more effective to find a person who has fewer followers but has the ability to produce demanding and informative visual content. It may also be worthwhile to choose an influencer according to the goals of the given campaign, as some may be suitable for promoting corporate initiatives, but others are rather effective for launching a new product to the market. For example, for a new fashion or cosmetic product, the brands may want to work with an opinion leader who shares visually appealing content, has a sophisticated feed that testifies to his or her expertise. And if the brands want to promote a corporate initiative, they can be helped by an influencer who shares informative, interactive content that also testifies to his or her expertise. Because followers want to imitate influencers, they choose the products, brands, or services that these people promote. Therefore, it is important for marketers to choose influencers whose style, taste and lifestyle are similar to the target audience of the brand / product. If the brands find the influencer who is living the desired lifestyle, has the style the followers want to imitate, the more likely they are able to influence followers in the way they want.

In contrast, Hughes et al. (2019) found that the number of the followers positively correlated with engagement on Facebook. The researchers also found that high blogging expertise had a positive impact on the success of the campaign in the blogging industry, but this impact was lacking on Facebook. Also, their study reveals that the content of sponsored posts, especially their enjoyment value, increases the engagement. Moreover, campaign intent in posts also increases engagement on Facebook, especially for brand awareness campaigns (as opposed to direct sales promotion campaigns).

Kupfer et al. (2018) examined how a movie's sales are affected when it is advertised with social media actors. Like Hughes et al. (2019), they found that in order to achieve the greatest impact, a partner brand (in this case, actor-influencers) with a highly product-centric social media power, accompanied by a large and active

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follower base, should be contracted. It is also important in what form the partner can display the product (in this case the film). For movies, sharing compelling and product-related posts pays off best financially. The urging, activating tone surprisingly does not deter followers, but rather encourages them to purchase. Exclusive and authentic content also increases the power in social media. Moreover, not entirely direct product branding can strengthen the brand value of the opinion leader, but it can hinder the success of the film. The visibility of the communication is also a key category, because as long as one comment can convince the given interested person about the authenticity, it does not make him or her buy immediately. Thus, researchers rather suggest to share posts for promotion. Also, it is important for the movie that one of the main characters be the chosen person for the promotion, as he or she can effectively influence the crowd, thanks to the fact that the followers consider him or her quite central and important for the film.

An interesting finding in this regard was made by Dhanesh and Duthler (2019) when they discovered that although followers recognize that they encounter an advertisement when the opinion leader indicates that he or she publishes paid content, they use the information gained in their decision-making and even their relationship with the influencer is not affected by this fact either. The study further demonstrated that if the followers know that paid content is shared with them, it will only strengthen the relationship between them and the opinion leader and increase trust and satisfaction. This may be justified by the fact that if an influencer shares with the followers that he or she is paid for the content shared, it is a testament to honesty, openness and transparency in the follower's eyes. However, for followers to really consider buying, the feeling of having control over the relationship is needed.

Jin and Muqaddam (2019) researched the collaborations between luxury brands and opinion leaders. They found that the credibility of the advertised brand plays a significant role in the image of the influencer formed by the followers. In addition, the parasocial relationship between the followers and the opinion leader is extremely important. While with a TV character, this connection could only exist in the imagination, thanks to today's interactive communication platforms, it can evoke even stronger feelings in the case of influencers. Researchers have found that it is better for brands to create content that includes the influencers themselves and that the product makes up only a part of the shared image rather than the ones that contains only the product itself. This type of advertising increases the brand's attraction to followers. In contrast, it has also been established that brands do not actually need influencers to improve their perception of expertise and reliability. And in the case of opinion leaders, it is worthwhile to be included in the picture and not only present the advertised product, if they want to improve the perception of their own expertise and reliability. Therefore, it is very important for brands and influencers to work together strategically throughout the process when deciding what product placement they want in their ads and which strengths they want to improve with that particular campaign. It was also interesting for the researchers to find out that if the content made with the influencer is shared on the platform of the brand, the effect of whether the influencer itself is included in the image was negligible. However, if the ad appears in the opinion leader's feed, it is important that the influencer him- or

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herself is in the picture for authenticity. In other words, pictures featuring only the products, or any content found incompatible with the influencer feed, may have an undesirable effect on the image of the brand and the opinion leader and the associated credibility. "Common" appearances, on the other hand, maximize the impact as the appeal of the brand and the influencer work together. In summary, product / brand placement is more crucial in influencer marketing than in traditional marketing. It is therefore essential that opinion leaders choose credible brands for building their personal brand and share content that can help them improve their parasocial interactions with their followers.

3. Conclusions

Although there are still few references in the literature that deal with influencer marketing, this number has been growing in recent years. I believe that the results so far also confirm that the issue is unavoidable and its economic impact is becoming increasingly significant. From the consumer and strategical decision-making point of view and when planning marketing activities, we must also take the phenomenon into account.

It has been formulated more than a decade ago that E-WOM has a stronger impact on consumer decision-making than traditional advertising techniques (Goldsmith – Clark, 2008). Moreover, advertisements are now consciously skipped by consumers (Fransen et al., 2015). This is why influencer marketing is an excellent alternative, where the opinion leader formulates and publishes the message him or herself. These individuals appear to be more approachable compared to celebrities in the traditional sense, as they provide insight into their everyday lives, making it easier to identify with them (Abidin, 2016). As a result, brands can collaborate with appropriate opinion leaders to create positive associations in the minds of consumers (Schemer et al., 2008). Orientation from the social media and the resulting decision-making proccess can be detected in 74% of customers (Bennett, 2014), and 92% of the people trust even an unknown individual's recommendation more than brand ads (Nielsen, 2012).

Consistent posting and the presence of socially accepted values in the posts are essential elements in influencer marketing, which must be complemented by active engagement with followers (Bakanauskas – Kisieliauskas, 2018). It may be worthwhile to start with a look at the number of the followers before starting a collaboration, but the results of the researchers came to a different conclusion. According to Veirman et al. (2017) and Ki and Kim (2019), a large following bases does not always represent a real influencing force. They think it is worth focusing on shared content and the brand–influencer fit. In contrast, Hughes et al. (2019) and Kupfer et al. (2018) found that the number of followers correlated positively with consumer engagement. Interestingly, even though followers recognize that they are encountering advertised content, they still use the information gained in decision-making (Dhanesh – Duthler, 2019), and even a specifically urging and activating tone does not deter followers, yet increases the tendency to purchase (Kupfer et al., 2018). This is why authenticity plays a cruical role for both parties, and for this reason

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it is important how the product and the influencer him- or herself is indicated in the advertised content (Jin – Muqaddam, 2019).

The primary goal of my further research is to create an algorithm or index that would help professionals evaluate and analyze opinion leaders based on the grounds of how they are able to influence a given brand's target audience on a particular topic. In this way, the brand could fit the right influencers into its marketing strategy on social media platforms, thereby building commitment and increasing effectiveness, as well as making a positive contribution to brand protection. My research would help identify which factors are vital in building a personal brand and how to predict the success of a personal brand.

4. Acknowledgements

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SECTION: *SUSTAINABLE DEVELOPMENT, INTERNATIONAL BUSINESS, EUROPEAN INTEGRATION, FOREIGN LANGUAGES AND BUSINESS ENVIRONMENT*

POST-COMMUNIST EVOLUTION OF DEFENCE SPENDING IN NATO COUNTRIES

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Abstract: *After the Allied victory in World War II, Europe was divided into two spheres of influence, according to geographical criteria. The Eastern Bloc, the area of influence of the Soviet Union, adopted the communist regime, promoted by Moscow. The communist regime has been replaced in all Eastern Bloc countries since 1989. Fourteen of these countries, no longer under Moscow's influence, have joined the North Atlantic Treaty Organization since 1999, the world's strongest military organization. These fourteen states represent three former members of the USSR, Estonia, Latvia and Lithuania, four former members of Yugoslavia, Croatia, Montenegro, Slovenia and Northern Macedonia, and seven other states, namely Albania, Bulgaria, the Czech Republic, Hungary, Poland, Romania and Slovakia. How has the allocation of defence resources in the fourteen NATO countries evolved since the fall of communism and the exit from Moscow's influence? We try to answer this question by studying the literature in the field of research and by processing the information provided by the Stockholm International Peace Research Institute. This study aims to analyse at the level of each country the differences in approach to defence spending from the adoption of the capitalist system, until obtaining the status of NATO member country. Also, this study analyses the evolution of defence spending after joining NATO, to see how the defence budget has been influenced by NATO membership. Special attention will be paid to Romania, the second among the fourteen countries in terms of army size and defence allocations, a country in which the anti-communist revolution has been more violent than in other states. Romania's accession to NATO in 2004 was one of the most important moments of the post-communist era, of equal strategic importance with the accession to the European Union. The Romanian military is respected within the Alliance due to its professionalism and dedication to the values promoted by NATO, currently participating in international missions in theatres of operations.*

Keywords: *military; spending; NATO; post-communist; Eastern Bloc; defence.*

JEL Classification: *H83; E60.*

1. Introduction

Defending the country, ensuring public order and peace and the existence of elements belonging to national security are needs of a national state, sovereign and independent, unitary, and indivisible. By allocating financial resources for the development and improvement of the military structures, in this case by allocating budgets for defence spending, the security of a country's citizens is increased,

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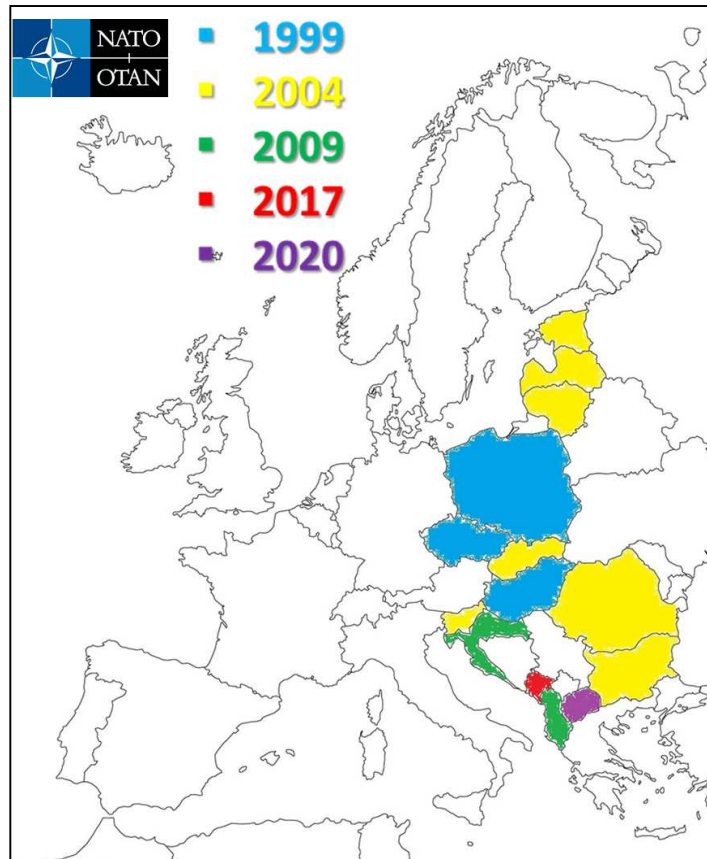
Figure 1: Former communist states and years of joining NATO
Source: author's compilation based on information provided by www.nato.int

As a recognition of Romania's position within the alliance, Mr. Mircea Geoană became NATO Deputy Secretary General in October 2019. He occupies the second most important position in NATO, after Mr. Jens Stoltenberg, who is the current NATO Secretary General. Mr. Mircea Geoană is the first Deputy Secretary General from a country that joined NATO after the end of the Cold War.

2. Theoretical Background

The level of public spending differs from country to country and from period to period, depending on the multitude of public and economic tasks assumed by the state (Florișteanu, 2008). Within the public needs, the defence needs of the country represent those public needs of the state that it forms in connection with its mission, according to its own military doctrine, to defend its independence, integrity, and

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sovereignty (Florișteanu, 2007). The role of key factor in promoting and protecting national security values, interests and objectives, as well as counteracting any type of threat or aggression of a military nature, by using specific action modalities of armed struggle, gives national defence fundamental values in Romania's general security context (Udeanu, 2012). This thesis elaborated by Mr. Udeanu applies to all NATO countries. In recent years, the global economic and political context has influenced the organization and functioning of national armies; it is not an influence on the volume of necessary expenses, but it is an orientation towards an army "less numerous and more professional" (Marinescu, 2009). The need to monitor public sector performance is undeniable (Mihaiu, 2015). The preparation of the defence budget presents unique challenges, which are not found in the preparation of other types of budgets (McCaffery & Jones, 2004). Direct defence expenditures concern the maintenance of the army in the country and on foreign territories, expenditures for the maintenance of the air and sea fleet, expenditures for the purchase of armaments, military equipment and means of subsistence, expenditures incurred in waging war (Matei et al., 2007). NATO's headquarters are in Brussels, and the Alliance has a very close relationship with the European Union. NATO and the European Union have the same core, consisting of the twenty-one common countries, which represent 78% of all EU states and 70% of all NATO member states. The six non-NATO member countries of the European Union are Sweden, Cyprus, Ireland, Austria, Malta, and Finland, with which the Alliance works very productively. In turn, the European Union also has a close relationship with the nine non-member countries of the Union, namely the United States, the United Kingdom, Canada, Norway, Iceland, Turkey, Albania, Montenegro, and Northern Macedonia. NATO and EU officials meet on a regular basis at the level of foreign ministers, ambassadors, military representatives, and defence advisors to discuss issues of common interest (Græger & Haugevik, 2011). The US presence in Europe also weakened the need for Europe to equip itself defensively. The US presence has developed a complex of Euro-Atlantic institutions and procedures, in which the EU's defensive policies are internationalised (Demetriou, 2016). Trump's language on NATO has been unusually direct but his main message aligns with a long-standing American position – that the European allies need to do more in order to earn America's protection (Ringsmose & Webber, 2020). The fourteen former communist states in NATO make up 47% of the total membership of the Alliance, so it is a force on which the organization can always rely. A number of six of the fourteen former Eastern Bloc states, currently NATO members, aligned to USA's demand of allocating 2% of GDP for the military field. These countries are Romania, Bulgaria, Estonia, Latvia, Lithuania, and Poland. In a democratic environment, there are cases of consensus for the adoption of a certain program, as was the case for the allocation of 2% of GDP to the army budget, for a period of 10 years, starting with 2017 (Mardale, 2017). The thesis exposed by Mr. Mardale refers to Romania.

3. Methodology

The general purpose of the research is to evaluate the evolution of the military expenditures in the fourteen countries that had communist regimes and joined

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NATO afterwards. This study will focus on the implications of joining the Alliance, in the sense of observing the evolution of budgets during the pre-accession and post-accession to NATO. Countries will be treated separately depending on the year of joining the Alliance. The study is based on the processing of information provided by the Stockholm International Peace Research Institute (SIPRI), an independent international institute dedicated to research into conflict, armaments, arms control and disarmament, established on the basis of a decision by the Swedish Parliament. SIPRI Military Expenditure Database provides information on the defence expenditure of all countries in the world, from 1949 to the present, in terms of budget allocation, share of GDP and allocation per capita.

4. Results

The fourteen states studied spent more than $ 30 billion on defence in 2019. In 1999 there was a premiere in the history of NATO, being the year in which three countries, former members of the Eastern Bloc, also former members of the Warsaw Pact, joined the organisation. Poland, the Czech Republic, and Hungary were the first ex-communist states to join NATO.

Figure 2: The evolution of defence expenditures in Czech Rep., Hungary, and Poland
Source: author's research based on information provided by www.sipri.org

Poland ranks first among the fourteen countries in defence allocations in 2019, with $ 11.9 billion, representing 2% of GDP. Hungary and Czech Rep. allocated only 1.2% of GDP in 2019 for defence, representing $ 1.9 billion and $ 2.9 billion. In Poland and Hungary there were peaceful revolutions against the communist

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regimes in 1989 and the transition to democracy and capitalism took place in good conditions.
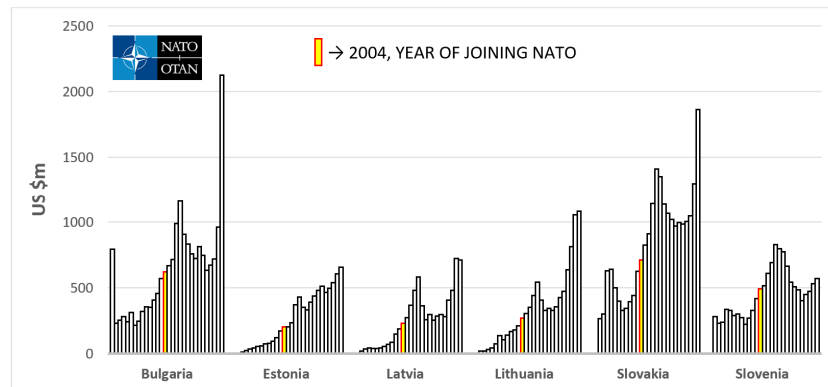
Figure 3: The evolution of defence expenditures in the Baltic states, Bulgaria, Slovakia, and Slovenia
Source: author's research based on information provided by www.sipri.org

In Czechoslovakia, the revolution was named "the Velvet Revolution" because it was a non-violent transition of power. Czechoslovakia was transformed in 1992 into the Czech Republic and Slovakia, and both states created their own armies. Rather, transformation may happen at different moments and at different paces: it is obvious that for the Czechoslovakian army, 1992, the year of the state's disintegration, had a more significant impact than the ideological and systemic turnaround of 1989 (Kührer-Wielach & Lemmen, 2016). As for the Czech Republic's defence spending, it remained constant from 1993 until the country's accession to NATO, then gradually increased, until 2008, when the all-time high of $ 2.92 billion was recorded. As share of GDP, the Czech Republic reached its maximum level in the years of pre-accession to the Alliance, with an average of 1.9%, almost maintained until 2005, and since then there has been a decrease, the average percentage being 1.2 for the period 2006-2019. Referring to Hungary's budget for the military, it remained unchanged between 1990 and 2001, the NATO membership having no budgetary impact. Regarding the observance of the principle of allocating 2% of GDP for defence, Hungary does not align with the USA's requirements, having an average of 1.1% for the period 2006-2019. The Czech Republic and Hungary have professional armies that the North Atlantic Alliance has been able to rely on for the last 21 years. Poland is NATO's most important force in the Eastern Bloc. This is the largest country in terms of population and territorial area among the fourteen. Poland's defence budget increased gradually from 1990 to 2003. Since 2004, defence allocations have grown exponentially in Poland, reaching a peak of over $ 12 billion in 2018, representing 8 times the 1990 budget and 3.72 times the 1999 budget. Poland remained firm in the post-communist period in terms of the percentage allocation of GDP for defence, with an average of 2% for the period 1990-2019. So, the exponential growth of the army budget was due to the economic

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growth of the country, because the share of GDP remained constant annually. Poland, because of its history, understands the importance of a strong, modern, and professional army and acts accordingly. The second wave of NATO accession of former communist countries was recorded in 2004, being the largest in the history of the organization, with seven new member states.

The Baltic states were member states of the Soviet Union, until 1991. At the level of these countries we can see the same gradual increase in defence budgets until the year of NATO accession, probably this increase is due to the needs of the armies of the Baltic countries to join the level of performance and professionalism imposed by the Alliance. The three countries are the only NATO countries bordering Russia and the only ones that were members of the USSR..
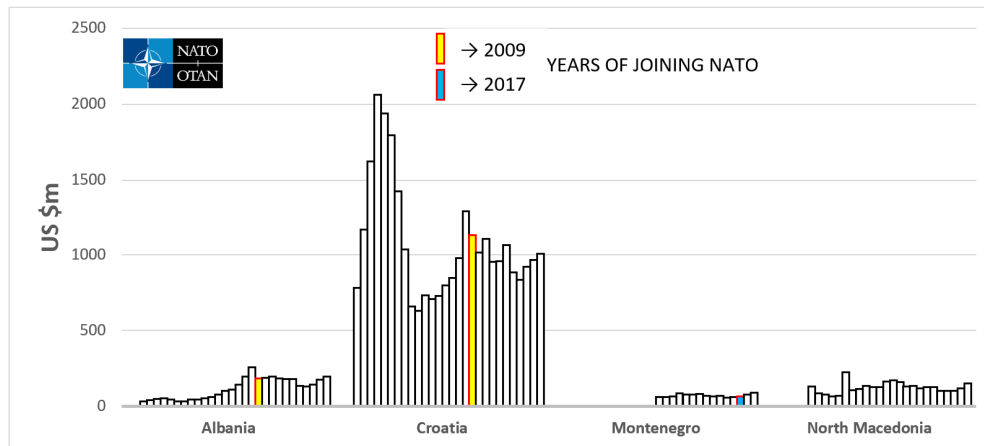
Figure 4: The evolution of defence expenditures in Albania, Croatia, Montenegro, and North Macedonia
Source: author's research based on information provided by www.sipri.org

Due to their strategic position, especially after 2004, they opted for the categorical increase of the resources allocated for the development of military structures, Estonia reaching from 205 million dollars in 2004 to 656 million dollars in 2019, Lithuania reaching from 270 million dollars in 2004 to over 1 billion dollars in 2019, and Latvia reaching from 229 million dollars in 2004 to 709 million dollars in 2019. In 2019, the Baltic countries occupied the first three positions among the fourteen in terms of defence expenditure per capita, Estonia having 494 US $ spent, Lithuania 392 US $ and Latvia 372 US $. As share of GDP allocated to defence, Estonia has met the 2% requirement since 2015, and Latvia and Lithuania only since 2018. Bulgaria, in 2019, allocated a defence budget 2.2 times higher than in the previous year and 3.4 times higher than in the year of joining NATO. Bulgaria's defence budget of 2019, in this case 2.1 billion dollars, represents 3.2% of GDP and 8.4% as share of total government spending, ranking first among the fourteen to these criteria. Bulgaria's allocations increased slightly from 1991 until after accession, and after 2008, then declined slightly. It is gratifying for the Alliance that

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a country in the former Eastern Bloc decided to allocate 3.2% of GDP for defence in 2019, being close to the USA's level, which is 3.4%. Slovakia has been developing its own army since 1992, when Czechoslovakia fell apart, with significant investments from 1995-1996. Since the pre-accession year, there has been an upward trend, reaching the level of 1.4 billion dollars in 2008. The highest value allocated for defence was in 2019, over 1.8 billion, representing 1.8% of GDP. These very large allocations in 2019 in the case of Bulgaria and Slovakia may be due to the pressure exerted by President Donald Trump on the allies. Slovenia is the first country from the former Yugoslavia to join NATO. Because the country only had its own army since 1991, the information regarding the defence budgets provided by SIPRI starts from 1992. It should be noted that Slovenia peaked in 2008, and since then spending has been on a downward trend. Slovenia allocated only 1.1% of GDP for defence in 2019, ranking last among the fourteen countries. In 2009 Albania and Croatia joined the Alliance, in 2017 Montenegro and this year Northern Macedonia, the last three being former members of Yugoslavia.

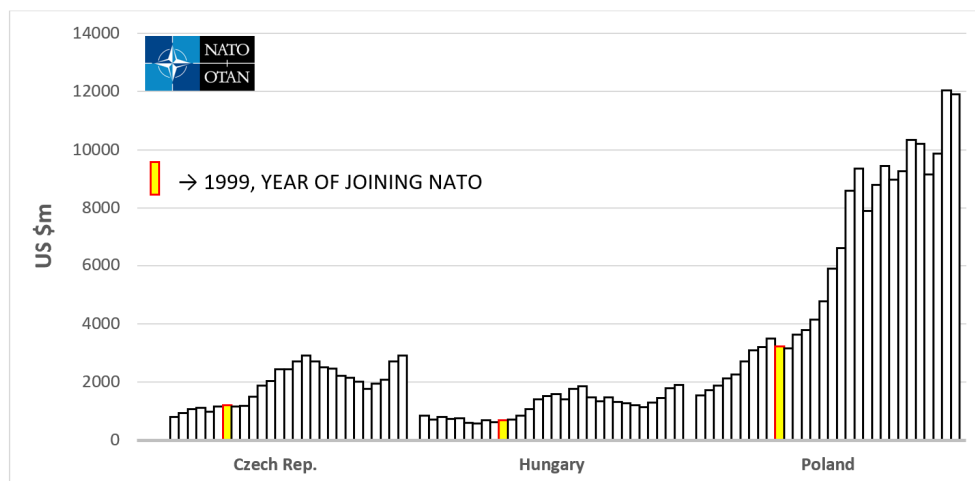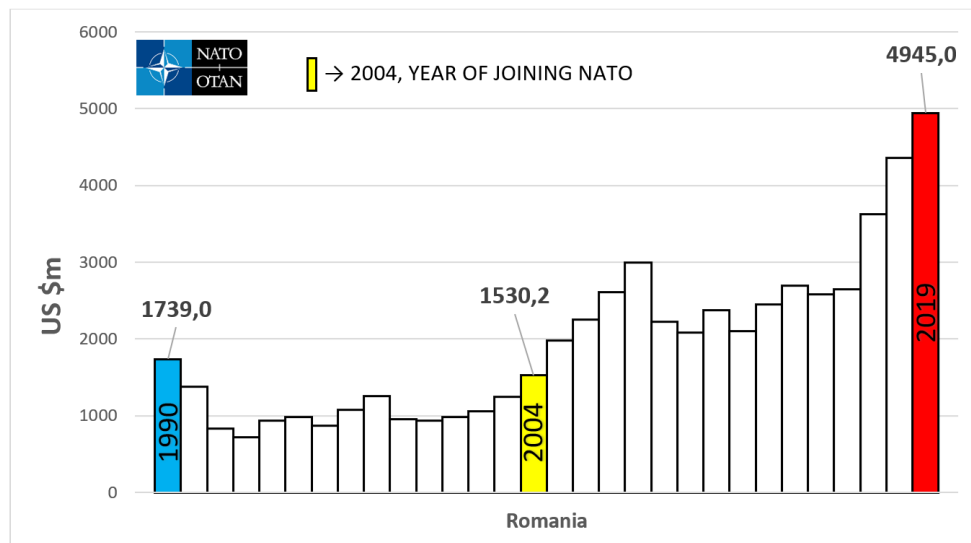**Figure 5**: The evolution of defence expenditures in Romania
Source: author's research based on information provided by www.sipri.org

Defence spending remained somewhat constant in the case of Montenegro and North Macedonia. Montenegro has recorded an average of $ 70 million annually since its declaration of independence in 2006, representing 1.7% share of GDP. North Macedonia is the newest member within NATO and spent an average of $ 123 million annually for the army since 1996 until the year of pre-accession. Albania was the first state that withdrew in 1968 from the Warsaw Pact. Albania had poor allocations in the first years after the communist regime, then registered an increasing trend in the years of pre-accession and reached a plateau. The Government spent $ 197 million for the military in 2019. Croatia has allocated the

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most funds for the endowment of the army in the first years after the establishment of democracy, to form its own strong military, given that the country has seceded from Yugoslavia. The funds spent annually during 1993-1999 exceed the 2019 budget, which represents over one billion dollars. Croatia made available to the army 11.1% of GDP in 1994, compared to 1.7% in 2019. The most violent anti-communist revolution took place in Romania in December 1989. Romania joined NATO in 2004 and became a member of the European Union in 2007, being the most important moments in the country's post-communist history.

Romania has allocated over $ 58.4 billion for defence in the post-communist period, with a constant level of annual budgets until the year of accession, 2004. After gaining NATO membership, Romania had to implement investments and reforms in the military to meet the performance standards imposed by the Alliance. The budget allocated in 2019, which ranks the country on the 2nd place among the 14, after Poland, is 3.2 times higher than the one provided for 2004 and reaffirms the fact that the politicians who lead the country are aware of the need for a strong military, lately Romania developing especially the Air Force and Naval Forces, which were deficient. As share of GDP, Romania has an average of 3% during the pre-accession period and 1.5% after 2004, for 2019 managing to reach the level imposed by the American allies, of 2%. As share of total government spending, Romania registered an increasing trend starting with 2010, reaching from 3.3% to 6.1% in 2019, which ranks the country on the 2nd place among the 14, after Bulgaria. Considering the expenses for defence per capita, Romania registered an average of $ 93.7 per year, with a maximum of $ 255 in 2019. Romana's GDP for 2019 was $ 249 billion, according to the information published by the World Bank and by comparison, Romania's GDP represents only 34% of USA's total defence expenditures for the same year. However, Romania is a reliable strategic partner for the North Atlantic Alliance.

5. In conclusion

The fourteen countries that had communist regimes and joined NATO represent 47% of the total number of member states and form the eastern border of the North Atlantic Alliance. The military spending of the NATO countries from the former Eastern Bloc amounts to 30 billion dollars annually, so their armies are reliable for NATO, due to their professionalism. The fourteen states represent a strategic force within the Alliance. The evolution of the defence expenditures of the Eastern Bloc countries has, as a rule, experienced an increasing trend after the collapse of the communist regime, to meet the standards imposed by NATO to join the organization. After years of joining the Alliance, most countries have continued this growth trend, especially to make their armies compatible with the other 16 NATO member states, as they have participated in numerous joint missions in international theatres of operations. It is also gratifying that 6 of these countries allocate 2% of GDP annually for defence, resulting in their desire to assert themselves within NATO forces.

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THE COVID-19 PANDEMIC AND THE CONSEQUENCES ON FOREIGN TRADE ACTIVITY OF GOODS VS. SERVICES

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Abstract: *International trade has taken an interesting turn in the second decade of the 21st century. For the first time the US-China trade war and the impact of the restriction on foreign trade operations were discussed, followed by the Coronavirus pandemic and again the impact on the restrictions of foreign trade operations. Partial or total closure of different economic activities reduces significantly the consumption of goods and services, and this leads to a significant reduction in foreign trade operations. The restart of the world economy will be achieved in stages, and the return to the form and value before the pandemic is projected to occur only in 2021. This paper analyzes the impact of the pandemic on foreign trade of goods and services. For a meticulous analysis, the data available for January, February, March, April of 2020 will be gathered from the World Bank, Eurostat and World Trade Organization databases and will be analyzed. The data analyzes the evolution of foreign trade operations with goods and services in order to observe the downward evolution of the two categories, only that the analysis will be performed on several levels. The first stage concerns the volume of goods and services in total foreign trade operations. The second stage examines the reduction in the volume of goods and services on the international market in terms of percentage. This analysis is made in order to highlight whether there is a similar downward trend, or whether the decline is more pronounced in one of the two categories. The third stage concentrates on the types of goods and services where the steepest decreases are registered and over other goods and services where the decreases are insignificant. All statistical data will be interpreted either in the initial form or by analyzing the percentage evolution. Finally, the main conclusions will be drawn from the analysis carried out and the main points of view on possible future developments of foreign trade operations in goods and services will be formulated.*

Keywords: *coronavirus; pandemic; exports; foreign trade; goods; services.*

JEL Classification: *F01; F14.*

1. Introduction

The world's great economists and theorists have been concerned over time to find out why certain economic activities are concentrated in a certain area and also what is the most beneficial way to place economic activities in such a way as to get benefits in terms of transportation costs and labor. Also over time, maps have been made that describe the economic resources of the countries in order to determine their competitive. Based on these maps and other information, countries specialize in producing goods for which they have competitive advantages and importing goods for which they do not have the opportunity to produce them.

It is extremely important to understand the usefulness of space and geography when it comes to the placement and implementation of various economic activities, and also what are the effects of choosing a particular geographic area, destination. This paper aims to show the importance of geographical area in carrying out economic activities, the connections made between countries located at thousands of kilometers away one from each other, but also the importance of establishing relationships with different free trade areas or customs unions in order to obtain certain trade advantages.

The research methodology for the elaboration of this paper was carried out in two stages: the first stage consisting in theoretical research for the information in specialized books and articles in order to find the information necessary to carry out the theoretical part; the second stage was to research for the statistical information part for which were found various official statistics sites as the World Bank, Eurostat, UNCTAD, and World Trade Organization but also articles and reports prepared by various international institutions and organizations.

Also the introduction of space in economic activities is particularly important in terms of natural resources but also human resources in that space and also taking into account the agglomeration of a given space determines the costs related to rents, labor and standard of living in that area.

2. Spatial Economy

Spatial economics is a vast field that various economists and scientists around the world have approached and tried to define and develop theories based on this concept that is still an ongoing process and it brings real challenges to the theoretical foundations of economic science.

The term spatial is related to economics by the simple fact that the root of the word economy is oikos which means house and which in the conceptions of architects meant built space. The spatial economics at the beginning of the economic sciences meant the space where economic activities took place.

Clipa R. & Pohoață I. (2013) consider that the spatial economy has focused on the existence of non-convexities in terms of transport costs, having the motivation that, although the comparative advantage is an attractive explanation for understanding global trade flows, it provides at best a partial explanation for patterns of industrial location within countries and cannot explain the concentration of population in large metropolitan areas.

Even if the theories related to spatiality, location and agglomeration have not been included in the economic sciences, they are a particularly important starting point in scientific developments. Currently we can see the influences of theories related to spatial economy, location and agglomeration in industrial activities, where there is a tendency to group in a space in the form of clusters such as industrial parks. Ilie G. (2015) considers that it was the neoclassical current of thought that helped the development of economic science and which, moreover, introduced space into its theories. Neoclassical economic theories have accepted the existence of a differentiated space that has specific characteristics and that offers certain advantages and opportunities for different fields or groups. Thus, depending on the opportunities offered and the natural and human resources that are distributed differently in space, the choices made by economic agents or residents in relation to the location of their activities are determined to a relatively large extent. Also the choices made in connection with the location can be influenced by certain factors such as: transport or production costs, distance, certain networks that provide information but also aspects related to regional policy, culture and tradition.

3. Economic Geography

The economic literature has been marked in recent decades by a deep interest in location. The discovery of the mechanisms that control congestion is due to developments in market structures and transport costs, aided by the increase in computer processing power.

Krugman (2008) introduced a major current in spatial economic literature through his work, starting in 1990 when he began to study economic geography and location issues, thus laying the foundation stone of the new economic geography. Krugman believes that one of the main tasks of the economy is to understand why certain economic activities occur and develop better in one place than another.

The new economic geography is seen as a synthesis of the theory of polarization, on the one hand, and of the neoclassical theory of location, on the other hand, adopting the concepts from the first theory and using a formalized set of instruments from the second. The theory of location is based on the market economic system which has an inherent inclination towards spatial balance. If economic policy registers the conditions for a favorable framework, then the regions converge. The theory of polarization is based on a system of strengthening the concentration and imbalances related to space. If for the neoclassical theory of location, the restoration of equilibrium can result from any deviation from equilibrium, due to the fact that this generates opposing forces, in the polarization theory this does not happen, due to a cumulative circular process based on feedback links and which causes an increasing distancing of the equilibrium system.

Sîrodoev I. (2015) believes that the major concerns of the new geography was to achieve balance in both the short and long term. Equilibrium can be defined as the result of two agglomerating forces and one dispersing force, the equilibrium of all markets and conditions established according to the model being exempted from this rule. When the spatial concentration of economic activities determines the increase of the market size and at the same time a new concentration of industries,

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the agglomeration is manifested. The dispersion is manifested when the economic activities are distributed in a given economic space. Thus, agglomeration and dispersion work simultaneously determining the geographical distribution of economic activity.

The size of the agglomeration is given by the efficiency of the factors of production that influence the average total cost of the product and the demand that is determined by the size of the market and the purchasing power of consumers. The size of the market determines the size of the demand, which is an incentive for companies or industries that want to reduce the cost of transactions, capitalizing on the proximity to suppliers, markets and economies of scale that are determined by the size of the market. So if a company enters a large market, it will boost activity in that market, by hiring local labor and sourcing from local suppliers, which will lead to an increase in revenue, a concentration in that space and an increase in aggregate demand.

If a large number of companies are located in a certain region, many varieties of goods will be produced in that place. Workers are also consumers in that region, they will have greater access to the varieties of goods compared to other regions, which will lead to higher income and additional migration to that region. So, with the migration of workers in the region, there will be an increase in the number of workers and thus consumers, which will lead to a larger market in the first region than in the other.

The tendency to concentrate each variety of goods in one region is the result of economies of scale, in addition to which the production of goods in the region with the largest market and the shipment of products to the other region is much more profitable. The availability of even more varieties of goods is determined by the production and shipment from the region with a larger market.

Agglomeration is explained by economic geography as a grouping in a space of entities or a process of composing an agglomerated formation.

The forms of economic agglomeration present two causes. The first case concerns the endowment of the regions, aspects related to the geographical position, climate, proximity to the means of transport, and the second refers to the factors that influence the decisions related to the location in a certain space. In general, companies or entities tend to be located in areas where there is a large workforce and specialized suppliers, in addition to this decision may be influenced by the existence of certain opportunities generated by certain existing economic activities, large markets, cultural affiliations of entities or certain management-related features.

Contrary to the neoclassical theory of economic growth that economies with similar structural features tend to have a convergence of incomes, Krugman in the new economic geography presents certain reasons for the lack of convergence. One of the reasons refers to the constant scale yields that claim that a region that is twice as gifted with automatic production factors will produce twice as much. But the reality is different, producers have increasing returns to scale and record fixed costs, which is why they are located close to large markets to have both lower transport costs and to benefit from economies of scale. But workers are attracted to those

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areas where there is high productivity and where wages are implicitly high, which leads to increased productivity and employment.

4. The Impact of the Concepts of Spatial Economy, Economic Geography, and of the Coronavirus Pandemic on the Development of International Trade

International trade has become the main contributing factor to a nation's long-term economic development, but it depends to a large extent on the economic policies, relations and external partners of the country concerned. Thus, any change that takes place internationally can positively or negatively affect the transactions, trade, cooperation or financial flows of nations. At present, any country, regardless of the level of development, goes beyond the country's borders, highlighting its competitiveness on the world market, thus developing the phenomenon of globalization which has both advantages and disadvantages for international trade. The participation of countries in trade is particularly important and even a necessity due to the fact that this process produces income and contributes to sustainable economic development and the balance of external payments. International trade is very important for each of us and this can be demonstrated by thinking only of the food and products we consume daily as mere inhabitants of a nation.

The evolution of international trade has been greatly influenced over the years by trends in increasing the complexity, concentration and improvement of trade activities, but also by increasing living standards. This was conditioned by the modernization of the technical-material base reached a very high level of development of mechanization, systematization, automation, the use of modern forms of trade, the level of training and qualification of the workforce, the use of market research and expansion services provided to consumers. This evolution can be associated with the impressive structural changes that have taken place in the world economy since the late twentieth century, early twenty-first century, and this evolution being influenced by certain factors such as technological advances in communications and information that have helped reduce costs. transport and communications, the liberalization of international trade and the formation of international organizations and agreements which have helped to reduce trade barriers and eliminate certain customs duties, thus facilitating an increase in the rate of trade between countries.

Also the structural changes that marked the international trade were also marked by the process of globalization which was a very important factor in this development of international trade. The acceleration of the growth of international trade in the last two decades must be linked to the increase in globalization and in particular to the development of the integration of developing countries into the world economy and also the expansion of production networks, the two phenomena being in line with each other with another. The evolution of international trade has contributed intensely to the expansion of global economic growth. The rapid growth of trade has led to an acceleration of productivity growth and real incomes, helping to liberalize trade, and this has helped to accelerate trade.

The multitude of existing trade agreements and organizations worldwide facilitates trade between countries, helping to develop international trade more rapidly and at the same time to increase global productivity due to the growing demand for goods and services that are desired by the population of a certain country but goods or services are produced by another country. Thus, if the two countries between which the trade takes place are based on a trade agreement or are part of a particular free trade promotion organization, those products or services may be imported at very low or non-existent customs duties.

Giurgiu A. (2008) considers that the progress of technology and especially of the Internet has transformed national markets into regional and global markets, and "the export of one country represents the import of others. The economic development of each country is based on economic relations with the outside world, so foreign economic exchanges contribute greatly

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to the economic growth of that country. It is very important for each country to carry out export activities in order to bring money into the country, and with them to be able to carry out the import activity. In order to see the evolution of world exports, we will analyze the data presented in the following graph.

Chart 1: Evolution of world exports of goods and services in trillions of dollars and projections for 2020 and 2021
Source: UNCTAD stat, link https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx, accessed at 27.04.2020.

Chart 1 shows the evolution of exports of goods and services worldwide between 2000 and 2018. In 2000, the total amount of exports of goods made worldwide was 6.42 trillion dollars, year in which the export of goods began a faster development until the world economy was marked by the global crisis in 2008. In Chart 1 we can see a dramatic decline in exports of goods from 2008-2009 to $ 15.74 trillion. $ 12.23 trillion, a decrease of about $ 3.5 trillion. The economic recovery was quite rapid because two years after the effects of the global crisis, in 2011 there was a rate of exports of goods of 17.96 trillion dollars. In 2016 there was again a decrease in exports of almost 3 trillion euros compared to 2014, but in 2017 it increased, and in 2018 exports reached a record of $ 19.12 trillion, an increase of approximately 9.7% compared to the previous year.

In terms of the evolution of exported services, they remain relatively low compared to the rate of exported goods due to the fact that they are more difficult to deliver due to their intrinsic characteristics, such as intangibility and inability to be stored.

As we can see in Chart 1, the export of services registered a rather slow growth compared to the export of goods, and if we analyze the period 2008-2009, a period marked by the crisis, the services registered a decrease of only 600 billion dollars compared with a decrease of 3.5 trillion recorded in goods exported in the same period.

The year 2017 registered an increase in terms of exported services of 7.9% and in 2018 the growth continued with a value of approximately 7.7% close to the previous year.

Import is of particular importance to each country, because only through this process can the country in question complete the necessary resources that citizens need.

Sometimes the profitability of import is higher than the profitability of producing certain goods or services, intervening here the theory of relative advantage which says that a country must

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produce and export goods for which it has high productivity and import goods for acres has a competitive disadvantage.

According to the UN, the global activity will be hit severely and thus having an impact on trade worth 8.5 trillion dollars this year, bouncing back next year but not at previous pre-pandemic level. The proactive economic measures taken by countries, trade blocs, governmental institutions and world institutions will impact the recovery or worsen the current situation if the measures are absent.

In order to be able to see the evolution of imports of goods and services worldwide, we will analyze the data presented in Chart 2.
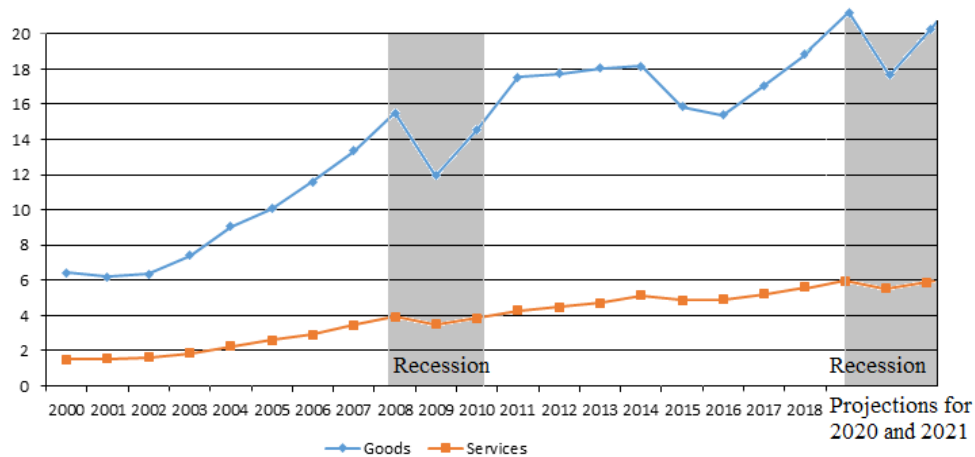
Chart 2: Evolution of world imports of goods and services expressed in trillions of dollars
Source: UNCTAD stat, link https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx accessed at 27.04.2020.

Chart 2 shows the evolution of imports of goods and services worldwide between 2000 and 2018. Sherman E (2020) states that 94% of the Fortune 1000 are seeing coronavirus supply chain disruptions. Comparing Chart 1 and Chart 2, which represent the export of goods and services and the import of goods and services, we can see approximately close values. Taking into account technological, political and social progress we can see an increase in imports during these years. As we can see in Chart 2, in 2009 there was a considerable decrease in imports of goods due to the crisis that affected to a large or small extent all the countries of the world. Another considerable decrease was registered in 2015 and 2016, respectively, but in 2017 these problems improved, registering an increase of approximately 2 trillion dollars. And 2018 saw the highest import value of $ 19.81 trillion.

The import of services has a much lower rate due to the greater weight of being supplied, this aspect being observed also in Graph 1, in the evolution of the exports of services. Unlike the import of goods, the import of services during 2009 did not register such a dramatic decrease, the deficit achieved in 2009 compared to 2008 was 43 billion dollars, a relatively small amount compared to that of goods. Also, the year 2018 was a beneficial one for the imports of services because in the case of services the year 2018 registered the highest import rate.

The share of countries' participation in trade flows is determined by the level of technological development of production, the rate of investment in research and development, the level of qualification of the labor force, the possession of certain intellectual property rights, the standard of living of the population, the level of the country. in terms of consumer goods, the

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level of endowment with natural resources. The participation of countries in the trade flow deepens the differences between industrially developed countries and developing countries. The geographical orientations of international trade in goods show that international trade flows are highly concentrated in large geographical areas with an intra-regional rather than interregional character. Intra-regional trade flows in relation to interregional ones impose two ideas: the first idea is that an important share of interregional trade consisting of intermediate trade between regional partners or partners belonging to a particular organization has developed very rapidly. , and now have a major influence on trade, the second idea is that the evolution of intra-regional trade increasingly reflects the importance of preferential trade agreements on international trade. Trade flows are generally carried out between those countries which are based on certain trade agreements, or which are part of certain organizations such as: African, Caribbean and Pacific States (ACP), Andean Community (ANDEAN), Association of Southeast Asian Nations (ASEAN), Caribbean Community (CARICOM), Central African Economic and Monetary Community (CAEMC), Central American Common Market (CACM), Common Market for Eastern and Southern Africa (COMESA), Commonwealth of Independent States (CIS), including associate and former member states, European Free Trade Association (EFTA), European Union (EU28), Gulf Cooperation Council (GCC), North American Free Trade Agreement (NAFTA). South Asian Association for Regional Cooperation (SAARC), Southern African Development Community (SADC), West African Economic and Monetary Union (WAEMU), and West African Economic Community (ECOWAS).

Thanks to them, economic agents benefit from preferential customs duties or can even carry out exchanges without customs duties. These tax reductions or tax exemptions encourage trade flows in those geographical areas. The development of international trade in recent decades is due in part to trade policies and the reduction of tariff and non-tariff barriers to trade flows. Reducing transport and communications costs, improving economic policies, competitive pressures that stimulate innovation, relocating economic activities and economies of scale in different areas of activity have led to increased revenues and demand, thus contributing to higher international trade rates.

Table 1 represents the values of exports expressed as a percentage for the main forms of international cooperation worldwide in the period 2000-2019. As we can see in Table 1, the top three major exporters of goods are EU, NAFTA and ASEAN. These 3 major forms of international cooperation have maintained their place in terms of global export performance, but have undergone significant changes during the period under review.

The EU28 is the only customs union that maintains its international market share in the export of goods, standing at 30%. After 2008, when the international crisis makes its presence felt, EU28 exports begin to decline in percentage terms. If in 2008 the EU28 accounted for 34% of world exports of products, in 2019 it still holds 30.8% of world exports. It is a signal that Brussels decision-makers need to think about in order to set in motion projects aimed at increasing the region's exports.

The second largest exporter of goods internationally is NAFTA, which started the year 2000 with a share of 19% of world exports of products, but which has one of the steepest declines, reaching in 2019 to hold 13.5% of world exports of products.

An interesting development is also seen in the GCC member countries, which started the year 2000 with a share of 2.7% of world exports of products but which recorded a dramatic increase in the percentages recorded especially between 2008-2012. This percentage increase can be attributed to the upward trend in the barrel of Brent oil on the international market. Most GCC member countries are oil exporters, it goes without saying that they will only benefit from the high value of a barrel of oil, which is reflected in the doubling of their share of world exports of products.

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Table 1: Market share of the main areas with free trade agreements, customs unions and global economic areas expressed as a percentage between 2000 - 2019

	2000	2005	2008	2009	2010	2011	2012	2015	2019
ACP	1,8%	2,2%	2,5%	2,3%	2,6%	2,7%	2,6%	2,0%	2,0%
ANDEAN	0,4%	0,5%	0,6%	0,6%	0,6%	0,7%	0,8%	0,6%	0,6%
ASEAN	6,7%	6,2%	6,1%	6,5%	6,9%	6,8%	6,8%	7,0%	7,5%
CARICOM	0,1%	0,1%	0,2%	0,1%	0,1%	0,1%	0,1%	0,1%	0,1%
CAEMC	0,1%	0,2%	0,3%	0,2%	0,2%	0,2%	0,2%	0,2%	0,1%
CACM	0,3%	0,3%	0,3%	0,3%	0,3%	0,3%	0,3%	0,3%	0,3%
COMESA	0,5%	0,7%	0,9%	0,9%	0,9%	0,6%	0,8%	0,5%	0,6%
CIS	2,2%	3,3%	4,3%	3,6%	3,8%	4,3%	4,3%	3,0%	3,3%
EFTA	2,2%	2,3%	2,3%	2,3%	2,2%	2,2%	2,6%	2,4%	2,2%
EU28	33,6%	35,1%	34,0%	33,9%	31,2%	30,5%	28,9%	29,8%	30,8%
GCC	2,7%	3,8%	4,7%	4,2%	4,3%	5,2%	5,8%	4,1%	3,9%
NAFTA	19,0%	14,0%	12,6%	12,8%	12,8%	12,4%	12,8%	13,9%	13,5%
SAARC	1,0%	1,3%	1,5%	1,6%	1,8%	2,0%	1,9%	2,0%	2,1%
SADC	0,8%	0,9%	1,1%	1,0%	1,2%	1,2%	1,2%	1,0%	0,9%
WAEMU	0,1%	0,1%	0,1%	0,2%	0,1%	0,1%	0,1%	0,1%	0,2%
ECOWAS	0,5%	0,6%	0,7%	0,7%	0,8%	0,8%	0,8%	0,5%	0,6%

Source: Eurostat Statistics Explained, link
https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do accessed at 30.04.2020
and World Trade Organization statistics accessed at 30.04.2020

An evolution to follow is that of ASEAN member countries. Based on Hilal Y.K. (2015) higher education has a positive impact on trade growth, and complementary to this idea comes A.T Kearney, with their widening impact of automation report. Combining these two together is a positive match because as it can be seen in the table above, the organization registered an upward trend throughout the analyzed period. It started with a share of 6.7% of world exports of products and is the only area, with the exception of the GCC, which records a positive trend in the financial crisis that begins in 2008. ASEAN reaches 7.5% of world trade in goods in 2019 and should see further positive developments and increase its share of world trade in products as many companies have stated that they are considering moving their production from China to countries in the region. The fact that these countries in the region are part of ASEAN can only add value to global trade in goods.

5. Conclusions

Foreign trade is currently one of the determining factors of global economic growth, the economic changes that have taken place internationally have led to the formation of the world market and subsequently to the formation of the world economy. With the liberalization of global trade through attempts to minimize trade barriers as much as possible, and by substantiating the various common markets that allow free movement, the concept of geographical orientation has begun to develop more and more. a very important role both in terms of trade flows and in terms of outsourcing production in order to reduce production costs as much as possible.

The recent events related to the Covid-19 pandemic have profoundly affected the world economy and in principle the companies that have had to stop temporarily. Affecting supply chains has led the world to understand how dependent the planet is on China and other mass-producing regions for the rest of the world, leading them to rethink their industry strategies. Most countries' governments are proposing that companies relocate their industries back to the country or as close to the country as possible to avoid possible supply chain bottlenecks.

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Recent events have shown how important space is when it comes to economic activities, especially trade flows. It is also essential for each country to rethink its industrial production strategy, trying to attract companies that want to produce essential goods and services to the population. to reduce the impact of various events such as the Covid-19 pandemic on the supply chain in the future.

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THE UNPRECEDENT DISRUPTION OF THE CORONAVIRUS PANDEMIC TO THE ECONOMY AND FOREIGN TRADE OF THE BIHOR COUNTY

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Abstract: *The appearance of Coronavirus pandemic in the European Union has led to the state of emergency declaration in almost all countries, with a few Nordic exceptions. This state of emergency has led to the temporary closure of certain economic activities from different branches of the national economies. The consequences of this measure have led to either job losses or sending employees into technical unemployment. Short-term economic forecasts are not at all encouraging for the European economy. Being the main export market for Romanian products and services, the economic means and measures that will be taken for the European economy to recover must be taken and pursued with a close eye on macroeconomic indicators. The present paper wants to point out the negative effects of the European economic shutdown on the Bihor county companies that register foreign trade activities, mainly exports on the European markets. Based on the data provided by AJOFM, the Bihor county employment agency for the following months January, February, March, April, several factors will be analyzed that determined the Bihor county companies with foreign trade activities to temporarily suspend their activity and work contracts for their own employees. One factor analyzed follows the typology of companies that have either reduced their foreign trade activity or have completely suspended their activity, in terms of their size: micro-enterprises, small enterprises, medium-sized enterprises, large enterprises. Another factor taken into consideration follows the number of external contracts that the companies had, that can reveal the number of customers for whom they produced. This factor leads to the following one which analyzes whether there is a temporal difference in the temporary or total activity suspension between enterprises with a single foreign customer compared to those that produce for several customers. The next factor analyzed concerns the period in which companies start asking for help and registering all their employees for technical unemployment or only partially reducing their activity. Certain elements of a financial nature will also be taken into account, which could have prevented the period of temporary or total suspension of activity. Finally, conclusions will be drawn and proposals will be made to prevent such a phenomenon.*

Keywords: *coronavirus; pandemic; exports; enterprises; foreign trade.*

JEL Classification: *F16; F61; F66.*

1. Introduction

Krugman, P. (2008) states that it is pretty difficult to predict the next economic crisis, not because the macroeconomic indicators wouldn`t be accurate, or would be useless, but because the economy is influenced by a lot of things happening in other fields of activity. Even though in the economy certain movements can be predicted at some extent due to their cyclical nature, it's impossible to be able the give an exact date of the next economic crisis outburst.

Economists agree that the following indicators are being the most important ones when talking about an economic crisis: new industrial orders, industrial production and unemployment. Besides these three indicators there are also other factors that can contribute to the ignition of an economic crisis like consumer behavior, access to capital and loans, or simply other external factors. Most of the economists nowadays agree that when major changes take place in the way people manage their credit and debt, soon there will be a major change in the economy as a whole.

Economists like Lewis, M. (2010) and McLean, B (2010) state that there is no system that will guarantee a date at which to expect an economic crisis to burst, although there are some early signs that show us the economy is not doing well like the ones mentioned above. But in order to see them and to interpret them properly and not to wake up in a world where the economy is blowing up, analyses must be able to rely on economic models based on regulations and norms, otherwise the ciclicity will mean falling from an economic crisis into another.

Based on the information from analyzing the macroeconomic indicators a clear picture can be seen of where the economy is at the moment of the analysis, and even more than that, predictions can be made on the tendencies of the economy. Roubini, N. (2010) considers that the information above combined with a historical research could give an idea if a crisis is close or not, but the data collected should be very carefully gathered and based on well-known and trust worthy sources.

This paper starts concentrating on the practical approach to an economic crises and analyzes the evolution of macroeconomic indicators like: new industrial orders, industrial production and unemployment since 2000 until the present day (where there was data available) for Romania. They are correlated and closely linked because new industrial orders pave the way for months in industrial production and henceforth the creation of new jobs. But, going in the opposite direction, less new industrial orders means future lower industrial production, meaning less jobs in the future.

2. New industrial orders

New industrial orders is an important economic indicator that helps businesses in a country decide on what to produce and whether or not to continue producing goods. Giurgiu A. (2008) considers that typical new industrial orders come from clients at home or abroad, direct or indirect importers, exporters, distributors, retailers, and others. An increase in the evolution of this indicator shows that the economic sector of that certain country is doing well, whilst a decrease in new industrial orders

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signifies that the economic sector my is going to in a bad stage in the future, after the actual orders are being produced. Simply put, the consumers do not want the commodities produced in that sectors of the economy in the future so that companies stop placing new orders.

In Graph no 1, we can observe the evolution of the new industrial orders in Romania between 2015 -2020 compared to previous year. As can see below, if the year 2015 is taken as reference, the observed trend shoes that in 2016 and 2017 there are plenty of new industrial orders. A significant effect is placed on the external factors because the vast majority of Romanian exports head to other EU members, and at that specific moment, the European Central Bank ECB started its quantitative easing measure that boosted consumption in the EU19 area that Romania and its industrial sector gained from. All good but after that between 2017 - 2018 something has happened. In Romania at that time occurred some major shifts in the fiscal sector, with an increase of the minimum wage and the comprising of taxes paid by the employers and employees. If costs are added to the industrial production process that means the industrial products are becoming more expensive on foreign markets.
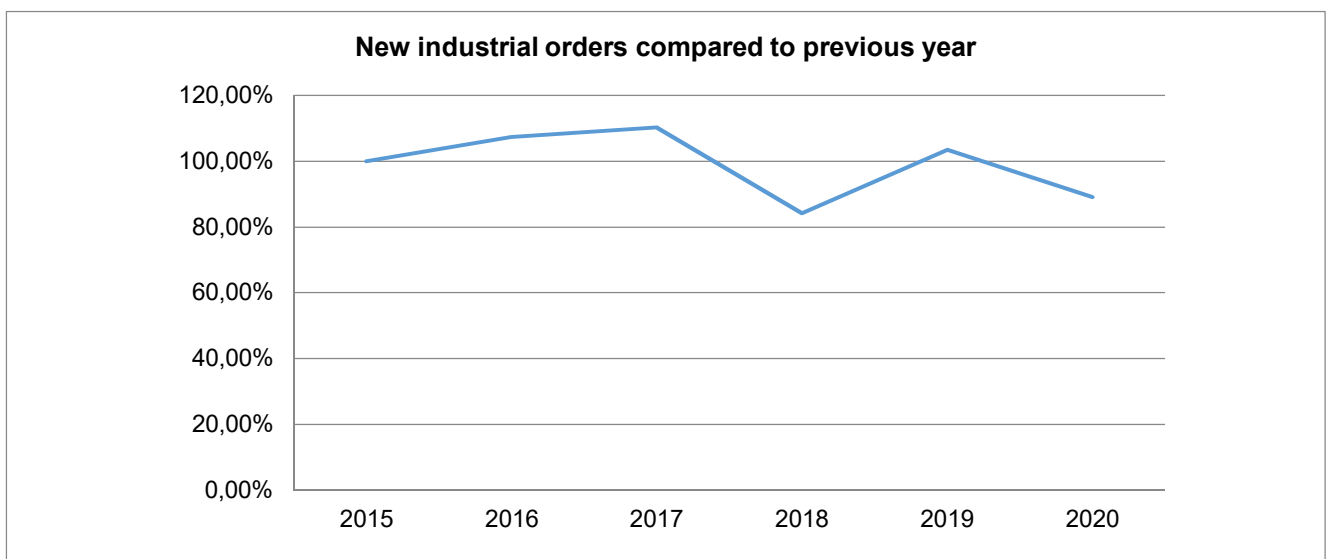
Graph no 1: New Industrial orders in Romania between 2015 -2020 compared to previous year
Source: Graph created by the authors based on information from
https://insse.ro/cms/ro/tags/comunicat-comenzi-noi-din-industrie accessed at 20th May 2020, dates available until March 2020

In 2018 things looked like they were getting better, but since the second half of 2019 the new industrial orders Romania are getting lower and lower. A significant effect is placed on the external factors again because a trade war is looming between continents, meaning less industrial products being shipped abroad.

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3. Industrial production index

According to the industrial production index (IPI) it measures real output in the manufacturing, mining, electric and gas industries monthly/yearly, relative to a base month or a base year, depending on measured requirements. This type of information is valuable to government officials, managers and investors that that need to take decisions, that would like to or have already put their money into these industries, but, in the meanwhile, it is a valuable indicator that shows economists like Schiff, P.; Schiff, A. (2010) critical information about the ongoing of the economic sector and a country's economy as a haul. The reason for this is that, changes in the industrial sector determine a big part of the fluctuations in the economy as a haul.

The evolution of the industrial production in Romania has been relatively at the same level until 2007, as we can observe in Graph no. 2. The IPI is calculated as mean/year based on the monthly evolution but not revealing the highs and lows of those years.
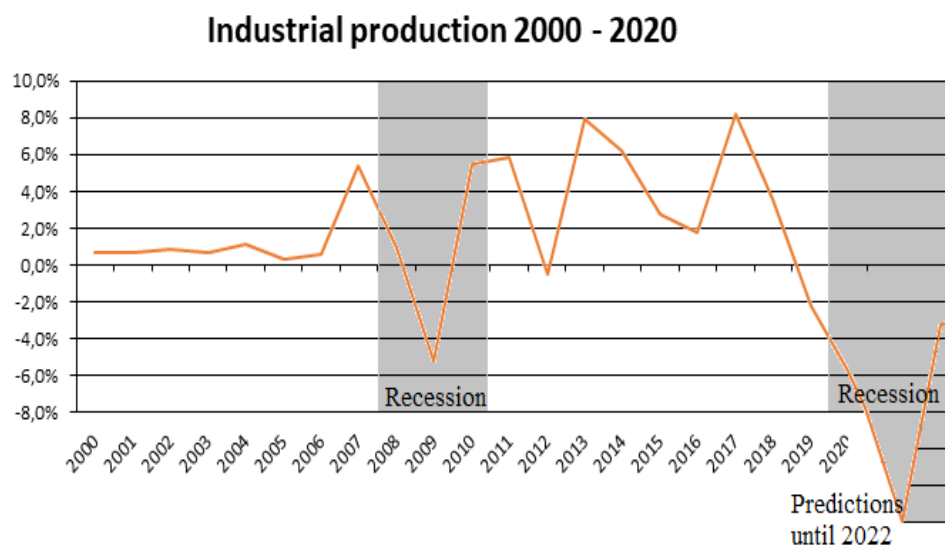
Graph no. 2: Industrial production in Romania between 2000-2020, mean/year and predictions
Source: Graph created by the authors based on information from:
https://insse.ro/cms/ro/tags/comunicat-indicii-productiei-industriale accessed at 20th May 2020. The predictions are made based on the contraction happend in the last recession, taking into consideration the years between 2008-2011

Paying attention shows that starting in February 2007 the sector reaches a rate of 6% increase, but only two months later, there was only a 2.3 % value of IPI. The process that follows is going to be a steep decrease in industrial production.

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This way, it can be observed that the lowest value of IPI between 2000 and 2020 was reached in 2009 (-6%), after consumption started a severe contraction in the developed economies starting in 2008 - 2009, pulling the rest of the world after them. It is the time when the industrial production index of Romania reaches its first negative value.

The moment consumption got back on its feet in the EU based on the measures taken by the western countries to support it took their place, in April 2013, the industrial production index of Romania reached its highest value of this indicator (8%), which showed that things started to go back to normal after the crisis hit.

The steep decrease that is being seen in August 2019 (-6.7%) and if this one is easily explainable due to the fact that in August a lot of people take days off, the beginning of 2020 doesn`t look very well considering that in March Romania had an IPI of -12.7%.

Future predictions based also on the previous graph point to a steep decrease in new industrial orders that translate into a decrees in the industrial production index. If predictions are being made for the next period of time until 2022 the graph will show like this: a decrease in the IPI mean/year by 14% for this year 2020 and between -8% and -6% for 2021 and 2022. Only in 2023 a recovery is going to be sighted.

The predictions are being made by assuming that a decrease will happen exactly the same way it did between 2008-2011. Considering the proactive measures that are being taken now by the central banks regarding quantitative easing measures, stimulus packages and fiscal deductions, the decline should be less pronounced and the recovery should feel more reinvigorated.

Nonetheless, this situation is going to have repercussions on the employment market, issue that is going to be debated next.

4. The employment market

In Graph no. 3 can be observed the big fluctuations of unemployment in Romania during the observed period of time. From this graph one can conclude that the start of 2000 meant there was a decrease in unemployment until 2008. The combination between a vast economic boom and EU accession that opened the borders for Romanian workers to go abroad and find a better paid job laid down the foundations for the elegant decrease that represented the golden age for the unemployment rate indicator.

After 2008, when the economic crisis erupted, the unemployment has touched peaks unseen since the early 2000s. In 2009 (7%) and respectively in 2010 (8%) it was the highest recorded unemployment data. This indicator shows how hard the Romanian people were hit by the crisis. This type of activity was also depicted in Kimberly, A. (2008) work regarding the effects of the former 2008 crisis.

The austerity measures taken by the government in that period of time, regarding VAT increase to 24% and slashing governmental employees' wages by 25%, affected the economic recovery of the economy.

Since 2011, things started to look better, but even though unemployment rate started decreasing year after year since then, it was anchored until 2016 near the 5%

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indicator. Finally, the index reached a value of around 3% in 2019 and keeping the trend in the early months of 2020.

Unemployment rate 2000 - 2020

Graph no. 3: The Romanian unemployment rate evolution between 2000-2020, mean/year
Source: Graph created by the authors based on information from
https://insse.ro/cms/ro/tags/comunicat-somaj-bim accessed at 20th May 2020. The predictions are made based on the contraction happend in the last recession, taking into consideration the years between 2008-2011

Again future predictions based also on the previous graph point to a steep decrease in new industrial orders that translate into a decrees in the industrial production index that translate also into an increase of unemployment rate. If predictions are being made for the next period of time until 2022 the graph will show like this: a decrease in the IPI mean/year by 6% for this year 2020 and between 6% and 5% for 2021 and 2022. Only in 2023 a recovery is going to be sighted.
The predictions are being made by assuming that a decrease will happen exactly the same way it did between 2008-2011. Again considering the proactive measures that are being taken now by the central banks regarding quantitative easing measures, stimulus packages and fiscal deductions, the decline should be less pronounced and the recovery should feel more reinvigorated.

5. The Coronavirus pandemic and its impact on Bihor County economic activity: measures and implications

In order to protect the health of their citizens, many governments decided to take a huge risk in implementing lockdowns all over the world, knowing how much it could affect the economy. The thought that choosing the most direct measure to cope with "evil" in order to save their populations the governments cannot be blamed for it. No medical system in the world was capable of dealing with such a number of infected people with COVID-19 or any other disease at the same time, and neither were any of the medical systems in the world capable of taking care of their patients with other

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medical records, so in order for lives to be saved, in this case the economy had to take the hit.

Correlating the links between mass shut downs affecting the world economy with the effects registered by the industry and unemployment rate in Romania and making a few economic predictions based on the information gathered, the paper moves forward to observe the evolution of the same macroeconomic indicators at a smaller scale, meaning in Bihor County.

Based on the data provided by AJOFM, the Bihor county employment agency for the following months January, February, March, April, several factors will be analyzed that determined the Bihor county companies with foreign trade activities to temporarily suspend their activity and work contracts for their own employees. One factor analyzed follows the typology of companies that have either reduced their foreign trade activity or have completely suspended their activity, in terms of their size: micro-enterprises, small enterprises, medium-sized enterprises, large enterprises. This factor leads to the following one which analyzes whether there is a temporal difference in the temporary or total activity suspension between enterprises with a single foreign customer compared to those that produce for several customers. The next factor analyzed concerns the period in which companies start asking for help and registering all their employees for technical unemployment or only partially reducing their activity.

The following CAEN codes have been selected because they represent the main industrial production activities correlated with export operations:

- 13 manufacture of textiles
- 14 manufacture of clothing
- 16 Woodworking, manufacture of wood and cork products, except furniture; manufacture of articles of straw and plaiting materials
- 20 Manufacture of chemicals and chemicals
- 22 Manufacture of rubber and plastic products
- 24 Metallurgical industry
- 26 Manufacture of computers and electronic and optical products
- 27 Manufacture of electrical equipment
- 28 Manufacture of machinery, machinery and equipment n.c.a.
- 30 Manufacture of other means of transport
- 31 Manufacture of furniture
- 32 Other industrial activities n.c.a.

After establishing which are the main export oriented sectors of industrial production, the paper goes on to the next step establishing the relevant data and examining the number of companies which operate in these sectors and the total number of employees that they have.

In Table 1 below, based on the data provided by AJOFM, at 31.12.2019, the companies were classified by the number of employees in four categories: between 0-9, between 10-49, between 50-249 and over 250. The picture for the 11 export oriented industrial sectors stands like this: there are 1.122 companies that are operational and they employ almost 23.000 people. The vast majority of companies

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are SMEs, the below classification showing that there are 860 micro companies, 188 small companies, 60 medium companies and 14 big companies.

Table 1: Companies classification based on SMEs standards, the number of companies and the number of employees at 31.12.2019

	13	14	16	20	22	24	26	27	28	31	32	Total Companies
Between 0 - 9	34	195	172	21	150	22	16	9	19	115	107	860
Between 10 - 49	12	46	29	6	38	2	2	3	8	22	20	188
Between 50 - 249	4	23	1	2	10	1	2	3	1	9	4	60
Over 250	0	1	0	0	3	0	3	1	1	4	1	14
Total Companies	50	265	202	29	201	25	23	16	29	150	132	1122
Total Employees	659	3946	1171	331	4340	279	5109	670	893	4127	1319	22844

Source: data provided by AJOFM. Disclosures were being requested in order not to give companies names and the amount of government help they received.

The main export oriented sectors are 14 manufacture of clothing, 22 manufacture of rubber and plastic products, 31 manufacture of furniture. For sector 14 manufacture of clothing Romania had a competitive advantage after the year 2000 but after that lost it to other countries in Asia. This particular sector had a positive result in the trade balance, adding each year after 2000 only trade surpluses. The same thing can be said for sector 31 manufacture of furniture.

Even though at the end of 2019 things were relative stable and the first two months of 2020 brought a steady output increase, nobody believed that the Coronavirus pandemic will hit the economy with such fierce and would create havoc in the future. In March a lot of European countries started to impose lockdowns, and basically hit the export oriented sectors of Bihor County. The table of March total lockdowns of non-essential economic activities in the West is as follows: 11.03.2020 Italy, 14.03.2020 Spain, 15.03.2020 Romania, 16.03.2020 Austria, 17.03.2020 Ireland, 18.03.2020 Belgium and Denmark, 22.03.2020 Germany, 24.03.2020 Britain and Portugal

Since the four main export partners of Romania imposed lockdowns on non-essential economic activities what can be seen in Table 2 is the result of early lockdowns on several export oriented sectors that were feeling the first early signs of a consumption contraction in the West.

Since the lockdowns started after the middle of March, the results are encouraging, since only 72 companies ask for governmental help in supporting the cost with suspended employees' contracts. But at closer look, even if the figures are low, three sectors suffer the brunt of consumption contraction in the West and at home, being 14 manufacture of clothing, 22 manufacture of rubber and plastic products, 31 manufacture of furniture. These sectors show signs of distress because the big

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companies and the medium ones that employ 20% of staff for sector 14, and more than 50% for sector 22 and respectively 31, are affected.

Table 2: The number of companies that received governmental help at 31.03.2020

March	13	14	16	20	22	24	26	27	28	31	32	Total Companies
Between 0 - 9	3	8	4	1	6	2	0	1	0	3	7	35
Between 10 - 49	0	5	1	1	3	0	0	0	0	2	3	15
Between 50 - 249	0	3	1	0	4	0	0	2	0	4	1	15
Over 250	0	1	0	0	3	0	0	0	0	2	1	7
Total Companies	3	17	6	2	16	2	0	3	0	11	12	72

Source: data provided by AJOFM. Disclosures were being requested in order not to give companies names and the amount of government help they received.

This is only the gathering of the clouds, because the economic storm is at the corner for the world economy, but also for the case study at hand: Bihor County.

Table 3: The number of companies that received governmental help at 31.05.2020

April	13	14	16	20	22	24	26	27	28	31	32	Total Companies
Between 0 - 9	32	189	163	20	145	22	15	9	17	109	101	822
Between 10 - 49	11	38	28	5	35	1	2	3	7	19	19	168
Between 50 - 249	4	18	1	1	10	1	2	3	0	8	3	51
Over 250	0	0	0	0	2	0	3	0	1	4	1	11
Total Companies	47	245	192	26	192	24	22	15	25	140	124	1052
May	13	14	16	20	22	24	26	27	28	31	32	Total Companies
Between 0 - 9	33	193	170	21	147	22	16	9	18	112	104	845
Between 10 - 49	12	40	28	6	37	1	2	3	9	20	20	178
Between 50 - 249	4	22	1	1	10	1	2	3	1	9	3	57
Over 250	0	1	0	0	2	0	3	0	1	4	1	12
Total Companies	49	256	199	28	196	24	23	15	29	145	128	1092

Source: data provided by AJOFM. Disclosures were being requested in order not to give companies names and the amount of government help they received.

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In Table 3 which comprises the available economic dates for all the sectors in April and May shows the horror that the lockdowns created. It is a complete nightmare for local and national officials that see the staggering number of companies that have suspended contracts and asked for government relief.

What can be seen in Table 3 is that all the sectors are affected. Almost 90% of the companies have suspended contracts and asked for government relief and the figure is climbing. The brunt force of consumption contraction due to lockdowns affected everybody.

Table 4: Total number of suspended working contracts and total value in RON of awarded benefits at 31.05.2020 for the entire Bihor County

	Total number of suspended working contracts	Total Value in RON of awarded benefits
March	16.432	8.672.823
April	37.625	61.866.592
May	32.173	44.213.216

Source: data provided by AJOFM. Disclosures were being requested in order not to give companies names and the amount of government help they received.

The measures taken by local and governmental officials through AJOFM came in support and relieve the financial burden for the effected companies and sectors. In Table 4 the consequences of local and governmental officials through AJOFM actions can be seen. If in March only 16.432 got their contracts suspended and AJOFM paid 8.672.823 RON, in April and Main the picture gets gloomier. The number of suspended contracts rise to 37.625 and the economic relief to 61.866.592 RON, an increase of more than 700%. In May things appear better, but still severe, with 32.173 suspended contracts and a cost of 44.213.216 RON for the government.

6. Conclusions

From the economical point of view, there were businesses that had to cut off staff, some of them even closed due to the Coronavirus pandemic, and some economists even thought that this would cause a huge economic crisis. Even though it is way too early to come to a conclusion if COVID-19 will cause a global economic meltdown, it is clear that it has already affected Bihor County entire export oriented sectors for like 14 manufacture of clothing, 22 manufacture of rubber and plastic products, 31 manufacture of furniture which were hit badly and forced to either close factories or suspend contracts for their employees, causing further supply chain disruption and ultimately a decrease in demand.

The full extent of the impact of the Coronavirus pandemic to the economy, won`t be something to see before the end of 2020, due to the fact that most of the big industries work based on orders placed months ahead or even years sometimes.

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The proactive measures taken by the government in order to support the financial relief of companies with their workers will be seen at the beginning of 2021. If the measures only supported zombie companies and industries than it will a very difficult situation in the future, because some big names could go bankrupt, affecting further the supply chain and creating disruptions.

If the Western economies bounce back to the consumption level before the pandemic, the sentiment is that companies from the 11 export oriented sectors from Bihor County will further produce vendible goods.

In the end it was proven that even if all the macroeconomic indicators were showing no signs of economic distress at the horizon, an event such as the Coronavirus pandemic can turn the economy upside-down.

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SOCIAL MEDIA AND ITS EFFECTS ON THE GROWTH OF BUSINESSES

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Abstract: *Social media, and social networking, have changed the business landscape, both for companies that have adopted them and for those that have not. By definition, social media represent platforms where members share content with a wide audience, with the focus on the content, while social networking sites are more centered on conversations and groups having the same interests. Facebook, which pulls the line dividing the two types of interactions, has 600,000 regular users worldwide and welcomes companies, organizations, and brands to use its platform to connect with their audience. Almost all social networks have incorporated a measure of social media, allowing users to become curators of the interesting content they find, sharing links, images, and short personal stories. Businesses which have learned to create content and engage in conversations are already 'in the stream' – and more and more, internet users expect they will be able to interact with their favorite brands. Companies that have embraced this have a definite advantage over those which have not. The aim of this paper is to investigate the role and economic impact of social media on businesses. It aims to investigate the benefits available from the use of the internet and social media sites for businesses. Social media have a positive impact on businesses and offer an opportunity for their audience to find them on social media. It helps to reach to their targeted audience, stay engaged with them and respond to their questions instantly. It is a great way to evaluate their competition by monitoring their social media pages. The paper focuses on the multiple positive impacts on business in terms of brand recognition, customer engagement, revenue, and customer service. It emphasizes the importance of social media in the growth of businesses, being also a great tool to evaluate their competitors and how they are using social media for their growth. By using social media, business are taking every opportunity to increase awareness of trade and development opportunities in a way that drives changes in behavior and inspires action. Doing so connects a certain industry with business opportunities abroad and leads to sustainable development in partner countries.*

Keywords: *media; social media; business; customer engagement; brand recognition.*

JEL Classification: *Z19.*

1. Heading: What is social media? Definition and General Considerations

Social media is the way people can communicate or interact online. It is called social media because the users are involved in a social context, which includes

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conversations, comments, but also annotations or interactions. Content publishing has become increasingly simple in recent years, which has helped its development. Users can now easily create content on a growing number of platforms, including the ones they own (websites, blogs, etc.) or rent them. Today, we can very easily make our opinions known.

If it is to look for a definition that is as simple as possible, social media is made up of websites or online or mobile applications that encourage the exchange of information and the creation of content by users, be it text, images, audio or video. Most of the applications that are part of the social media landscape are in the image below:
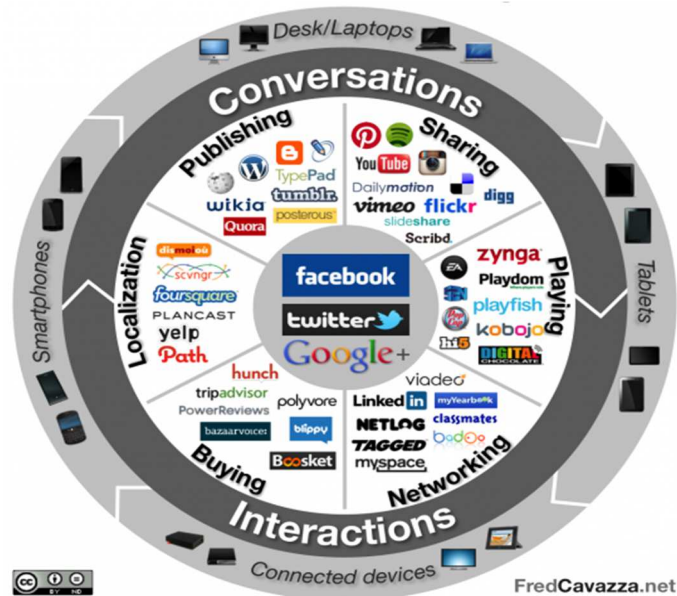
Figure 1: Social Media Landscape
Source: https://fredcavazza.net/2012/02/22/social-media-landscape-2012/

When we talk about media we talk about social networking sites such as: blogs; forums; social networks (Facebook, LinkedIn, Pinterest); microblogging services like Twitter; video sharing sites like YouTube, Vimeo; photo sharing sites like Flickr or 500px; mobile apps that allow you to share photos with friends like Instagram; instant messaging services such as Yahoo messenger; Internet telephone services such as Skype; online games like World of Warcraft; virtual worlds like Second Life; online encyclopedias (wiki) like Wikipedia.

Currently, there is a great emphasis on social media due to the concrete socialization need. Consumers need socialization, interaction, tips and guidance. Businesses, at the same time, need feasible opportunities through which to make their services and products known in a humanized manner, in a tone and content

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that is as close as possible to what is sustained and accepted by ideal consumers, of target audience.

That is why we are heading to social networks and blogging. Both are useful tools in the hands of entrepreneurs ready to take their businesses one step further, towards a period when the business environment is moving towards maximum efficiency. Social media keeps the companies interested also due to the opportunity to collect feedback. Consumers are more willing to provide valuable information for the companies, complaints and discontents, suggestions and tips when the businesses approach them in a familiar climate and through representations with socialization and interaction skills.

Moreover, social media is a tool that brings efficiency in business and because it is more than vital to follow the clients and potential clients in environments where they spend considerable time.

A message, a video component, an article or a contest announcement, all are likely to turn into viral content through social networks. The speed with which the message is propagated within a social network is one of the elements the companies rely heavily on to promote their services and products in their portfolios.

Even so, the benefits of social media come only for those who plan carefully and with the help of the right strategies the incursion and activity within a social network or blogging. It requires strategy, organization, a well-developed plan, consistency and professionals who are ready to build a successful reputation.

2. Why do businesses need social media?

Social media has become one of the components without which businesses are much less likely to turn into successful businesses. There are numerous examples of business ideas that had their origins directly in social media and developed through social networks or through blogging.

For business, the growth of social media brings great opportunities but also responsibilities. The large amount of data that consumers make available through social media means that marketing specialists have more and more information that can help them in their campaigns. The real advantage, however, is the possibility to develop long-term relationships with customers, quantifiable relationships. At the same time, it begins to take shape the responsibility for these clients. As consumer behavior has changed, so have expectations. Irrespective of the fact that the business is online or not, its customers may have opinions or conversations about it.

If a few years ago the question related to the importance of social media for business development was rarely asked, it is now on the lips of anyone from the beginning. It is now accepted that social media must be part of the marketing and PR of any business.

The Social Media Examiner's End-of-Year Report 2019 shows that the importance of social media marketing has increased amazingly: 86% of marketing specialists said that social media is very important to their business, and 89% believe that the main benefit of marketing through social media has been increasing the exposure and visibility of their business. The major benefits that were mentioned:

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• increased exposure and visibility;
• increased traffic;
• creating an environment of loyal "fans";
• increased business partnerships;
• increase sales and decrease marketing costs;

Social media should grow and consolidate on an existing brand. Efforts to develop social media should be an extension of what the other departments of the company are doing. Capturing the company's voice and sharing it through social media will open a unique opportunity on other levels: marketing, branding, public relations, advertising, sales, etc.

The information can be distributed through social media at an extremely fast rate, and users are increasingly using channels to share information in real time. This information often consists in opinions so if the company is careful, social media can become an invaluable source of feedback. If they consider these feedbacks in the development of the product they can reduce the costs for the services with the clients, thus satisfying their needs. It integrates social media into marketing strategies from the beginning and does not wait until the end of a campaign.

If the presence on social media is made from the beginning, the brand will benefit from the opinions of the customers, and their needs can be actively listened to.

Statistics on social media

A study by Hootsuite (https://hootsuite.com/) found that there are now 3.196 billion people using social media, up 13% from last year. Another Hootsuite study saw that 11 people joined social media every day. For Instagram, in particular, they found the total number of global Instagram users increased by a third over the past year. More and more users join social media sites every day. Meaning there is a lot of opportunities to be seen.

Nowadays, in the year 2020, social media channels are evolving with the speed of light. There are more and more people using sites like Facebook, Twitter, Instagram, Snapchat or TikTok. This means that in the coming years this industry will evolve more and more. And if businesses want to survive, they should take advantage of it.

Figure 2: Social media statistics proving the importance of social media in business
Source: https://www.lyfemarketing.com/blog/importance-social-media-business/

Every business must turn to an online marketing agency and optimally use the best social media channel, not because it is a trendy thing, but because the target

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audience is around the social networks. They "connect" at different levels with their favorite brands.

According to Smith (2019), 71% of consumers are more likely to recommend a brand to others if they have a positive experience with the respective brand on social media networks.

According to 2019 social media statistics, there are now 3.2 billion users around the globe. That is about 42% of the total present population.

- 68% of adults based in the U.S only reportedly have a Facebook account;
- active social media users are composed of 48.2% Baby Boomers, 77.5% Generation X and 90.4% Millennials;
- an interesting research shows that a user spends an average of 2 hours and 22 minutes in his social media account everyday including messaging;
- 73% of online marketers agree that their efforts in implementing a social media marketing strategy for their business has been effective;
- 2 million business today use Facebook advertising for promoting their products and services.
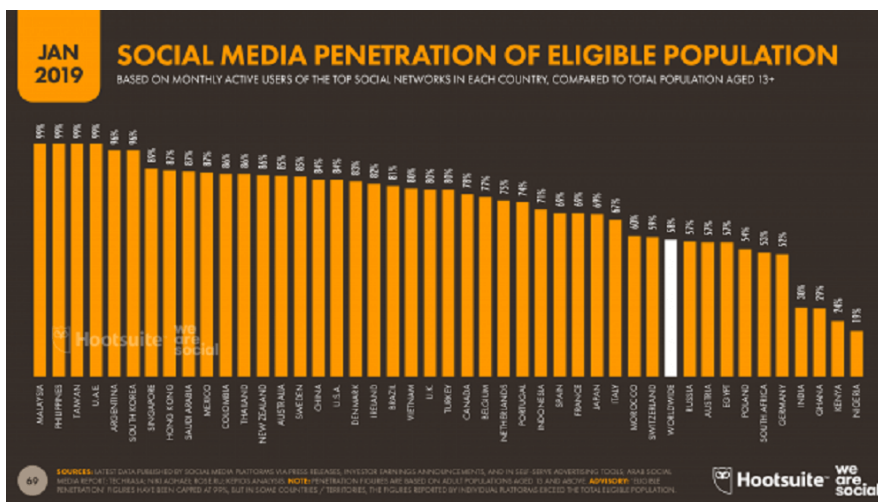
Figure 3: Social media penetration of eligible population
Source: https://www.lyfemarketing.com/blog/importance-social-media-business/

Further, we are presenting some statistics related to social media, which prove beyond any doubt that businesses need sites such as Facebook, Twitter and LinkedIn to keep up with the competition:

• the number of adults using social media sites has increased from 7% in 2005 to 69% in just 14 years;

• the number of those who access social media sites on mobile devices increases by 30% every year;

• 2 million business people today use Facebook advertising to promote their products and services.

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Obviously, social media is the element that changes the game. It is a fact that social media will continue to be the element with a significant impact of marketing specialists and business owners even in 2020 - they have the opportunity to communicate on a personal level with the target audience day by day, which can be seen in marketing, customer services, sales and other components of a business.

Facebook is still a market leader among social media networks and continues to grow. Latest data:
• 1.26 billion users;
• 1.23 billion active users at least once a month and 945 million mobile application users;
• in the US alone, there are 128 million daily active users.

In second place is Google+ with just over 50%, while Facebook dominates with 70%. It should be remembered, however, that when creating a Gmail account, it is mandatory to create a Google+ account, which raises the percentage of the social network.

LinkedIn is still the most important social networking business and continues to have an upward trend, but not in the rhythm of Pinterest, Google+ or Twitter.

Pinterest is the fastest growing social network at the moment, registering an increase of 88% in the last 12 months.

The key factors to be followed in promoting social media in 2019 and 2020, according to the Global Web Index:
• mobile application (smartphone) - the number of people who have access to internet from mobile or smartphone has increased by 60.3% to 818 million in the last 2 years;
• target audience segmentation by age - the demographic group with the highest growth rate of Twitter accounts is between 55 and 64 years, for Facebook and Google+ the interval is 45-54 years, with a 46% increase, respectively 56%.

3. Advantages of media use on businesses

Advertising on social networks can be considered a relatively new marketing method, but it is evolving faster than we can imagine. Think of Facebook or Facebook Ads campaigns, for example. Even though Facebook has used advertisements since 2005, in the first quarter of 2017, Facebook ads managed to add revenues of 9.16 billion Euros. This shows that social media advertising will have a bright future.

Advertising on social networks is characterized by:
• *Reduced ad costs*: Compared to traditional advertising methods, such as print media, TV and radio advertising, social media ads are cheaper.
• *Reaching the target*: Traditional advertising does not give you the luxury of reaching the target audience as with social media ads. By using this type of marketing you get exactly to the target audience, increase conversions and ultimately get a higher return on investment.
• *Real-time performance analysis*: Any type of offline advertising does not give the opportunity to analyze the performance of the advertising campaign. Ads on

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social networks allow the company to constantly track how well (or how bad) its ad is received. The business can modify its ad "on the go" and instantly see the results.
• ***Boost brand awareness***. Social media proves to be a powerful tool when it comes to growing your brand awareness. There are businesses who dismiss it as a way to build a brand, but by doing that, they're leaving an open ground for competitors. On the other hand, many reputable chief marketing officers agree that social media has a definite impact on brand awareness.
Increasing brand awareness via social media involves several steps:
• ***Finding the audience****:* Before starting focusing on a particular social platform, a business should find out whether its target audience is on it. It can do this by searching for relevant conversations about its product or industry. For example, a B2B company may find their audience on LinkedIn rather than Facebook.
• ***Using visuals****:* Once a business knows where its target audience is, it should grab people's attention by using eye-catching visuals with its content. Images and videos play a big role in helping a business grow its brand awareness on social media channels.
• ***Creating conversations:*** Social media is all about building conversations. If a company uses these social platforms for one-way communication, it will only grab so much attention. Instead, it should talk and listen, get involved, showcase its personality by conversing, tagging and mentioning others.
• ***Measuring the efforts:*** A business should use *the* tracking tools provided by the platforms (eg: Facebook Page Insights) along with other external tools such as URL shorteners, Google Analytics, etc. to measure its social media activity. Alos, it should use the insights to understand what is working so that it can optimize its efforts and build a stronger brand with social media.
• ***Building authority:*** If a business wants a higher engagement rate along with better brand awareness, it should work on building its authority by sharing real value. Along with borrowed content, the company's content should also have something original, as it adds to credibility.
 • ***Increase Inbound Traffic -*** Inbound marketing is one of the most effective ways to generate targeted traffic to a website. It is the kind of traffic that actually converts because it is very relevant.
By putting in more effort in social media promotion, a business can create a whole new channel to draw in laser targeted inbound traffic and get more inbound links.
For example, having an active blog makes it easy for a business to connect with its audience with the help of fresh content. But by having them share this content (on the right time) on Twitter or Facebook increases the company's reach ten times. The business is suddenly reaching out to a bigger audience that may like plus share its content, follow its brand and ultimately become a customer. Similarly, people that are already actively searching for keywords related to a particular company's product or service are a smaller percentage than those who are not. Social media helps a company connect to this larger, untapped segment of the market. By using social media, a company can diversify its marketing efforts in more than one way. It does not reach out to just one type of crowd, but connects to a versatile customer base which is crucial for the brand to make a mark in its niche. For instance, serious professionals may find the company's website via LinkedIn while the younger crowd

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or the millennials may find it on Instagram. Each piece of social media content that the business creates is a new door for new customers to enter.

• *Improve Search Engine Optimization*

When a company is interested in the optimization of its search engines, the results are higher chances to be found via web. According to Matt Cutts, the former spam head of Google, social shares have no impact on your website's ranking. (https://seodigitalgroup.com/what-are-social-signals/) But, it is a fact that social media properties do dominate the front of the search engine result pages for brand names which means, social media profiles have the power to rank in the top 10 results. Social media profiles are a great way to connect a business to its prospects and customers. They work as a doorway to the business website because they show the human side of the business. They not only inform the searcher about the business, but also help them become a part of the conversations as it can be seen in the image below, showing the social media profiles of the Romanian jewelery company, Bon Bijou.

Figure 4: Social media profiles of the Romanian jewelry company Bon Bijou.
Source: Own processing

By optimizing social profiles and by keeping them fresh with the right content, a business can create a stronger presence on the web, it gets more exposure and it has multiple channels to draw people towards the business. People are no longer dependent on Google search when they need to connect to something or someone. Today, search is not limited to the mighty web search engines. It has moved beyond, which is why social media platforms such as Facebook and Twitter are the new search engines.

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There is massive amounts of content being created and shared on the social web. This content can easily be discovered by users with the help of keyword search, hashtags, etc. When people search for the type of content a company is publishing on its social media page, it may win new fans that want to follow, connect and do business with the business. It is just not about the content, but also about the content producer, which is the company. When people see great content being created and shared, they are curious about who is behind it. This may lead them to look the company up on LinkedIn and learn more about the business. Being a business it is important that it takes the necessary steps to stand out from other competing social media profiles and avoid have duplicate accounts.

Social media can also contribute to the enhancement of a company's *brand loyalty*. If a business wants to get the most out of its social media marketing efforts, it is crucial that it focuses on increasing brand loyalty. Having a loyal following means better engagement and better conversations. If asked about their trusted brand, any loyal social media follower will speak positive about it without the need to push. Which leads to natural word of mouth marketing. Brand loyalty can be enhanced on social media by having a powerful media strategy. Social media platforms are evolving, and each has its own personality. Facebook is not Twitter, and Twitter is not LinkedIn. It means that a business has to formulate a social media strategy that clearly aligns its goals with other areas such as content marketing, search engine optimization, etc. This should give the business a fair idea of what type of value it can create for its loyal social media followers. It will allow the business to not only retain them but also help them spread the word.

Also, there is a reason why a business' followers are loyal to that brand. Peolpe are looking for value, therefore the business must deliver it at all times by sharing quality content. For example, visual content gets more shares than regular social media content, which means the business should make use of photos, videos, etc. as long as they add some value.

Then, consistency is a must. Every brand has a personality, and certain aspects that are unique to it. By identifying these personality traits and by bringing them out, it gets easier for a business to connect to its target audience. The aim should be to be consistent in their approach and maintain the same voice throughout their interactions. The content that a business creates/shares along with how it converses with others should reflect the brand's personality.

In the same time, a business should be in touch with its followers by responding to queries.Media followers always look to a business for answers. Answering to these followers, a business will show that they really care about others and establish themselves as experts or authorities. A mistake that a lot of business make is to present themselves as big corporations. People need people which is why a business needs to connect to its followers on a more personal level and engage in real conversations.

5. In conclusion

In recent years, platforms such as Facebook, Twitter, Google+, LinkedIn, YouTube, Pinterest, etc. all experienced a real explosion. We can say that the era of social

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media is just beginning, and the needs of social media in business will become more and more.

Whether it is a small business or a multinational, the business' clients are online. We use social media, interact with friends, colleagues, other companies, seek information, recommendations but also fun ways. If a business is not present to provide answers, the competition will be and will probably take it any client and any potential client.

There are many ways in which a business can add value to it but also opportunities through which a company or brand can build a relationship with a customer. A business can use social tools, site data, customer data, even its own observations to help it see what kind of customers will choose their brand and not give up on it.

It is important to note though, that the best communities and relationships are those built organically. While research and brand awareness encourages people and helps them take a step forward, the relationship takes time. Businesses cannot evolve if they ignore customer interactions online. They have to use this opportunity to get closer to their target audience, to reach people in a unique and authentic way, to bring more traffic to the site, to increase the authority of their brand. The perception that social media promotion would be useful only in the case of a small business can no longer be mistaken. These are only a few of the companies that successfully use social media: Absolut Vodka via online video on Youtube and Facebook page for Top Bartender fans, BMW uses Facebook to promote the car series, and even Barack Obama who successfully used Twitter in the presidential campaign.

The conclusion is that the use of social media has become extremely frequent and important, and these are some of the goals it can fulfill: offering an identity for the products and services offered, but also for the business; exposing the business and products of a target group of people who have not had contact with them until now; social media creates the feeling that the business is "real" for new customers and offers personalized information, not standard information about the latest products and offers.

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THE COMPETITION POLICY FRAMEWORK FOR EXCESSIVE PRICING

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Abstract: *The paper introduces the concept of excessive pricing within the framework of the competition policy. Charging high prices by an undertaking is a natural freedom in the context of a market economy. Still, a company that detains an important market power has a special economic and social responsibility to ensure that its conduct does not distort competition or negatively affect the consumers' welfare on that market. A company in such a position is deemed to poses a dominant position on the market. Specifically, in regard with the notion of excessive pricing, a dominant undertaking should not make use of the opportunities arising out of its special market power in such a way as to gain trading profits which it would not have benefit if there had been sufficiently competition. The paper briefly analyzes the method used when establishing dominance, as well as various forms of abuse of a dominant position on the market, finally focusing on the evaluation of excessive prices. Relevant excessive pricing cases are presented, covering 45 years of European experience, since 1975 to the present day. In regard with the evolution of the methodology for analyzing potential excessive prices by the competition authorities, the cost/tariff comparison as part of the United Brands test is a cornerstone in the European jurisprudence. The notion of 'economic value' is for the first time used in 1978 and criteria set in the United Brands case provide for a 2 steps approach to the assessment of excessive prices. Other ways of assessing excessive pricing are dealt with, as the European Court of Justice observed that economic theorists have not failed to think up several methods to deal with the issue. Yardstick competition and the elimination of the excessive costs from the evaluation are examples of such alternative methodologies used when analyzing excessive prices. The paper concludes with the presentation of the recent European Commission investigation into excessive pricing in the pharmaceutical sector, and proposes the idea that monopoly companies' tariffs might be easier to evaluate in the context of excessive pricing.*

Keywords: *abuse of dominant position; competition policy; excessive prices.*

JEL Classification: *K21; L41.*

1. Brief introduction to the notion of abuse of dominant position within the framework of the competition policy

1.1. The implementation of modern competition rules
Modern competition rules, or the antitrust rules, were established in 1890 in the United States (US) with the enactment of the Sherman Antitrust Act, named after its promoter, Senator John Sherman. Sherman Antitrust Act is referred to as *the constitution of the competition system* (Heyne, 1991, as cited in Dodescu, 2000).The

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law was intended to prevent the practices of monopolization and the restriction of competition by large US companies that cooperated to set prices, production levels, or market shares. Still, the Sherman Antitrust Act did not prohibit the holding of a monopoly, considering that a law intended to promote competition must allow the possibility of obtaining a monopoly as a result of higher efficiency (Dodescu, 2000).

After World War II, European antitrust rules were initially introduced in the European Coal and Steel Community Agreement in 1951. Article 65 of the agreement prohibited cartels, and article 66 established provisions for economic concentrations and for the abuse of a dominant position held by companies. Subsequently, the Treaty of Rome of 1957, or the EC Treaty, which established the European Economic Community, included these competition rules in article 85 and article 86 (Papadopoulos, 2010).

Today, article 101 and article 102 of the Treaty on the Functioning of the European Union (TFEU) establishes, at Community level, the general framework for the pursuit of economic activities in accordance with competition principles, by prohibiting certain types of agreements between undertakings and by prohibiting certain abusive practices of dominant undertakings.

Briefly, the antitrust rules prohibit two major types of business practices, namely *(i)* anticompetitive agreements between multiple undertakings (e.g price fixing, market sharing, bid rigging) and *(ii)* the abuse of a dominant position detained by a single undertaking on the market (e.g discrimination, excessive pricing).

1.2. Examples of abuses of dominant position in the market

Antitrust rules prohibit abusive conduct by undertakings that have a dominant position on a particular market.

Being dominant on a market presumes that an undertaking has such an important market power that is able to commercialy behave independently of the actions of the competitors. The extreme case of a dominant position is a monopoly, where the undertaking in concern faces zero competition.

To be in a dominant position is not in itself illegal and a dominant undertaking is entitled to compete on the merits as any other company. However, because of its special market power, a dominant undertaking has a special responsibility to ensure that its conduct does not distort competition on that market or on other markets. Examples of behaviour that may amount to an abuse include: *(i)* requiring that buyers purchase all units of a particular product only from the dominant company (exclusive purchasing), *(ii)* setting prices at a loss-making level (predation), *(iii)* refusing to supply input indispensable for competition in an ancillary market, *(iv)* charging excessive prices (European Union, 2013).

Abuse of a dominant position by excessive pricing is a direct way of affecting the interests of final consumers. If a large part of the anti-competitive practices implies an indirect affectation of the consumers, by distorting the competitive environment, the unilateral imposition of excessively high tariffs implies the direct affectation of the economic well-being of the clients. This is also the reason why the prohibition of such practices was included in the European regulations from the beginning. Moreover, it is important to note that not only monopoly companies are likely to impose excessive prices, but also companies active in competitive markets, but in those markets where

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competition is substantially diminished by the existence of a key player, with a special market power.

2. Assessing dominance

The abuse of dominance antitrust rules that are laid down in the TFEU are enforced by the European Commission (Commission). At the level of each European Union Member State the competition authorities apply the national antitrust rules. Antitrust rules at the national level are similar with those at community level (Scurt, 2020).

In order for an undertaking to be in the situation of abusing a dominant position, it is necessary that a competition authority establishes that the respective company is dominant. Defining the relevant market is a technical instrument that allows competition authorities to determine the position of an undertaking on a certain market. The competitive constraints have to be analyzed, respectively the substitutability at the level of demand and supply of a certain product/service, as well as the potential competition (Wish; Bailey, 2015).

In accordance with the legal provisions in the field of competition, when assessing dominance a competition authority will define *(i)* the relevant product market and *(ii)* the relevant geographic market.

The relevant product market is made of all products/services which the consumer considers to be a substitute for each other due to their characteristics, their prices and their intended use. The relevant geographic market is an area in which the conditions of competition for a given product are homogenous.

Establishing the market shares is very useful when assessing the importance of each undertaking on the market in comparison to the others. The competition authorities' economic view and practice is that the higher the market share, and the longer the period of time over which it is held, the more likely it is to be a preliminary indication of dominance. In general, as historically data of the European jurisprudence shows, if an undertaking has a market share of less than 40%, it is unlikely to be dominant. Therefore, a market share over 40% represents a solid indicator of a potential dominant position. This indicator does not represent in itself a proof of a dominant position, subsequent analysis being needed. The competition authorities also take other factors into account in their assessment of dominance, including *(i)* the ease with which other undertakings can enter the market – whether there are any entry barriers on the market, *(ii)* the existence of countervailing buyer power, *(iii)* the overall size and strength of the undertaking, its resources and the extent to which it is present at several levels of the supply chain, or vertically integrated (European Union, 2013).

3. Excessive pricing - cases and methods of evaluation

An excessive price is a price set by a dominant undertaking excessively above the competitive level in order to exploit its customers. The evaluation of the excessive character of the prices enforced by an undertaking in a dominant position may encounter certain difficulties in practice even if the evaluation is performed *ex post*.

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The main difficulty that arises is establishing an adequate benchmark (what the price might have been in a more competitive market).

The antitrust rules concern the possible ability of an undertaking to exploit consumers by imposing unfairly high prices. Consumer protection is a legitimate objective of antitrust rules, which is particularly evident where markets are characterized by structural problems and require the intervention of competition authorities.

If a dominant company receives excessive profits, it can send an important signal in attracting new players to the market. In the absence of substantial barriers to entry, any intervention that would reduce the profits of the dominant undertaking could be unnecessary and could lead to the blocking of effective market signals for potential competitors. Therefore, a prudent approach to intervention against high prices would be needed, when new market entrants are expected to be stimulated within a reasonable period of time.

On the other hand, where barriers to entry are very high, the interest of competition authorities in protecting consumers is fully justified. Thus, although the competition rules should not restrict the undertaking's ability to succeed in the market, it is legitimate for those rules to prevent the improper exploitation of market power. It should also be added that in some cases, the dominance of a company is the result of forces other than competitive ones (OECD, 2011).

3.1. The United Brands case and the 'economic value' concept

One of the most relevant European case regarding excessive pricing dates from 1978 - the *United Brands case*. United Brands Company (UBC) was the main supplier of bananas in Europe, using mainly the *Chiquita* brand. In *United Brands* the Commission condemned UBC for charging excessive prices for Chiquita bananas in Germany, Denmark and Benelux countries. It compared the prices with those of competitors' unbranded bananas and with the price of Chiquitas in Ireland. The Commission sustained that the prices were "excessive in relation to the economic value of the product supplied". The European Court of Justice (ECJ) annulled the Commission's decision that excessive prices had been charged (Case 27/76 *United Brands v. Commission*, 1978).

The ECJ judgment in *United Brands* represents an important standard for most of the cases of excessive pricing that the competition authorities have pursued since.

According to Jones and Sufrin (2004), the Commission decision "was quashed because the Commission had failed to do its work properly. It had not presented sufficient evidence and had not analyzed UBC's costs. The Court accepted that excessive prices can constitute an abuse and that charging a price which has no relation to the 'economic value' would be excessive. But what is the economic value of a banana other than what a customer is prepared to pay for it?"

In order to answer the last question it is necessary to appeal to the text of the ECJ judgment.

In *United Brands* the ECJ used the concept of 'economic value' as following: "charging a price which is excessive because it has no reasonable relation to the economic value of the product supplied" would be an abuse when „the dominant undertaking has made use of the opportunities arising out of its dominant position in

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such a way as to reap trading benefits which it would not have reaped if there had been normal and sufficiently effective competition".

Next, the ECJ judgment specifies the criteria needed to be taken into account when assesing excessive prices: "The questions therefore to be determined are whether the difference between the costs actually incurred and the price actually charged is excessive, and, if the answer to this question is in the affirmative, whether a price has been imposed which is either unfair in itself or when compared to competing products".

Basically, the criteria set in the *United Brands case* provide for a 2 steps approach to the assessment of excessive prices:

- cost vs. tariff comparison - in the situation of an excessive difference being noted the next evaluation step should be approached, respectively
- comparison of allegedly excessive tariffs with tariffs charged by other competing undertakings.

As the ECJ judgment states, other potential ways of evaluating and determining excessive tariffs are also accepted in practice: "Other ways may be devised - and economic theorists have not failed to think up several - of selecting the rules for determining whether the price of a product is unfair".

Historically, the Commission has not dealt with numerous excessive prices cases, appearing to agree with many economists' view that interference with high prices and profits *per se* is a disincentive to innovation and investment (Jones; Sufrin, 2004). One of the Commissions' excessive pricing decision that has been upheld by the ECJ is *British Leyland*, where the Commission determined that British Leyland undertaking had charged higher prices for bestowing certificates of conformity for left-hand drive cars than for right-hand drive cars. In 1985, ECJ stated that an abuse of dominance violation occurs when the fee charged by an administrative monopoly is disproportionate to the economic value of the services rendered (Case 226/84 *British Leyland v. Commission*, 1985).

3.2. Yardstick competition

As it results from the United Brands case, the cost/tariff analysis is not the only way to assess potentially excessive prices. Another method of analyzing the potential excessive character of some prices is the so-called yardstick competition.

In the case *Corrine Bodson v Pompes Funebres*, a question to the ECJ was whether Pompes Funebres, which was granted the exclusive right to provide "external services" for funerals in a city in France, is guilty of imposing excessive prices. The ECJ has ruled that, given that more than 30,000 localities in France have not granted such exclusive rights, leaving the domain unregulated or operating on the market themselves, it must be possible to make a comparison between the prices charged by the companies benefiting from concessions and other undertakings: such a comparison could provide a basis for assessing whether the prices charged by concession holders are fair (Case 30/87 *Bodson v Pompes Funebres* ECR 2479, 1988).

Such a technique can be described as a *yardstick competition*: comparing the performance of one enterprise with the performance of other enterprises (Wish; Bailey, 2015).

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3.3. Eliminating the excessive costs

In the case *Ministere Public v Tournier*, a case concerning the level of royalties levied on dancing public places by a French copyright company, the ECJ ruled that excessive or disproportionate expenditure should not be taken into account in determining the reasonableness of the price. The company in question had a de facto monopoly, and the ECJ suggested that the very lack of competition led to high administrative costs: the company had no incentive to keep costs down (Case 395/87 *Ministere Public v Tournier* ECR 2521, 1989).

The elimination of unjustified expenditure is a method which does not take into account those cost elements which mask the profitability of a dominant undertaking, in the present case of a monopolistic undertaking, where that undertaking becomes inefficient due to a lack of competitive pressure (Wish; Bailey, 2015).

3.4. Other relevant cases

European case law shows that European courts and the Commission have addressed the issue of excessive prices, especially in markets with a deep-rooted dominant position, where the entry and expansion of competitors is not expected to ensure effective competition in the near future.

3.4.1. General Motors case

In 1974, the Commission sanctioned General Motors for charging a high fee, for a period of four months, in regard with the compliance inspections of 5 types of vehicles manufactured in another Member State and imported into Belgium. The fee was considered excessive by the Commission, which established that art. 102 of TFEU had been infringed. In essence, General Motors' fee for inspections was similar in amount to the amount charged for inspecting the conformity of US cars, although the inspection of European cars had lower costs.

According to the Belgian regulatory framework, the inspection of conformity for each vehicle brand is carried out only by the manufacturer or by an exclusive agent. Practically, the state delegated the task of carrying out inspections to private enterprises, but without imposing maximum limits on tariffs for the services provided by them. Because General Motors practically had a legal monopoly and because it had an unrestricted right to set tariffs, the Court agreed with the Commission's position that the company held a dominant position. The Court did not rule out the possibility that an undertaking in such a situation might abuse by applying excessive prices in relation to the economic value of the service provided and which has the effect of reducing parallel imports (*General Motors Continental NV v Commission* Case 26/75, 1975).

However, the Court upheld General Motors' arguments and held that the company did not abuse its dominant market position. General Motors pointed out that the activity in relation to the tariffs incriminated by the Commission was an occasional activity, the company was not used to performing the service for imported vehicles, and the activity was started shortly before the alleged abusive behavior. In addition, the Court took into account the fact that General Motors very quickly brought its rates to the level of the real economic cost of the operation and reimbursed sums to those

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who complained about the unfair price. The Court concluded that the Commission's intervention was unjustified in the temporal and factual circumstances in which it took place (OECD, 2011).

3.4.2. SACEM case

In this case, Societé des Auteurs, Compositeurs et Editeurs de Musique (SACEM) is an authors' association, which has a dominant position in France and is bound by contracts of mutual representation with copyright companies in other regions of the EU. In 1989, the ECJ ruled on the question: does SACEM violate art. 102 of the TFEU if it imposes global royalties on the basis of 8.25% of the gross turnover of a nightclub and if this rate is obviously higher than the rate applied by identical copyright companies in other Member States?

According to the ECJ, art. 102 of the TFEU must be interpreted as meaning that a dominant undertaking imposes unfair conditions when the fees charged for discotheques are considerably higher than those charged in other Member States and where the rates are compared consistently. However, there would be no abuse if the copyright management company concerned could justify such a difference in relation to objective and relevant differences between the management of copyright in the Member State concerned and the management of copyright in the other Member States (*F. Lucazeau v Societé des Auteurs, Compositeurs et Editeurs de Musique* Cases 110/88, 241/88 & 242/88, 1989).

SACEM tried to justify the difference described by the ECJ. The authors' association argued that the difference was due to the high prices of nightclubs in France, the high level of copyright protection in France, the characteristic features of French law and the common methods of collecting royalties used in France. The ECJ was not convinced by the arguments presented and considered that the factors mentioned could not cause a considerable difference between the rates of fees charged in the various Member States. The ECJ has indicated that the prices charged by a monopolist in one Member State will be excessive, as long as they are significantly higher than the prices charged by another monopolist in another Member State (OECD, 2011).

3.4.3. Deutsche Post case

In 1998, the public postal operator of the United Kingdom (UK), The British Post Office, filed a complaint with the Commission which alleged that Deutsche Post had frequently intercepted, surcharged and delayed international mail from the UK arriving in Germany. The dispute between the British Post Office and Deutsche Post resulted from a disagreement over how to identify the sender of international correspondence.

In 2001, the Commission found that Deutsche Post abused its dominant position on the German market for international postal delivery in multiple ways: (i) discrimination, (ii) refusal to supply, (iii) impeding the development of markets and (iv) excessive pricing. Basically, the price charged by Deutsche Post for the delivery service was found to be excessive and unfair (Commission decision COMP/36.915 - *Deutsche Post AG*, 2001).

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In regard with the excessive pricing issue, in the case the Commission established that the price charged exceeded the economic value by at least 25%. The economic value was calculated as the average cost including a reasonable profit margin (OECD, 2011). Specific to this case, the service in question was the delivery of incoming cross-border, compared with the domestic mailing service. Deutsche Post identically priced the two services. As Hou (2011) analyzed, the two services were supposed to share the same delivery channel, and the cost for delivering cross-border mails should have been less than that for domestic mails since in the former activity a postal office could have saved costs in collecting mails. Deutsche Post did not dispute the facts and affirmed that the costs of forwarding cross-border mail might have been approximately 80% of the domestic tariff. Therefore, the Commission found that art. 102 was infringed as Deutsche Post couldn't provide satisfactory explanations regarding the similar pricing of the two services.

4. Recent developments and conclusions

The historical data shows that it is difficult to decide what constitutes an excessive price. Ascertaining what the price might have been in a more competitive market is rarely possible in practice, therefore the seek for other potential yardsticks may arise. However, in regard with the control of monopoly positioned companies' tariffs, a proper solution for highlighting excessive prices would be the comparison made with other monopolists, from similar markets, as well as the elimination of excessive costs. A monopoly undertaking tends to discretionary behave when setting tariffs, which is easy to understand, given that it is not subject of the competitive process. Thus, for various reasons, such as the inertia for tariff increases or the desire to realize over-profits, certain costs included in the internal tariff assessments may be oversized. A direct analysis of the actual costs of a monopolist, carried out by competition authorities, could highlight the lack of justification for certain costs, as well as the imposition of excessive prices.

In the recent years, national competition authorities and the Commission vigorously restarted to analyze cases of potential excessive pricing. In May 2017, the Commission launched an investigation into excessive pricing in the pharmaceutical sector, targeting several Aspen generic oncology products. The investigation covers the entire EU with the exception of Italy, where Aspen undertaking was fined more than €5 million in 2016 for price hikes of between 250% and 1,500%, by the Italian competition authority (Global Competition Review, 2017). In July 2020, the Commission invited comments from all interested parties on commitments offered by Aspen to address the Commission's concerns over excessive pricing. Aspen proposes to reduce its prices in Europe for six critical cancer medicines by 73% on average. Taking into account all comments received, the Commission will then take a final view as to whether the commitments sufficiently address competition concerns. At the moment of this paper the case is still in progress.

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IN THE DEFENSE OF TEACHERS IN TIMES OF CRISES – THOUGHTS, IDEAS, OPINIONS REGARDING TEACHERS

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Abstract: *The noble tradition that viewed the profession of teachers and teaching itself as an important service has lately been declining. Educators used to be considered a valuable human resource in guiding students towards a responsible future. The outbreak of coronavirus disease has been declared a Public Health Emergency of International Concern and the virus has now spread to many countries and territories. What we do know for sure is that it is transmitted through direct contact. Therefore, education premises have changed radically and so has the role of teachers. Measures taken by education institutions throughout the whole world tried to prevent the spread of the COVID-19 and consequently students and staff were lockdown. What is a teacher nowadays? This is the question that will try to find answers in this paper. Teachers assume the role of educators. Thanks to technology, they step backwards and delimit themselves from the role of authority they used to hold and become guides, facilitators, mentors and sometimes even supporters. Is it the time to adopt a different approach to teaching in general and teaching of English as a Foreign Language in particular? What is the role technology can play in education in the current socio-economic context? Does it throw shadows on the part played by teachers?*

Keywords: *online teaching; face-to-face education; teachers; educators.*

JEL Classification: *J60.*

1. Introduction

The Covid-19 pandemic has brought challenges for the higher education community worldwide namely the urgent request for face-to-face university courses to be taught online. A clear fact is that education has turned online for several months and it will continue in this fashion for a while.

It has become a common practice these days to comment on health, government measures, education etc. Everyone is an expert. Mainly regarding education issues. All people can explain why online teaching at all levels -from kindergarten to university- is not a solution, how things can be done better, how teachers should react to the new challenges. Hence the idea of the present paper to depict some similarities and differences between face-to-face and live online lessons trying to underline the role of teachers in the new learning environment. It will also include the results of a questionnaire applied to university students of Economic Sciences, University of Oradea regarding the above-mentioned issues.

Recent technological upheavals have determined a growth in popularity of online learning over the years. Providing online education has become more popular than ever, even before the present pandemic crisis; teachers are faced with a unique new challenge – managing and handling the differences between traditional and digital learning. The most provocative challenge of the online education remains maintaining motivation at reasonable levels so as to keep the students in front of devices. Besides it, the online has piled on to the stresses and workloads of the academic staff who were already struggling to balance teaching, research, and service obligations as Houston, Meyer and Paewai 2006 (in Rapanta, 2020:1). Moreover, there is a lack of pedagogical content knowledge needed for teaching online (Angeli and Valanides 2005).

2. Literature Review

There are countless definitions of online learning in the literature, definitions that are widely used with a variety of meanings and reflect the diversity of practice and associated technologies. For the purposes of this article, online learning is learning rendered by means of the Internet. There is the concept of 'networked learning' that focuses on human-human connections (Banks et al. 2003) but online learning is more than that. On the other hand, 'eLearning' and 'digital education' include a wider range of digital resources, not just the Internet therefore it is more than online learning. Teaching face-to-face and teaching online are both teaching, still very different. Online education starts when faculty move from the traditional classroom to the online classroom. The unexpected and swift turning to online teaching instead of the face-to-face educational work, in response to the Covid-19 pandemic, has made teachers sensitive to these differences. In the online scenario there is a distance between the student and the teacher and both use some form of technology to access the learning materials, whereas there is some kind of support provided to learners as Anderson 2011a (in Rapanta, 2020:5).

According to researchers online education involves a diverse range of tools, resources, pedagogical approaches, roles, organizational arrangements and forms of interaction, monitoring and support—with many possible combinations of substitution and integration according to Bates and Poole (in Rapanta, 2020:20); in the meantime, Anderson rightfully asserts that there is a valuable gain of this type of education that involves 'the capacity for shifting the time and place of the educational interaction' (Anderson 2011b: 344) and that is flexibility.

Teachers are process designers in the online education as they choose materials, resources, environment, strategies, they implement time management that help students to learn (Richey, Klein and Tracey in Rapanta, 2020:7).

In addition to the designer role, instructors are also actors that perform in the play they had designed themselves as Goodyear and Dimitriadis (in Rapanta, 2020:4) .Our goal is to make explicit some main aspects of the online teaching expertise, as perceived by students as recipients of the educational process and aimed at mirroring the role of teachers in the course of the process. We conclude the paper with a discussion in which we reflect on the teachers' role as educators in the present circumstances.

3. Method and Findings

The method used for this study was applying questionnaires to students of University of Oradea, especially studying Economics as they can provide useful insights on the researched topics, opinions which are not so easily or quickly obtained through other means. First, we drew up a questionnaire aimed at collecting essential information about the students: their proficiency, learning preferences, computer access and eventually, identifying the preferred style etc. Students of different specializations (Marketing, Management, Finances, Accounting, and International Business) of our faculty were selected to fill out the questionnaire. They covered all levels of education -1st, 2nd, 3rd, and MA students. There were 150 respondents. They sent their answers online. The questionnaire consisted of 10 questions and were exchanged by e-mail, after the goal of the research was explained to the participants. The questions were as follows:

1. Is the online educational process any different from face-to-face teaching and learning?
2. In what aspects do you think online learning is different from
face-to-face teaching and learning?
3. Do you think online teaching is more successful than face-to-face learning?
4. Do you miss anything while learning online?
5. Do you find online control tests effective?
6. Do you need online sessions with your teachers?
7. Would you rather work alone or on live online sessions with colleagues and teachers?
8. Do you consider online preparation useful?
9. Do you feel motivated when working online? If yes, what motivates you?
10. Do you consider the teachers' support as effective in online?

As shown in Figure 1, the huge majority perceive a difference between the two educational manner, the *yes* answers covering 89%, the *no* answers reaching 0.9%, the rest being probably uninvolved in the survey. The response is logical, expected, obvious. First, online teaching and learning require careful consideration for how technology can facilitate the types of interaction we seek. In point of content, online learning relies more on materials texts, videos, exercises rather than presentations, role-play, discussions that are specific to the traditional way of teaching.

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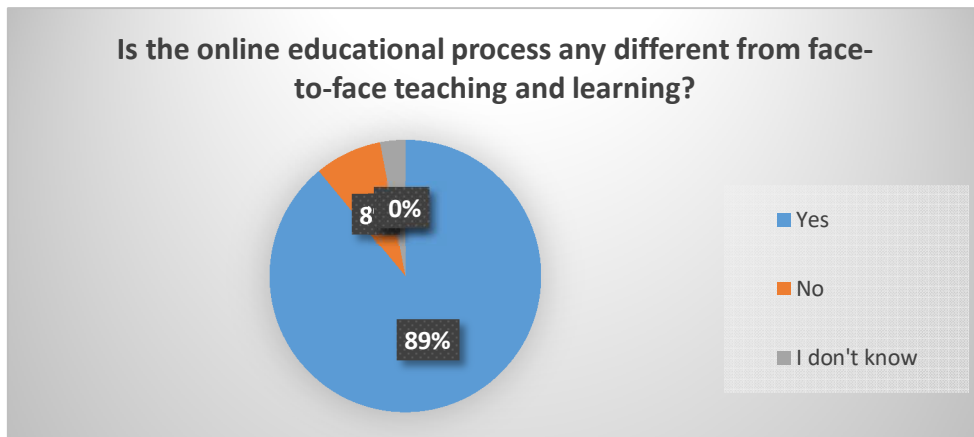
Figure 1
Source: authors' own findings

The second diagram in Figure 2 shows the answers regarding the differences between online and face-to-face education as perceived by students. All students submitted their answers and, as results demonstrate, motivation or rather lack of motivation concern students the most, whereas in point of topics and materials there is a slight difference between the two means of education.
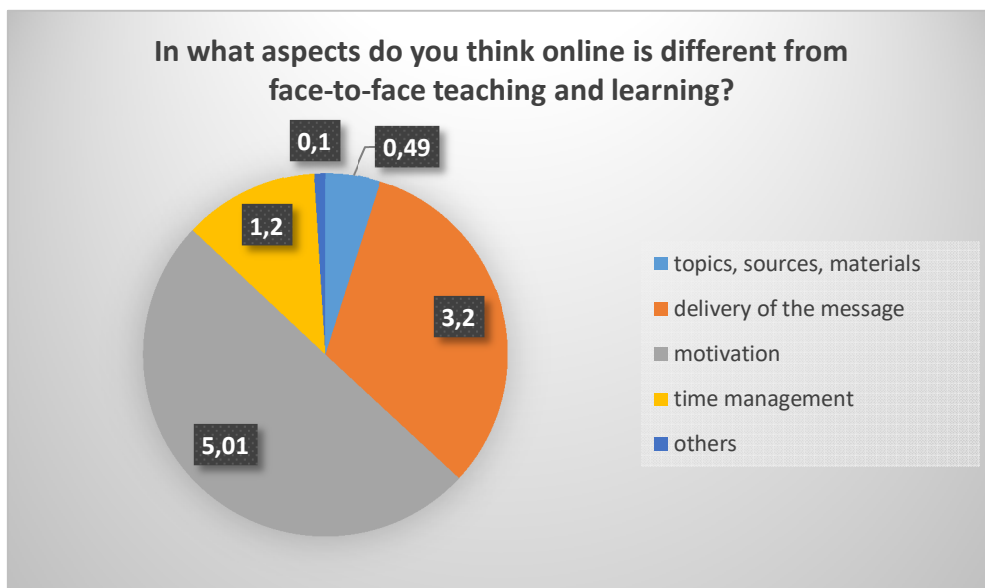
Figure 2
Source: authors' own findings

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The third question *'Do you think online teaching is more successful than face-to-face learning?'* had an unexpected result: 97% of the respondents answered *no*, meaning they would rather follow the traditional way of teaching. Autonomy (avoiding interactions, managing tie and resources) as well as accessibility are the most important aspect of leaning online. The proper guidance tasks centered on students and not on syllabus, social activity and peer collaboration are among the reasons why so many preferred face-to-face education.

Do you miss anything while learning online?

- interaction
- proper feedback
- colleagues
- communication
- physical presence of teachers
- others
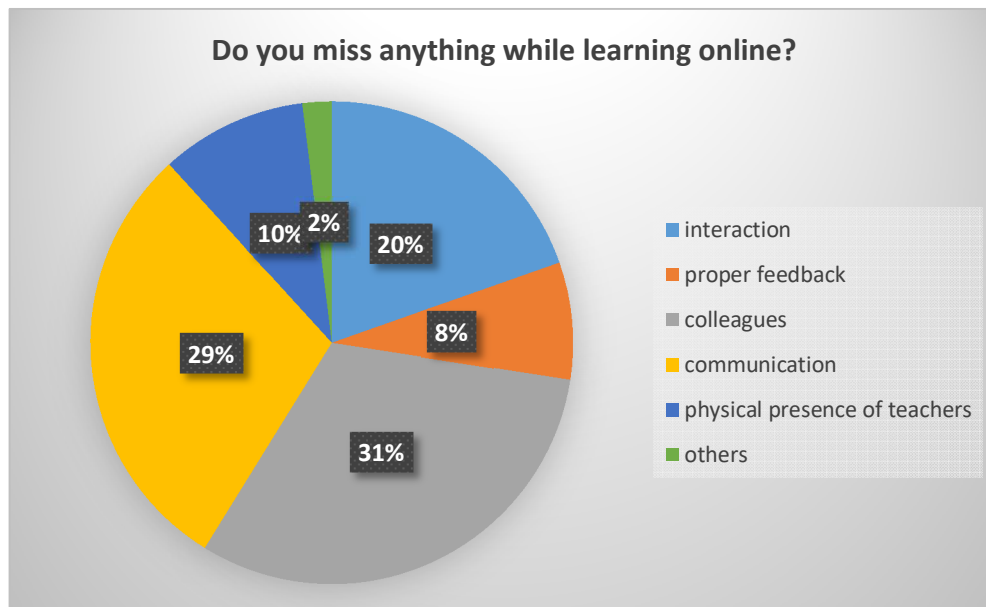
Figure 3
Source: author's own findings

Figure 3 presents students' choices on what they miss while learning online, that is the fourth question of the survey. Not surprisingly at all there is an urging need for human real face-to-face interaction. This answer could also relate to the lack of motivation underlined by the second question of the survey.

The fifth questions *'Do you find online control tests effective?'* received a predictable answer meaning that students were honest admitting they can cheat while sitting for an online test. To their conclusion we could also admit the shortcomings of internet connection, devices that may not work properly at the requested time or platforms that are not calibrated enough for the number of people using it at the same time. Nonetheless, it is important to monitor and assess learner progress. Teachers should conceive chunks of tasks for students to engage in (individually, in groups or teams, etc.) and this will eventually provide and insight on student engagement. Assessment is of utmost importance for both teachers and learners.

When answering with *yes* at the question *'Do you need online sessions with your teachers?'*, students were asked to provide one-two word reasons and here is the

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result: 78% of students considered online sessions useful when they could relate effectively to their teachers (both in writing, but also visually). The words that students used to render the importance of connecting with the teacher were very diverse, still there were several that appeared repeatedly: 'better understanding', 'socializing', 'explanations', 'guide'. As for guidance, online learning literally means mediated communications, teachers should offer clearly expressed indications from teachers. Teachers should encourage more student autonomy, nevertheless, for this purpose online teaching requires more careful design. Consequently, the role of teachers does not cease once everything turned online, there is still a need for facilitating the process, for guiding the learning, even for social connections.

Figure 4 shows the results of the seventh item regarding the way students preferred to work.
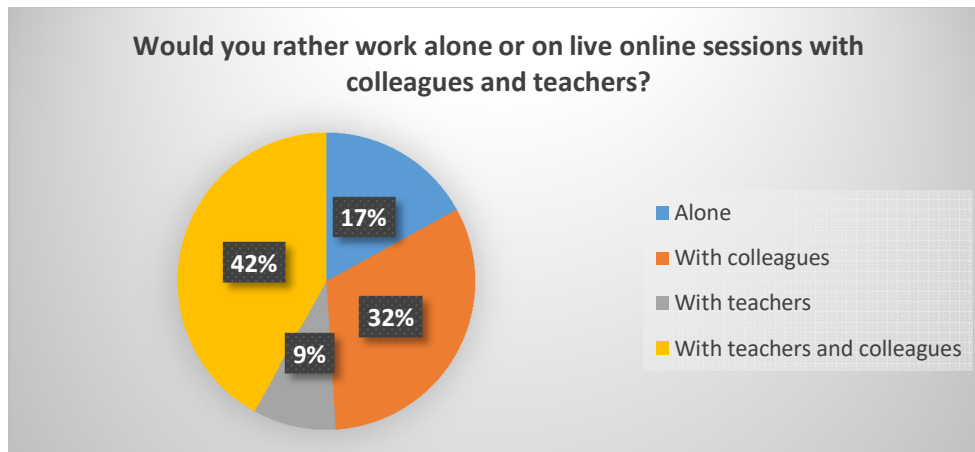
Figure 4
Source: author's own findings

The diagram reveals the preference of working together probably because of so many years of traditional education system. Students need guidance, interaction, anxiety is reduced. Students will have to adapt simultaneously to new ways of teaching and learning and deal with all the logistical complications and emotional stress of the pandemic and its associated lock down. In habitual face-to-face educational system, all participants rely on many supports, cues, prompts, etc. In other words, the physical world provides a variety of resources which are missed once they are gone.

When responding to the item *'Do you feel motivated when working online? If yes, what motivates you?'* students provided affirmative answers in their majority (75% answered *yes*). The interesting aspects reveal the need for feedback in order to be motivated and thus we understand the importance of assessment as already presented above. They mentioned the general recognition of their results, teacher appraisal, good grades, among the most important motivational factors.

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The last question referred again to the teacher's support and its importance for students. Students considered that the presence of the teacher was important as mediators between the content and the learners. And this is probably the key ingredient for a successful online class. This means facilitating, supporting, guiding so that everyone can learn, as each one of us is different in what we know, what motivates us or what we value most. When online, there are numerous materials, but they alone cannot provide the mediation. In many ways we can state that teachers are what they teach; they promote a living model of how what we teach gets real. Materials alone cannot do it. Teachers as life creators.

4. Similarities and differences between the two types of learning: face-to-face and live online courses as they result from the survey

Live online lessons are like traditional face-to-face classes as there is a teacher presenting information and interacting with a group of people in real time. To this end, teachers have to engage students with practical course applications, demonstrations, interesting guests, interactive assignments and group projects, etc. However, beyond these broad similarities, we can say teaching in a conventional learning environment is different from teaching online.

4.1. Class participation
In face-to-face courses students must listen and participate in class, take notes, study, and complete coursework, assignments so as to have success. In the online environment, successful students must add motivation, more discipline, knowledge of time management.

4.2. Teacher as facilitator
In face-to-face courses, students can get information and feedback easier, whenever they attend class, whereas in online courses students depend even more on the facilitation, assignment clarification, and feedback provided by their teacher.

4.3. Communication
Face-to-face courses rely on in-person dialogues and conversations; in online learning, the communication involves more non-verbal correspondence largely in the form of email, instant messages, video and audio messages, discussion forums. Nevertheless we can underline here an advantage of online courses that is students may view, reread and review again and again the messages conveyed as compared to face-to-face courses where they may hear one time what it was said during class.

4.4. Online behaviour is different from the face-to-face one
On one hand, online learning requires digital literacy and the netiquette becomes a must. Even if teaching online does not literally mean teachers need to be proficient at computer programming languages, they still need to be comfortable working within a learning management system and basic computing programs. Building healthy and productive relationships without the face-to-face interaction may happen only following the netiquette This includes several aspects of the Internet, such as email,

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social media, online chat, web forums, website comments, multiplayer gaming, and other types of online communication and the general idea is to respect others online. Among the unofficial rules to be followed are: avoiding posting inflammatory or offensive comments online; respecting others' privacy by not sharing personal information, photos, or videos that another person may not want published online; sticking to the topic when posting in online forums; offering to help when asked; thanking others who help you online.

4.5. The role of teachers
In both types of instruction, the role of the teacher is to teach. Nevertheless, teaching online means an entirely different thing than teaching in a face-to-face class. All the information in the world is at easily accessible. Therefore, teaching online becomes less about teaching information and more about facilitating student efforts to think critically, apply and make sense of new knowledge.

4.6. The design of an online course
The design of an online course is different from the traditional face-to-face approach, as it should be strongly student-centered where the teacher's role is more focused on facilitation and on the student support regarding competences development. Along with the technological advances, students have gained independence and ability to virtually communicate. Consequently, the criteria for selection of teaching methods and strategies should be focused on the student rather than dependent on the teacher's teaching methods and abilities. For this, considerable efforts have been spent

5. Conclusions

Firstly, considering the results of the questionnaire it is beyond any doubt that the attitude towards online learning should encompass a multitude of aspects. The main purpose of online education which has become a must in Romania just overnight, should be efficiency and enjoyable learning facilitated by the technologies available to the teacher, to students. New technologies offer limitless possibilities to improvise and experiment in the field of education. On the one hand, there are many limits imposed by this sudden turn to exclusive online approach on teaching and learning, namely the need for new design for curricula, for adequate teaching evaluation methods, effective pedagogical methods, and they seem nowadays more urgent than before. Therefore, the main investment should be in teachers and their professional development as they need to be updated to the use of online technologies. And we refer to teachers as playing an enormous part in the educational process.
Secondly, we will conclude by pointing out some of the most important roles of teachers thus answering the question stated in the abstract. No, the role of teachers does not fade away.
The teacher remains a guide for students ready to adapt to all needs as after all, different online learners prefer different learning styles and modes.

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The teacher is a facilitator, a very creative and innovative one that come up with effective ideas to facilitate online school students further. The teacher offers different options when it comes to assignments and projects and bringing fresh ideas to the table. There are plenty of multi-media options at the time of demonstrating knowledge.

The teacher is a motivator as online learning more than anything else require highly motivated learners to make it through the process as online learning is hard work.

The teacher should provide constructive feedback, pointing out the weak areas while educating the student to become better.

The teacher is also a model that supports the students, comforts them and develop their levels of confidence.

The teacher is a learner as well as the online teaching techniques develop constantly so there is a permanent need for training and updating. The teacher needs to remain a lifelong learner.

The teacher is a communicator that needs to remain effective. Teacher-to-student and student-to-student communication play a vital role in an online learning environment. Online students are taught that communication is the key to student success and the teacher should maintain student engagement in the learning process at all costs.

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DEVELOPMENT AND PROSPECTS OF AGRICULTURAL COOPERATION IN THE REPUBLIC OF KAZAKHSTAN

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Abstract: *Diversification of economy in Kazakhstan includes several prosperous directions, but main attention is paid on agro industrial sector. High productivity of foreign countries due to successful realization of farmers' cooperation makes it key element of current state policy of development. However, despite the support provided and activities taken the cooperation implementation is still low. The aim of this research was to analyze the reasons of it and make suggestions for situation improvement. To analyze current position of cooperatives in Kazakhstan, the main international agricultural cooperation models were examined and their history together with historical background of agricultural cooperatives in Kazakhstan. Based on the data it can be concluded that various economic doctrines were the base of each model. Authors explored three different models existed in agricultural cooperatives history: Western (market economy), Soviet (government-planned economy) and Israeli (social commune). Interviews were conducted with experts in agricultural sector and food marketing in order to investigate, which factors restrain cooperation's integration. After studying updated version of law on agricultural cooperatives and conducting interviews authors constructed SWOT-analysis, which defined the main weakness of state's cooperatives. The unawareness of farmers about benefits of cooperation was chosen as a problem to be solved. On the base of it authors created problem-tree and further elaborated solution-tree. Authors recommend prolonging and intensifying government support, and involving private business in agricultural cooperatives development. The support should be multilevel; upper-level includes subsidies payments and legislation modifications; local bodies should help strategical planning elaboration and organization of production sales.*

Keywords: *agricultural cooperation; Kazakhstan; SWOT-analysis; problem-tree.*

JEL Classification: *Q12; Q13.*

1. Introduction

Agriculture always took the important role in life of people lived on the place of modern Kazakhstan, because of the vast territory and climatic conditions they practiced nomadic way of life. Kazakhstan has several climatic geographical zones that are suitable for different types of animal and crop farming. *Figure 1.* shows geographical distribution of state's regions with its specialization in agricultural sector. There are 10 natural areas, including 6 plain and 4 mountain lands. Main

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directions include 12 different types of animal and crop farming: grain-growing, meat-and-dairy cattle farming, sheep breeding, horse breeding, droving horse breeding, pig breeding, camel breeding, cropping, mellow-growing, rice growing, cotton farming, apples growing. As seen from the map Kazakhstan has really wide range of climatic and landscape conditions and consequently agricultural goods to produce. Thus, it is obvious that government and private entrepreneurs became more interested in this sector of economy; and collaborate in projects of it development.

In existing strategy of economy's diversification, main emphasis is made on agricultural sector development. "Government Program of Agro-industrial complex development for the Republic of Kazakhstan for 2017 – 2021" that came into force in the beginning of 2017 sets following tasks for the sector:

1) involvement of small and medium-sized farms in agricultural cooperation;
2) saturation of the domestic market and development of the export potential of domestic products;
3) effective use of state financial support;
4) effective use of water resources;
5) creation of conditions for effective use of land resources;
6) increase of provision of agricultural producers with machinery and chemicals;
7) development of trade and logistics infrastructure;
8) scientific and technological, personnel and information-marketing support of the agro-industrial complex (Ministry of Agriculture of the RK, 2018).

The development of production, sales, processing of agricultural products, material and technical supply, credit, service and information and marketing services systems for agricultural producers is the most important direction for today in the Republic of Kazakhstan.

2. Methodology

For deeper understanding of current condition of agriculture in Kazakhstan and particularly cooperation's implementation several interview had been made with various experts. The first interview gave specialist of food marketing with domestic and international experience in food processing during 3 decades. She gave insights to weaknesses of processing and marketing, especially in supply chain management. Moreover, she talked about difficulties faced by growers and producers while reaching consumers. The second interview was with a farmer, who has relatively small agricultural experience, however his total experience in business is about 10 year. He has apple orchards business in Almaty region and is interested in entering into cooperative. He shared his opinion why cooperation has low implementation, and what challenges farmers face with working by their own. Third expert has several decades of various agricultural experience, studied soviet and foreign programs of cooperation. He shared his vision of what problems can be solved by adjustments in government management; which steps can farmers take, and described Chinese strategies and organization structure of agricultural cooperatives.

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Farmer's questionnaire has been made on the base of foreign experience and adjusted to current market situation and research needs. The aim was to define what cooperation aspects are more important for farmer, while he decide to become a member. Questions and description were prepared in Russian and Kazakh languages, so more farmers can answer. All questions were divided into 3 sections: general questions about their agribusiness; attitude towards particular aspects while joining cooperative; and common demographic questions for statistical grouping purpose.

First section was constructed as the introduction and had questions about farmer's business activity, land and labor used. Land used can be either own or rented for agriculture purpose for a long-term period up to 49 years with the opportunity of further purchase, however it is important to notice that in case of usage for purposes other than intended government will terminate the agreement. Currently in the Republic Kazakhstan moratorium on selling state-owned land suitable for agricultural purposes is acting, it is also prohibited to rent state-owned agricultural land to foreign citizens or legal entities (Kapital. Centr delovoy informacii, 2018). Agricultural businesses typically use seasonal workers and family farming is a common practice, due to this author asked respondents to distinguish them in total amount.

Second section was the main part of questionnaire, since there author asked about attitude towards particular cooperative features. In working process attention should be paid not only on such factors as maximum guaranteed price and receiving payments on time, but also on relations among members and opportunity for external investments. For small producers cooperatives provide facilities that they cannot afford by themselves such as dispatch and storage or agricultural equipment. Cooperatives are popular because this business form not monetary profit oriented, but provides social benefits as well. Members receive additional knowledge by exchange with each, having trainings with guest lecturers and enlarging its network. The last question in this section was about willingness to study some of listed subjects: cooperation basics, agro engineering, phytosanitary, veterinarian safety, food safety standards, business disciplines (management, accounting, planning), or write their own.

The last section had demographics questions: gender, age, education level, employment status, and type of business form, for grouping and creating respondents portfolio.

3. Results

The second part of questionnaire was about the respondents attitude towards specific issues in cooperation. This section contained 15-item scale that measured the importance of these aspects in cooperative entering process (1 = absolutely not important, 7 = very important). In descending order the importance to farmers of various business, and mostly marketing, factors for partnership with the cooperative. The most important factors are Purchase price by cooperative, Payment speed with an average 6.19 and Trust to cooperative (6). The less important were Quantity of production given (4.74), Absence of alternative (4.81) and Production storage (4.90).

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These results show that entrepreneurs are on the beginning stage, and high price and quick payments have most of influence. Due to the existing unclearness and relative novelty of this form farmers feel the need of trust. External and internal investments take next place in respondents' significance scale, because they understand that it is much easier and more efficient to apply for subsidies and grants as cooperative, not as a single entrepreneur.

Quantity of production given is considered as the least important factor, because farmers will not lose a lot if they will realize the rest of the products by other channels. This is explained with current low dependency from cooperative and not full realization of benefits provided.

To sum up, results of questionnaire gave deeper insight what is an attitude of agricultural workers to the cooperation, and specific aspects of it. Besides, it was possible to examine factors' importance in different splits, in order to clarify how background effects on respondent's choice. Currently due to developing stage of agriculture in state and lack of trust, for farmers purchase price and payment speed have more significance than other features of cooperation. However, one of cooperation's characteristics was interesting to all respondents. All of them feel the need to receive additional knowledge on agricultural and business disciplines. Consequently, while forming new cooperative or in order to improve existing one management need to take into account these results. Cooperatives must assure profitability and liquidity to its members, and give them opportunity to receive and share professional knowledge and experience.

3.1 Strengths + Opportunities strategies

Unification of resources for receiving international bioorganic certification: cooperative members can direct necessary funds for certification process of selected product groups, and after receiving confirmation, sell organic food on a higher price. Attraction of professionals from other sectors to farming business: as more people will see positive results from cooperation, the more will be interest to agriculture and qualified specialists from other sectors can switch their activity, and receive needed help from members on the first stages.

Table 1. SWOT-matrix strategies

	Strengths	**Weaknesses**
	1. High-tech largescale production 2. Joint and stable realization 3. Juridical and economic independence 4. Equal membership 5. Risk's share minimization 6. Growth of common funds available 7. Expenses decrease	1. Lack of own funds 2. Absence of joint activity experience 3. Shortage of processing enterprises 4. Failure to sell on B2C market 5. Logistics and infrastructure 6. Low education level 7. Legal framework imperfection

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	8. Gratuitous knowledge	8. Lack of qualified personnel
Opportunities 1. Government support 2. State agro sector growth 3. Export to neighboring countries 4. Bio and organic food production 5. Full-cycle manufacturing 6. New members 7. Foreign experience usage	**SO strategies** 1. Unification of resources for receiving international bio-organic certification 2. Attraction of professionals from other sectors to farming business	**WO strategies** 1. Launch of full-cycle processing enterprises 2. International law base 3. Hiring of foreign experts
Threats 1. "False cooperatives" 2. Relations worsening 3. Political risks 4. Macroeconomic risks 5. Environmental and climate fluctuations 6. Illnesses of plants and livestock	**ST strategies** 1. Self-financing of all cooperative activities (in case of support suspension) 2. Launch of own R&D centers to prevent biological risks and improve existing base	**WT strategies** 1. More links among members (not only business, but social & education activities)

Source: own research based on literature review and interviews with experts

Weaknesses + Opportunities strategies
Launch of full-cycle processing enterprises will develop life in rural areas. Farmers will have stable places where they will realize their goods and consequently income. Young generation will not strive to leave villages, and after receiving education will work in their home regions, this will is a solution to de-urbanization. With region development, government and private entrepreneurs start modernization of infrastructure, including building of kindergartens, schools, hospitals, places of leisure and entertainment, etc.
International law base: foreign experience can be used not only in business aspects, but also in improvement of legal base.
Hiring of foreign experts: lack of domestic qualified personnel creates the necessity of expats attraction, but they can train local farmers.

Strengths + Threats strategies
Self-financing of all cooperative activities: management aim must be in self-financing of all projects, therefore in case of government support suspension, members should

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use accumulated income and own funds. However, it is hard for the beginners, due to lack of resources.

Large cooperatives can launch their own laboratories to investigate plants and animal husbandry in order to prevent biological risks and improve existing base, due to scale it can be cheaper than giving it outsource.

Weaknesses + Threats strategies

With the development of cooperative movement in rural area, more links will appear among population, between not only business partners, but also their family members. Other parts of social interactions will lead to deeper links and interdependency. People will stay in villages, build schools, hospitals, create infrastructure. Evolution of social responsibility and education level will create sound and prosperous nation.

3.2 Problem definition and solution development

From SWOT analysis, we found out that the main problems for development are lack of farmers' own funds and absence of joint activity experience. These problems are led by several causes, which formed during several generations, and it is hard to solve them in the frameworks of this work. However, author assume that change of farmers' perception will have significant effect. First, we need to solve issue of the unawareness about benefits provided by cooperation. Defining this problem as the key one, we can analyze causes and effects of it, and further suggest a solution.

As seen in from the *Figure 1.* unawareness about cooperatives and absence of its development can lead to three problems such as small output, suspension of government support, and absence of international grants, which subsequently cause loss for the farmers and fall of state agricultural development. Attraction of international grants is important for development other sectors of economy as well. Agriculture can be the second driver and more sustainable than mineral resources. Key reason for unawareness about cooperatives is shortage of knowledge, which is driven by negative perception and education's low level. Besides, the explanatory work with farmers is insufficient. Questionnaire results supported this hypothesis, as most of respondents wanted to study the basics of cooperation. Negative perception was formed by historical experience and individualistic state of mind, which is a result of joint-work experience absence. The underlying causes are waiting for government support and decisions, and the unwillingness to make business with unknown people, to whom they do not trust. It is easier and safer to deal with family members or close relatives, despite the lost opportunity for growth and improvement. First unsuccessful attempts of cooperation's introduction add more doubts to those farmers who are considering joining to the movement.
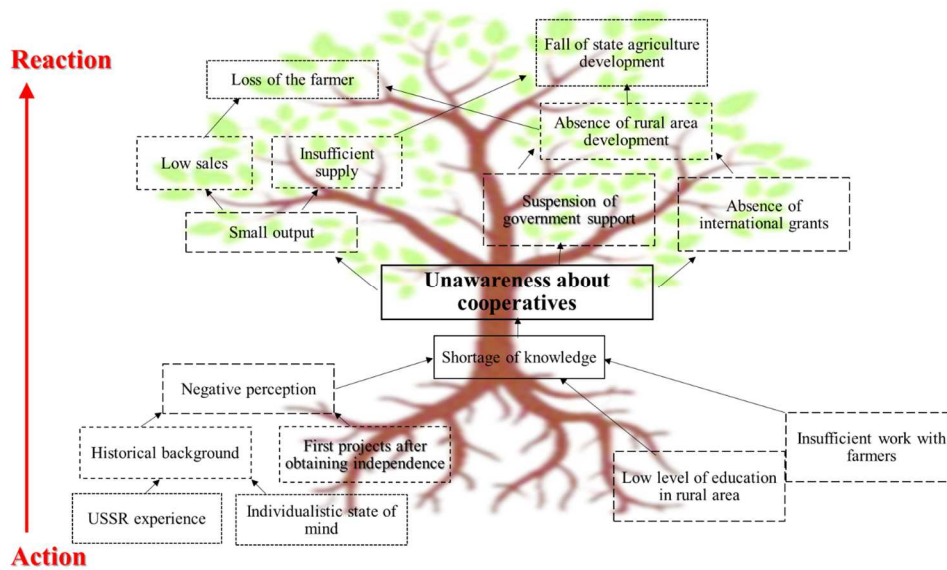
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Figure 1. Problem tree of the agricultural cooperation in Kazakhstan

After defining the problem, we can elaborate solution. The *Figure 2* shows how educational work in several directions can increase the awareness, and what positive effect it can have further. The work must be done in two directions:
1) changing existing negative or doubtful perception;
2) uprising the new generation of farmers.

Firstly, government should prepare additional explanatory materials for farmers, to clarify all aspects of cooperation. In addition, local authorities should elaborate strategic plans for various types of business activity, so rural population will decide by themselves, which sector to choose. In addition, those farmers, who have already understood benefits of cooperation, can share their experience in mass and social media; make educational seminars and exhibitions, demonstrating growth of economic and social income. Besides, government and public should change the perception of large processors and producers, so they will start purchasing from cooperatives and therefore support its development.

Secondly, together with government large cooperatives union ought to correct education program in secondary schools of rural areas and of future agricultural specialists, so they will know economics and business basics and can understand best opportunities for farming activities. Scientific workers need to include more information about international experience, both successful and not, so young generation will feel the difference and learn from others mistakes. In addition, showing the supplementary benefits for the whole population, will teach them to think wider.

If farmers know about cooperation benefits and see positive results of others, willingness to join will increase, as well as further awareness. If farmers know and

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rely in cooperative form of business, more entrepreneurs will be interested in it and enter existing or create their own. With the development of movement, population receives rural area infrastructure development together with population's increased standards of living. This will ensure two government aims: agricultural sector development and growth of population welfare.
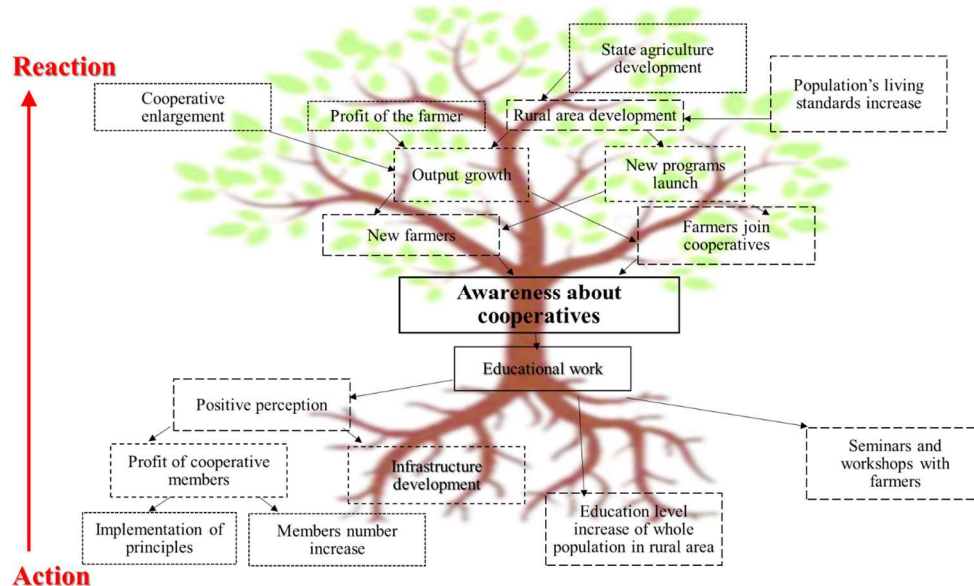
Figure 2. Solution tree of the agricultural cooperation in Kazakhstan

4. In conclusion

The agricultural sector of Kazakhstan has vast opportunities for development, and cooperation of the farmers is prosperous tool for it. Several obstacles slow down the farmers' integration to the movement, however actions in several directions can make a valuable positive contribution. Moreover, from the research results, we can see that entrepreneurs are interested in cooperation, but they have doubts, so the first aim is to dispel them. Due to high sector dependency from Governmental support, the main actions are required from Ministry of Agriculture its subsidiaries and state representatives of business.

Thanks to state support and the measures proposed by NCE RK "Atameken", it is possible to realize the enormous potential of the cooperative movement and increase the production of domestic food all over the state. A promising direction for the development of agricultural producers will be their involvement in work with wholesale and retail centers, as well as their integration with processing enterprises. Large cooperatives can be a good and stable entity to attract investments for construction of processing enterprises. To do this, it is necessary to create an infrastructure that will ensure the procurement, transportation, storage, marketing

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and processing of agricultural products, therefore domestic food production will reach western model of vertical integrity and full-cycle supply chain management.

In accordance with the research objectives, author achieved the following results:

- Several reasons prevent successful implementation of the agricultural cooperation in Kazakhstan; among them, unawareness of farmers and lack of own funds play the key role. Negative perception about cooperative households and rural population's lack of accumulated funds due to soviet-times experience and insufficient knowledge about benefits of modern cooperation style are the reasons of current situation.

- In order to stimulate farmers' engagement in cooperation both government institutions and private entrepreneurs have to be active. Government need to intensify explanatory work with the rural population about the benefits of cooperation and help them with a strategical planning of the region's activity. Local authorities should elaborate the target for each region, taking into account diversification of output, import-substitution, and if possible development of niche markets. In addition, authorities should set exact progressing goals, so farmers will use granted resources with maximum utility, increase productivity and improve quality of final goods. Successful cooperatives will receive more benefits, enlarge amount of members, produce more, and consequently, earn more. Those who are not productive should leave the market, or change its activity to profitable one. Entrepreneurs should share their experience in order to motivate others; enlarge their production adding processing and marketing units, engaging more population.

- In order to make this form attractive for farmers, managers ought to meet their expectations. The questionnaire's results show that entrepreneurs are on the beginning stage, and high price and quick payments are the most significant factors, because they need to receive as much money as quickly as possible. Due to the existing unclearness and relative novelty of this form farmers feel the need of trust. Investments both from attracted funds and from retained earnings take next place in respondents' significance scale.

  In addition, authors suggests that cooperation is a good solution for young generation's involvement into a farming business. Current trend of fast career change due to unrealized potential and disillusionment is an issue of both employers and employees. Agricultural sector used to be considered as conservative and traditional, and therefore not so interesting for the youth. However, modern science condition requires being up-to-date always, and considerable researches are conducted to improve productivity and quality of agricultural output. Cooperatives provides enormous opportunities for self-development and constant challenges. After reaching the certain target young farmer can evolve in several directions, it could be either production enlargement – adding new species, or vertical integration – launch of processing and / or marketing activities such as storage construction, logistics enhancement, etc. Moreover, cooperation is a business form that is aimed to serve not only for owners' monetary profit, but to ensure social welfare. For youth who were upraised with the stronger ideas of humanism and desire of making contribution to society it is an advantage.

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INNOVATION AS A DEVELOPMENT FACTOR OF THE GLOBAL ECONOMY ENTREPRENEURSHIP

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Abstract: *In the entrepreneurial environment of the 21st century, changes are taking place constantly. Business performance benchmarks are changing and competition is more pronounced. The current economic conditions and fierce competition that prevail today, are forcing companies to look for new ways to reduce costs and increase profitability. If a company expects to survive and grow, it needs constant creativity to differentiate, add value, and create a competitive edge. Therefore, to thrive and excel, business organizations need continuous innovation, rapid response, and creative human talent. This paper presents an essential aspect of entrepreneurship in the 21st century, the importance of innovation and creativity, and the role they play in the global entrepreneurial context. Introduces the entrepreneurial environment and discusses the evolution of entrepreneurship as a science from the earliest period until the present. Using a methodology based on a critical research method, the results briefly describes the importance of innovation and creativity in today's global entrepreneurship, the importance of knowing the difference between creativity and innovation, and the advantages it has over entrepreneurship all over the globe. The aim of the article is to emphasize the connection between creativity and innovation, as well as the strategy to encourage creativity and innovations among entrepreneurs in today's competitive business environment, as long as creativity generates new ideas and innovation materializes them. The globalization topic summarizes the evaluation of entrepreneurial opportunities and explains the objectives involved in global entrepreneurship.*

Keywords: *entrepreneurship; innovation; creativity; progress; globalization.*

JEL Classification: *A10; B10; L26; O31.*

1. Introduction

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In the new global economy of the 21st century, increased importance and complex challenges have been brought by the role and functions of entrepreneurship. Globalization, innovation, trade liberalization, information, and communication technology are at the core of the 4.0 Industrial Revolution, performing the main features of the 21st-century economy, and creating a proactive approach regarding the global development of the entrepreneurship ecosystem (Mason and Brown, 2014). In fact, the presence of entrepreneurs and entrepreneurship is necessary to encourage and introduce change in society through the innovation process. In these

circumstances, we could affirm that today we are globally united by the economy, not by politics or governments.

Entrepreneurship is an attendant pattern of involving individuals in community life. The development of entrepreneurial skills has positive effects on social status in the sense of gaining financial independence and social recognition. In addition, the effects are felt at the local and national levels, through economic growth and implicitly the increase of the living standard.

The motivation for the research evoked with the understanding that we are part of an economic system and our role is to develop and support it. The more we know about this role, the better we will prepare for a career or way of acting in society, through a balanced control of finances and assets. What we learn today, we will apply tomorrow, the result being a higher degree of welfare.

2. The conceptual framework of entrepreneurial science evolution

The entrepreneurship ecosystem is constantly evolving. With the advancement of science and technology, it has passed the stage of metamorphosis and has become a critical element for global economic and social development.

Entrepreneurship, in a narrow sense, refers to the act of creating a business in order to generate profit, but the field of economics gives us a broader meaning for this term. From this perspective, an entrepreneur is defined by the ability to find and act according to opportunities to turn inventions, technology, or situations into new products and commercially viable innovations.

In the early 19th century, the French economist Jean-Baptiste Say also formulated a straightforward definition of entrepreneurship, saying that it "gives economic resources greater productivity and efficiency (Ghicajanu, 2015). Taking a step further in the field of entrepreneurial mentality, we find that entrepreneurship can also be understood as a special type of thinking that allows innovation or even the reform of a particular field, market, or industry.

According to the Austrian economist Joseph Schumpeter, an entrepreneur is a person who is willing and able to turn a new idea or invention into a successful innovation (Reisman, 2004). Thus, entrepreneurship beyond the economy and beyond business is an attitude, the entrepreneur owns a set of characteristics that are not necessarily transformed into capital.

Like any other field, entrepreneurial science is based on certain theories. Originally, these theories started from simple ideas, transformed into hypotheses and proved to be true through research, and experiments. In the same way, different theories have been proposed in entrepreneurship in order to explain the factors underlying entrepreneurship and entrepreneurs.

In order to provide a more comprehensive understanding of the evolution of entrepreneurship, the table below includes a part of the economists which through their ideas, have had an influence on the development of this field.

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Table 1: Table of entrepreneurial theories

Economist	Definition of theory	Entrepreneurial characteristics
Richard Cantillon (1680 – 1734)	The contractor is the agent who buys the means of production to combine them into a new product.	The entrepreneur is a good production agent.
Jean Baptise Say (1767 – 1832)	The entrepreneur brings people together to build a productive element.	The entrepreneur is a leader.
Frank Knight (1885 – 1972)	The entrepreneur is convinced of a chance to make a profit.	The entrepreneur is the one who has the security of success.
Alfred Marshall (1842 – 1924)	The entrepreneur is an innate leader who has the ability to anticipate change and act in risky situations.	The entrepreneur is an innate leader.
Max Weber (1864 – 1920)	The entrepreneur is a role player in accordance with the expectations of the society based on the religious beliefs, taboos and customs of the society he belongs to, the result being capitalism.	The entrepreneur is a capitalist.
Mark Casson (born 1945)	Entrepreneurship is driven by the demand for change, resulting from favorable economic conditions.	The entrepreneur is flexible.
Joseph Schumpeter (1883- 1950)	The profile of the entrepreneur is guided by three major features: Innovation, vision and creativity.	The entrepreneur is a trendsetter.
Israel Kirtzner (born 1930)	The entrepreneur is distinguished by the fact that a lively innovator.	The entrepreneur is a lively innovator.
Harvey Leibenstein (1922 – 1994)	The entrepreneur is the innovator who ensures the connection of various markets and combines elements in new innovations to meet the unmet market demand.	The entrepreneur is an innovator.
David McClelland (1917 – 1998)	Entrepreneurs have three reasons to achieve things: the need to achieve, the need for affiliation and the need for power.	The entrepreneur is motivated.
Peter Drucker (1909 – 2005)	Innovation, resources and entrepreneurial behavior are the basis of entrepreneurship.	The entrepreneur is disciplined.

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Economist	Definition of theory	Entrepreneurial characteristics
Michael Kremer (born 1964)	Production tasks are proactively performed together so that any of them have a high value. The characteristic of this theory is the positive assortment match.	The entrepreneur is complementary.

Source: Own processing

Almost 240 years have passed from Richard Cantillon's theory in 1755 to Michael Kremer's theory in 1993. During this time, many theories and definitions have emerged regarding entrepreneurship and how it influences economic growth and development. However, at the present time, we do not have an unanimously accepted definition of entrepreneurship because the diversity of features and directions that economics are analyzing cannot be included in a common theory or vision.

Economists have different views regarding the driving force of entrepreneurs or the peculiarities that are at the core of entrepreneurship. The analysis of entrepreneurial theories and the identification of common characteristics reveal the fact that there is a common entrepreneurial way of thinking and the differences proposed by theorists do not directly or relevantly influence the development of entrepreneurship, which is a central factor of economic activity.

3. The importance of creativity and innovation in entrepreneurial development

In the contemporary entrepreneurial environment, changes are at a fast pace. The benchmarks of entrepreneurial performance are constantly wavering, forcing the competition to be more intense. Prevalent economic conditions and fierce competition are currently prevailing, forcing companies to look for new ways to reduce costs and increase profitability. If a company expects to survive and grow, it constantly needs creativity to differentiate, add value, and create a competitive advantage. Therefore, in order to thrive and excel, business organizations need continuous innovation, rapid response, and talented human capital. In this ecosystem, employees need to manage their tasks in various ways through a process of innovation and change as long as creativity generates new ideas, and innovation materializes them.

Because of the amount of data regarding the impact of creativity on entrepreneurial activity, there are some myths about this concept. There is a belief that it is an innate talent, but in reality, anyone can learn and practice the thinking talent of creativity (Howe et al., 1998). Some people may be better than others because creativity consists of generating many ideas, and the fact that we are divided into rational and irrational beings is also reflected in the creative thinking we possess, or rather that we process. Innovation is often used as a term to explain progress and adaptation to particular transmuted conditions, but unfortunately, this process is not successfully implemented in organizations.

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By inducing the creative state, the creative capacity of the entrepreneur is optimized to solve business problems. This mechanism involves much more than a mainstream brainstorming session with the employees. Creative human capital is intrinsically motivated (Sonenshein, 2013). It means that they perceive an inherent value in what they do - as opposed to extrinsic motivation, which causes them to engage in an activity that meets subsequent goals. Some extrinsic motivations are useful, but there prevails a significant positive correlation between creativity and intrinsic motivation: the admonishing process of creativity leads to an increased level of motivation.

The highly competitive nature of nowadays business environment demands creative and innovative ideas in order to achieve dominant success. Although the provision of quality services is the essence of a successful business, resourcefulness ideas are advancing, so a company has no chance to gain this competitive game in the absence of creativity and innovation. Scientific analysis and mathematical skills cannot come down to a model in order to define problems and to look for alternative solutions, because in the business environment, cost-benefit analyzes cannot pinpoint alternative solutions, having exclusively the role of tools meant to understand the nature of a problem (Selart, 2010). Regarding this statement, we can understand that creative and imaginative thinking, when applied along with the internal knowledge of a problem, can produce prosperously alternative solutions.

The path from ideas to results-based implementation is a difficult mode of operation. In an ingenious transition, the innovator becomes an entrepreneur. There are a lot of organizations that do not assume the risk of attempting new actions because of the fear of failure.

Innovation occurs when there is a willingness to try new things through a developed habit of exploring new possibilities or prospects. Creating a climate of acceptance for each new possibility is very difficult, which is why the global economy is in need of entrepreneurs with an innovative spirit whose role should be to develop the capacity for innovation. Many companies work on the basis of osmosis and if a new idea has been taken up by the competition, then it becomes a natural and low-risk proposal to adopt this innovation (Fawkes et al., 2016). Therefore, it is vital that employees should be sensitive to what is happening subsequently in the same field because this scanning of opportunities facilitates the process of gaining a competitive advantage.

In a healthy entrepreneurial environment, innovation and creativity are embedded in the core values, and ideas for improvement are constantly increasing. Such a culture can be created through a dynamic and proactive approach in which the entrepreneur is an agent of change.

Initially, innovation management was created to ensure an efficient research and development management system, but it has expanded beyond this area due to its importance in various fields of activity (Ionescu and Dumitru, 2015). Generally, the main objective of innovation management is to take over both the contribution and the outcome of innovative ideas. An organization should always provide new products and services to meet customer needs, increase demand, and attain a profit. Similar to the concept of value innovation, Peter Drucker (1909 - 2005) asserted that "most innovations, especially successful ones, result from a conscious and

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deliberate search for innovation opportunities (Hoyos and Braun, 2010)." In other words, the effective search for Drucker argues that management must intentionally explore all of these sources of new opportunities and that the practice and discipline of innovation can be to some extend systematic, guided by perseverance and focused exploration.

Transforming these practices into a culture, the development of the global entrepreneurial environment can be supported through creativity and continuous innovation. In entrepreneurship, there is a desideratum for human capital with the ability to create the right environment to stimulate creativity and innovation and to contribute to economic growth. Entrepreneurs need to identify and capitalize on the human creative potential in order to bring added value and create new revenue streams, and at the same time, employes urgency to keep in mind that the innovation and creativity they possess are important for business development and wealth creation.

Joseph Schumpeter's (1883-1950) innovation thesis on entrepreneurship describes the profile of the entrepreneur according to three major characteristics: vision, innovation, and creativity (Mehmood and Alzorubi, 2019). According to this theory, the entrepreneurial framework is formed when the entrepreneur performs a series of actions: creates a new product, introduces a new way of manufacturing a product, discovers a new market for a product, finds a new source of raw materials, and finding a new way of doing things or organizing them.

However, Schumpeter's theory of innovation ignores the entrepreneur's ability to take risks and using the appliance of organizational skills but places undue importance on innovation. This theory spread in large enterprises, but economic conditions force small entrepreneurs to imitate rather than innovate.

Other economists have added a dimension of imitation and adaptation to the process of innovation. This strategy involves a successful imitation by adapting a product to a niche in a better way than innovating the original product.

Schumpeter pleads that entrepreneurs are the basis of economic progress. Adam Smith focused on profit from capital gains, Karl Marx from labor exploitation, and Schumpeter suggest that profit comes from innovation - not from capital or labor. In the long run, he saw the entrepreneur as a new class of people who innovate, create new products and forms of production under uncertain conditions.

The entrepreneur's creative response to economic change differentiates him out from the owners of existing companies who implemented a small amount of innovative strategies answers adapted to the minor economic changes. For Schumpeter, innovation creates new markets much more efficiently than Adam Smith's "invisible hand" or free-market competition. Innovation destroys the old and creates the new, creative destruction being the main feature of entrepreneurship.

4. Entrepreneurship in the context of globalization

Globalization has removed national borders, free trade has improved economic integration, and information and communication revolutions have led to an international mentality. The role and functions of entrepreneurship in the new global economy of the 21st century have brought increasing importance and complex

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challenges. The private sector has become the most important driver of economic growth, and the public sector has shrunk in importance and influence. In this context, entrepreneurship has a key role to play in promoting national well-being by defining new rules for involvement in the economic landscape, as it faces contemporary challenges and new opportunities. Globalization, innovation, trade liberalization, the information and communication technology revolution are the main peculiarities of the 21st-century economy, creating a proactive approach to the development of global entrepreneurship.

The globalization of the economy began with the gains brought by the Industrial Revolution, associated mainly with economies of scale. Economies of scale accumulate when the manufacturing cost of a production unit decreases as the output rate increases before the level of profitability decreases. Economies of scale are a result of the internal structure of each business venture (Pienaar, 2013). Mass production of durables consuming goods using the assembly line production method is a proper example of gains from scale economies. For example, the automobile industry has benefited from economies of scale by using cost-saving machines and skilled labor, along with increasing production targets.

The perpetual economic development that comes down with the new global economy, has amplified the interdependence of nations and improved the links between production and marketing. At the core of this transformation is the nascency of the global entrepreneur, with the ability to adopt a global mentality in the pursuit of entrepreneurial initiatives. In view of the global strategy, the contemporary entrepreneur must expand his mentality in order to incorporate multidimensional relationships and complex social, cultural, economic, and political realities.

5. Global entrepreneurship objectives. A global perspective

Globalization has removed national borders and made geographical location irrelevant, a context in which the ability to acquire a global perspective is one of the main goals of entrepreneurship, the global vision offering the advantage of facilitating the integration of the global economic opportunities. The local, regional, or national business environment is significantly different from the international business system. For example, a national brand requires a scaling from the national image to a global image, situation that feel necessity for adoption of the same quality standards worldwide in a consistent manner, but at the same time incorporates the flexibility to adapt the packaging or image of the product to the customs and traditions of the local market, which raises issues of entrepreneurial culture of the particular states.

5.1. Adaptation to cultural diversity
Secondly, global entrepreneurship should be endowed with the capacity to meet the challenges and take advantage of the opportunities associated with human diversity. This process requires a progressive multicultural approach to the workforce of each and every customer. Contemporary entrepreneurship must develop a knowledge and appreciation of cultural, social, and economic differences that influence how people perceive and interact in their environment and in their relationship with

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community development (Spigel, 2015). Competence in managing diversity domestically and internationally is essential for capitalizing on the multicultural profile of the workforce and ensuring optimal levels of productivity.

The cultural diversity of the workforce is an economic attribute that must be put into practice for strategic business advantage. This aspect involves the ability to communicate in the languages of many different countries, as well as familiarity with local customs, traditions, business, and financial habits. Failure to take local preferences, packaging, branding, and economic infrastructure into account can lead to poor strategic decisions.

An imperative for the effective management of cultural diversity is cultural sensitivity. Global entrepreneurship requires a level of comfort that leads to the use of the multicultural, multiracial, and multilingual nature of the workforce. This is a profound economic advantage in areas such as international trade, identifying export markets, new economic opportunities, facilitating foreign direct investment, integrating advanced technologies, and assessing the risk of exploitation in a foreign market. A global perspective implies a holistic view of the inclusion of the workforce through which all employees are treated fairly and receive equal opportunities and rewards. Basically, it is about creating the synergy of people, where the result is greater than the contributions, due to the strategic coordination of a diverse and pluralistic workforce.

5.2. Integrating innovation as a factor of entrepreneurship development

Entrepreneurship in the new economy depends on the level of innovation in a persistent and deliberate way. The integration of innovation has become a constant goal for economic efficiency from the global to the local level. Entrepreneurship at all levels must embrace the role of catalyst for innovative change over a continuous period of time. In this regard, it is necessary to identify opportunities to achieve savings of any kind. Multinationals can experience these savings by expanding access to global markets. To this end, they expand the potential of the internal market and increase the scope of their innovation initiatives through research and development, new product development, quality improvement and cost reduction of existing products (Ilzkovitz et al., 2007). It should be noted that the development of a global niche market requires a long-term customer-oriented focus. To compete in the contemporary global marketplace, products and services must be sensitive and responsive to local market needs and customer preferences. Given the diversity of market requirements and needs, the dispersion of production and external supply, the importance of leadership in research, development and recognition of technological advances for product and process innovations; learning and knowledge transfer are the key to global success.

The concepts of innovation and entrepreneurship are closely linked. Entrepreneurs disrupt the balance of the market by introducing new product combinations into a market, better satisfying the needs of consumers and the environment, but also eliminating less productive enterprises, as their innovations advance the frontier of production. GEM evaluates innovation in entrepreneurial activities, analyzing the extent to which entrepreneurs introduce products that are new to a segment of customers, or entirely, and at the same time, are offered by the competitors. As might

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be expected, average levels of innovation increase with the level of economic development or, in other words, more intense innovation activities contribute to increased competitiveness, leading to sustainable development measured by GDP per capita.

As an example, in the figure 1, we can remark that entrepreneurs in innovation-based economies are on an upward trend, with a third (31.2%) in terms of their products being new on the market and in the corresponding industries, followed by 23.1% among entrepreneurs with innovative products in economies based on efficiency and 21.0% on economic factors. Compared to 2017, these statistics remained unchanged in 2018.
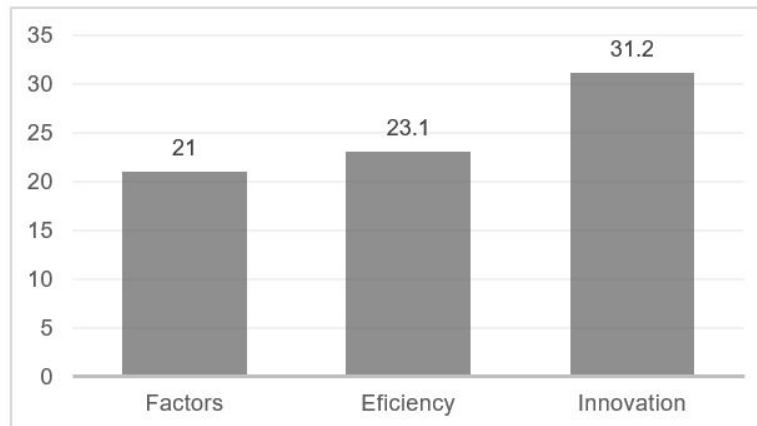

Figure 1: Development phase environments for innovation levels (percentage of TEA with new product and without competitors) in 54 savings, GEM 2017
Source: Source GEM-Global Report 2018/2019

There are several reasons for the consistent finding that levels of innovation are linked to the level of economic development. The developed economies tend to have higher levels of intellectual property protection, and academic education is more readily available. Moreover, a larger proportion of the workforce participates in sophisticated industrial sectors, such as information and communication technology (ICT), as well as the professional and other services industries. Collectively with greater access to advanced technologies, this can encourage entrepreneurs to be more innovative.

Research conducted by GEM shows that the intensity of innovation is the lowest in Latin America and the Caribbean (22.9%) and the highest in North America (39.6%). According to table 2, in individual economies, the highest levels of innovation are reported by Luxembourg at 57.1%, Chile at 54.0%, and France at 48.6%. Chile and Luxembourg maintained their leading position in this category one year before and France advanced. The lowest innovation rates are measured in Panama at 8.5%, Bosnia and Herzegovina at 10.9% and Indonesia at 11.6%. Several economies show an encouraging trend of relatively high TEA rates associated with robust levels of

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innovation. Lebanon is a relevant case in this respect, ranking fourth in the overall GEM sample for both the TEA and the innovation level (and ranked first for the business ownership rate).

Table 2: Level of innovation for TEA by region, GEM 2018 - Percentage of TEA

Region	ECONOMY	Innovation (product is new to all or some customers and few/no businesses offer the same product)	
		SCORE	RANK/54
Europe	Bosnia and Herzegovina	10.9	53
	Bulgaria	13.4	50
	Croatia	19.9	40
	Cyprus	40.9	7
	Estonia	30.2	12
	France	48.6	3
	Germany	23.7	35
	Greece	26.4	25
	Ireland	42.7	6
	Italy	28.2	21
	Latvia	28.4	20
	Luxembourg	57.1	1
	Netherlands	22.5	37
	Poland	12.1	51
	Slovakia	29.2	17
	Slovenia	34.2	10
	Spain	25.0	32
	Sweden	29.1	18
	Switzerland	24.9	33
	United Kingdom	27.1	23
	TOTAL	28.7	
North America	Canada	43.2	5
	USA	35.9	9
	TOTAL	39.6	

Source: Own processing. Data extracted from GEM-Global Report 2018/2019

5.3. Implementation of technological innovations

The profile of the new global economy has been driven by technology and fueled by innovation and entrepreneurship. At the same time, the new economy has changed the economic landscape, created links between different sectors of the economy, and is based on new perspectives and business strategies resulting from the implementation of global thinking.

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The role of information technology in the new economy is essential in the process of changing the structure and international production. International economic transactions that were originally undertaken between independent entities are now internalized into a single multinational corporation or company (Wouters and Chane, 2013). The new technological infrastructure has enabled the services to be disconnected from production and to be marketed or performed remotely. In this contemporary place, for a growing number of internationally integrated but geographically dispersed business enterprises, the market is global, not national or regional, and the internationalization of production is imposed by the economy of profitability. In other words, the high cost of information technology and highly skilled labor used in the production process requires a niche that responds to a global market rather than a national market.

6. In conclusion

Entrepreneurship affects economic growth in many ways. Through entrepreneurship, important innovations enter the market, innovations that lead to new products or production processes that ultimately increment efficiency by increasing competition in that specific market. The ideas and concepts that emerged due to entrepreneurs' involvement, upsurge our knowledge about the entrepreneurial ecosystem. At the same time, we can easily learn about consumer behavior and their product preferences, by introducing new variants of products and services along with those already placed on the market. This situation accelerates the innovation of new products as a result of many hours of work and the practical transposition of the creative character of entrepreneurs.

The entrepreneurial capacity of an economy is the determining element of economic growth and productivity improvement. Consequently, knowing the determinants of entrepreneurship is the first step in establishing and implementing entrepreneurial policies and subsequently calculating their social and economic impact.

Globalization, innovation, trade liberalization, the information and communication technology revolution are the main features of the 21st-century economy, creating a proactive approach to the development of global entrepreneurship.

In order to embrace the view of the global business strategy, the contemporary entrepreneur must expand his mentality with the aim to incorporate multidimensional relationships and complex social, cultural, economic, and political realities.

Entrepreneurship in the new economy depends on the level of innovation in a persistent and deliberate way. The integration of innovation has become a constant goal for economic efficiency from the global to the local level. Entrepreneurship changes the direction of the national economy of the countries. The well-being of a society depends on the level of entrepreneurship within it. Lack of natural resources or capital does not directly lead to stagnation or even the decline of welfare, the main factor being the lack of an entrepreneurial environment that stimulates development involvement and initiatives. Entrepreneurship is essentially concerned with creating well-being through the production of goods and services. This leads to an upward process of change in which a country's real per capita income rises above average or, by way of explanation, economic development takes place. Therefore, the

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evolution of entrepreneurship is the fundamental element of global economic progress.

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