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CONTENTS

ECONOMICS, BUSINESS ADMINISTRATION, TOURISM AND STATISTICS

INVESTIGATION OF THE COMMERCIAL SITUATION AMONG BEEKEEPERS IN HUNGARY FROM 2010 TO THE PRESENT

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Abstract: *The beekeeping and beekeeping sectors are very important sectors on a global scale. This is because these sectors play a key role in agriculture and therefore play an essential role in the food supply of humankind. In our research, we would like to examine this global process at the Hungarian level (what commercial opportunities do Hungarian beekeepers have).*
The main goal of our research is to gain insight into the commercial situation of beekeepers and to help beekeepers who read this research sell their products more efficiently.
We chose this topic because in the current COVID period, it is important to implement a healthy diet in our diet (to which honey can contribute). In our research, we also conducted a questionnaire survey (at the national level among Hungarian consumers). The questionnaire was completed by more than 650 people, and the analysis was performed based on the responses received. We also conducted a survey on the part of farmers, in which we analyzed the investment of a real economy in the sector. Based on the conclusions obtained in the analyzes, we compiled the SWOT analysis, in which the advantages, disadvantages, opportunities and dangers of the sector were presented. Our aim is to get a real picture of the commercial situation of beekeepers in Hungary by conducting research, which may also have an impact on honey consumption in Romania.

Keywords: *beekeeping, SWOT analysis, research, honey*

JEL classification: *M12*

1. Introduction
Beekeeping and the beekeeping sector can be considered a very important sector in Hungary on a global level. The presence of honey for people nowadays is also important for food. In our research, we would like to examine this global process at the Hungarian level, and we also conducted a questionnaire survey on the daily consumption of honey in Hungary. The main goal of our research is to get an insight into the situation of honey production and consumption, and to be able to give suggestions about the trade of beekeepers. In our research, we also conducted a SWOT analysis, which provides an overview of the strengths, weaknesses, opportunities and threats of the current beekeeping sector. With our research I would like to get an idea of the commercial situation of beekeepers, what opportunities they have to gain sales revenue after the production of their products (as well as what the target audience is in case of continuous consumption of honey).

2. Literature
2.1. Production of honey

Bee colonies play a key role in Hungary not only because of their excellent product (honey, propolis, etc.), but also because of their pollination in agriculture. Regarding the types of honey, we also distinguish between flower honey and licorice honey. There are many varieties of flower honey in Hungary (the most special is acacia honey, which can only be produced in the Carpathian Basin and China). Flower honeys are honeys from which commercial quantities can be produced, as these flowers bloom in large quantities at the same time. The most significant flower honeys in Hungary are rapeseed honey, acacia honey and sunflower honey (Zilahy, *2012*). In Hungary, the beekeeping season begins with rapeseed. During rapeseed flowering, bees are most aggressive during the beekeeping season (due to the dormant period in winter). The beekeeping season continues with acacia forests, as there is a relatively large amount of acacia forest in Hungary (a good beekeeper can migrate to several blooms in the forests). The third most important honey plant in chronological order is sunflower, followed only by other plants with a smaller proportion. Sunflower honey areas are mainly located in the southern part of Hungary (Fabula*, 1983*).
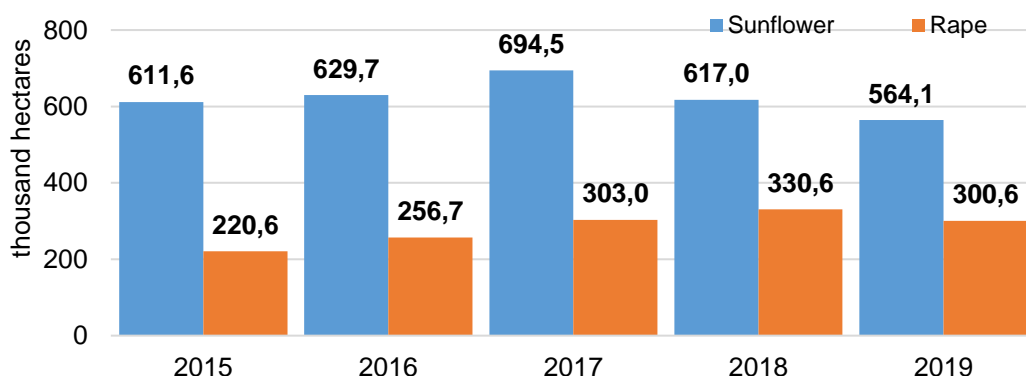
Figure 1. Harvest area of sunflower and rapeseed in Hungary in the period 2015-2019
Source: Own compilation

2.2. Physiological effects of honey and its by-products

The beneficial physiological effects of honey are increasingly known in Hungary. Perhaps the most valuable of the by-products, royal jelly, produced by young working bees separated from their pharyngeal glands (serving as food for the mother and larvae), is very valuable and can be used in many ways in medicine. Royal jelly improves the honey-producing abilities of families in the same way as pollen production, but it is difficult to collect. Most bees produce during maternal rearing, at which point they build a much larger-than-average spleen on the frames and produce plenty of royal jelly next to the egg. Consumption of this large amount of royal jelly turns the common larva into a womb (in Far Eastern countries, royal jelly is used to preserve youth). Another practical benefit of pempő is that it can be used to reduce nausea-like malaise during pregnancy. Today's world market price of royal jelly sold in large quantities is USD 1/10 g (processed royal jelly is much more expensive at this time, USD 30/10 g). When buying a royal jelly product, special attention should be paid to the place of origin and distributor, only buy a product from a reliable source, as it is diluted with honey in many cases for durability. Royal jelly is already consumed in the world today as a dietary supplement, strength booster, immune booster, fertility aid and skin care (Bruneau*, 2019*).

"Propolis" also known as "beeswax" is a naturally produced resin that is collected from surrounding plants and functions as an immune system booster. Propolis is also used by bees as a means of protection (covering many areas of the hive) to protect their young. Its overall composition is 50% resin, 30% beeswax, 10% essential oil, 5% pollen and about the same amount of plant debris. Each bee colony makes a small amount of propolis made from different elements, depending on what vegetation is available to them near their home. The propolis must be collected by the beekeeper (scraped off the corners of the hive, the top of the frames or the sides of the drawers). Propolis was already used for healing in ancient Greece, later records were found among the Egyptians that it was used to preserve corpses. Propolis is still used today for health and fitness purposes (Bruneau *2019*).

Collected pollen serves as one of the main foods for bees, but it also has a beneficial physiological effect on humans. Many beekeepers occasionally focus on collecting pollen instead of honey (the purchase price of pollen is much higher than that of honey). Pollen is not a durable product, many believe bees preserve it with honey (Sőtér, *1895*). Both pollen and honey have been used by mankind since ancient times. According to records, pollen was consumed by our ancestors as a hemostatic or booster drink (Bruneau, *2019*).

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Fordítási találatok

Honey is high in nutrients, minerals and various vitamins, which is why it has been used with great love for centuries. Honey is an essential part of a healthy diet as it is very rich in vitamins and has an excellent mineral content (a valuable source of enzymes). Its regular consumption has health-preserving and disease-preventing effects. In addition to its digestive aid, its water-secreting and calming effect is also important. The honey produced by the bees inhibits the growth of fungi and viruses, is also effective against bacteria (has an antibiotic effect), soothes stomach ulcers and abdominal complaints. Not only does honey have excellent physiological effects when used orally, but research has shown that it can also be used for burns. Due to its extremely good moisture-binding properties, honey is also used by cosmetics companies to prevent dehydration (Bruneau, *2019*).

2.3. The economic situation of beekeepers in the EU

Hungarian honey is one of the high quality products in the European Union. In the European Union, four countries (Romania, Hungary, Bulgaria and Spain) are able to produce and export more than their domestic use. The production volume of the four countries was 260 thousand tons of honey in 2020 as well. Based on a 2019 statement by Péter Bross, President of the National Hungarian Beekeeping Association (hereinafter OMME), "Honey prices have fallen to such an extent in recent years that domestic exporters have stopped buying because the price of honey per barrel has become degradingly low" (Halmos*, 2019*). Beekeepers can expect subsidies from the European Union in 2019-2022. also in the period of. The support fund for beekeepers is EUR 120 million (approximately HUF 39 billion). From this amount, money can be applied for education, starting a beekeeping business and pest control (MAGRO, *2019*).

Countries	Number of beekeepers (person)		Change (%)
	2017-2019	2020-2022	
Germany	116 000	127 259	109,71%
Poland	62 575	74 302	118,74%
Czech Republic	49 486	61 572	124,42%
Italy	50 000	56 059	112,12%
United Kingdom	37 888	40 275	106,30%
Austria	25 277	29 745	117,68%
Spain	23 816	28 786	120,87%
Romania	22 930	23 161	101,01%
Hungary	21 565	22 447	104,09%

Table 1. The country with the 10 highest beekeeping populations in the European Union
(2017-2019 real, 2020-2022 forecast)
Source: own compilation based on Eurostat (2019)

In terms of results in 2019, Europe is the second largest honey producer in the world (after China). The European Union has a total of 17.5 million beehives, owned by 600,000 registered butchers. These numbers may seem high, but this amount represents only about 60 percent of honey consumption. Most honey is imported from China and Ukraine by the European Union (MAGRO*, 2019*). The 10 countries in Europe with the highest beekeeping populations are shown in Table 1, which shows an increase for each of the countries listed. The highest increases were in the Czech Republic, Spain and Poland, as well as in Austria. With the Hungarian stock, 7% of the European Union's honey stock is produced (*European Commission,* 2019).

2.4. Marketing opportunities for beekeepers

In addition to production opportunities, beekeepers should also pay attention to marketing and other management methods. With the help of marketing, the beekeeper can satisfy other customer needs in addition to making a profit. Although it can be of great help to beekeepers to create just one business plan, most of them underestimate these tools, preferring to minimize costs and achieve higher productivity rates (Papp, *2012*).
A marketing approach is essential in farming if the beekeeper wants to recognize and meet consumer needs. Currently, most beekeepers offer products for sale that they can produce easily and efficiently. If a beekeeper wants to make a profit, he needs to be present in the market with products that are competitive and better than his competitors. Market research is very important to reach new segments of the market or to increase profits in areas already present. By choosing the right communication channel, they can reach their target audience, which can play a decisive role in the development of demand, as it can build a relationship of trust without investing more energy (Rekettye et al, *2015*).
The most important part of gaining an advantage is the continuous market presence (retaining loyal customers, reaching new customers). It is essential to adapt their target audience to each consumer's preferences and to increase product quality and confidence in them. The goal is to make sales at all times, but when the beekeeping season is in the middle (when the producer is unable to be present at sales), sales should also be made by a person who is properly informed. Particular attention should be paid to the quality of the product and its parameters should be constant at all times, which includes taste, appearance and texture. In addition to the internal contents, special attention must be paid to the packaging and the container. It is best to portion the honey into jars. The visible properties of the product (color,

texture, crystallization) are important to consumers. It requires a high level of expertise on the part of beekeepers to crystallize their product as late as possible (maintaining an appropriate proportion of glucose levels). Kits that are high in glucose are recommended to be sold in cream honey form (*Mucsi,* 2012).

The demand for a beekeeper's products may be higher than its supply. In this case, you can raise the price or buy a product of similar quality from another producer (but the quality should be constant). If a novice beekeeper's sales suddenly show a large upward trend, in the absence of inexperience, he may not stay on target but cut into more than one thing at a time. Therefore, it is important for the beekeeper to formulate and stick to short- and long-term goals as well (Gulyás, *2014*).

The beekeeper must also pay attention to the sales environment (it is important to decorate the stand in the market; the beekeeper should always sell in the same place, this shows trust, loyalty develops between the buyer and the beekeeper, etc.). Beekeepers can also use a "complementary strategy", which are methods of highlighting or tying. In a "highlighting strategy", a main product is named and the price of the product package is adjusted accordingly, while consumers purchase an additional product or service in addition to choosing the main product. The tying strategy offers a package of products that usually gives the product a better price than what the customer would receive separately. This works especially effectively for price-sensitive consumers, or for consumers who want to save time by buying everything in one place (Mucsi, *2012*).

3. Material and methodology

In our research, we conducted a questionnaire survey in Hungary in order to assess market and consumer needs. With the questionnaire we surveyed the honey consumption habits of Hungarians, as the survey of honey consumption can help beekeepers to have a better view of the sector. The number of completed questionnaires was around 650 (national survey), most of which could be used in the calculations. The respondents covered the entire territory of the country with their answers. Due to the COVID period, the completion was largely done online in professional groups, social networking sites, and in person with acquaintances. In the research, we also prepared our SWOT analysis of the beekeeping sector, in which we gathered the strengths, weaknesses, opportunities and threats of the sector.

4. Material and methodology
4.1. Demographic results of the questionnaire survey

The survey of honey consumption needs in Hungary was assessed by filling in a questionnaire. In addition to demographic data, the questionnaire also included professional and consumer questions. More than 90% of the respondents had at least a high school diploma. 20% had OKJ, FOSZ or other higher education, while 20% also had a degree. The proportion of people with a primary school education was minimal. Based on educational attainment, it can be concluded that residents with higher studies consume a higher proportion of honey (they are more aware of the beneficial effects of honey). Based on marital status, 2/3 of the respondents are married or in a relationship. Singles accounted for 20% of those surveyed. As the proportion of people living in a relationship was very high, it was worth examining the number of children in a given household as well. 15% of respondents did not yet have children. 33-33 percent of the respondents had 1 or 2 children, and the remainder have 3 or more children. The majority of the residents surveyed were working-age people who are presumably involved in determining the product composition of their own family household or appearing on the market as earners. The average age of the respondents was 36 years (the oldest was a person aged 73 who can be considered an

outstanding value based on age). The two largest age groups of the respondents were the 20-30 and 30-40 age groups, respectively, who accounted for approximately 60% of the total. Not only does this age group make decisions about running a household, but 75 percent of those surveyed are raising children, which also increases the amount of honey consumed, as there are so many places to hear that honey also has a health-preserving effect.

As we conducted a national survey, all regions of Hungary participated in the survey (Figure 1). The highest participation was from Central Hungary (due to the capital) and the Northern Great Plain region.
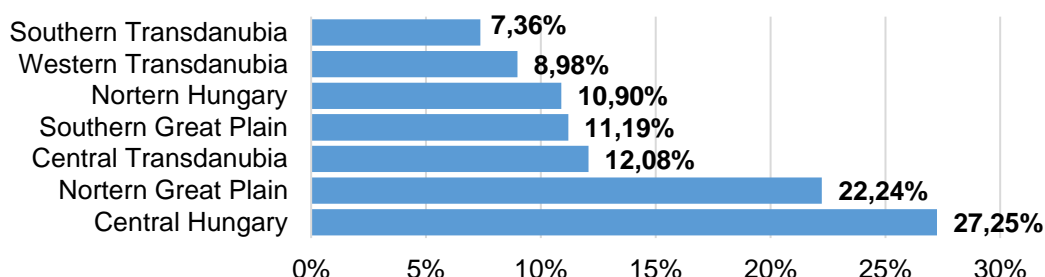
Figure 1. Presentation of the counties participating in the questionnaire survey
Source: Own compilation

The first professional question was whether the respondent consumed honey regularly. Here, nearly 2/3 of the respondents gave regular answers and 1/3 gave rare or never answers. As we were also interested in the responses of honey consumers and non-honey consumers, we present the analyzes in a separate subsection.

4.2. Evaluation of the responses of regular consumers of honey

73 percent of those who complete the questionnaire consume honey regularly or when they run out of supplies at the next purchase. The surveys show that in Hungary they like to consume honey not only because of its taste, but also because consumers are aware of its beneficial physiological effects. The responses revealed that nearly 90 percent of respondents fill in honey based on quality, which is definitely an advantage for artisan beekeepers who sell their honey in retail in glazed form. More than 90% of quality-minded respondents buy honey from a producer (home, market, other place), only a small proportion of residents buy such a product from a retail or wholesale location. In terms of packaging, products purchased from a retail or wholesale location tend to be small bottles (250-400 g) or "Teddy honey" (300 g), while in the case of producer purchases, they mainly buy 1 kg small packaging. Sixty percent of fillers buy more than one type of honey at a time, giving beekeepers the opportunity to design packages as part of their product policy, increasing the value of one-time purchases. Of course, beekeepers need to set their pricing in such a way that by buying these products together, the buyer pays less than if they bought them separately. You can make the packages on offer more valuable by giving the beekeeper various by-products in the package (for example: pollen, propolis or a scented candle made of beeswax). These additional products can be attractive to buyers because these products themselves are very difficult to obtain. It is advisable for beekeepers to sell these by-products as complementary products or to give them as gifts to returning kicks in their purchases for customer retention.

However, the fact that a larger package can weigh up to several kilograms can be a problem when shopping. This can be a big problem if someone buys that package, but carrying the quantity you want to buy is already a problem. Approximately 70 percent of fillers, based on

research, prefer a kilogram package, so any additional products would add to this weight, so the size of the packages should be reconsidered. Based on our recommendation, it is advisable to offer the sale of honey packs in smaller jars (so that customers can buy several types of honey in 500 gram packs).

It is also possible (especially during this pandemic period) for the beekeeper to undertake delivery in his settlement for customers who buy more than a certain minimum batch (the acquaintance between the buyer and the seller can be broadened, and a returning customer base can be formed). With delivery, the difficulty of carrying can be avoided, and the quantity of the purchased item can also increase. Taking advantage of these opportunities, market expansion is also possible (transport should be organized when there are fewer beekeeping tasks). Based on the questionnaire survey, it can also be stated that 78 percent of the respondents have a friend of a practicing beekeeper in the circle of acquaintances (and they also buy from them).
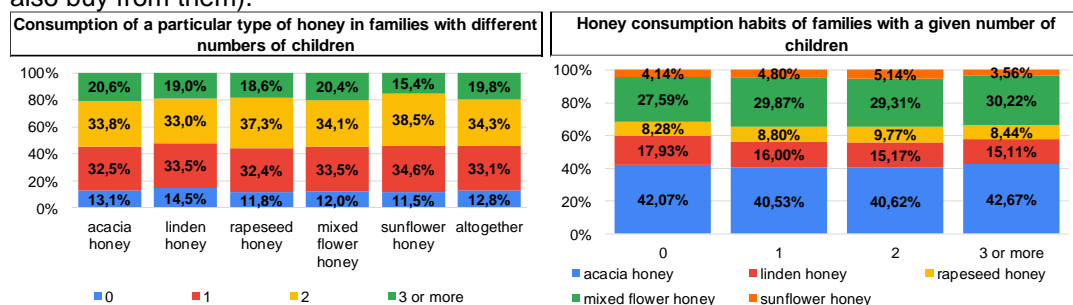
Figure 2. Honey consumption as a function of children raised in the family
Source: Own compilation

In the consumer preferences survey, respondents could choose more than one type of honey at a time. Most of the respondents prefer acacia honey (~ 50%), while sunflower was the least sold (the color of the honey purchased is important, as acacia, which suggests an opaque clean look, is the best seller). On the basis of education, in addition to acacia honey, those with primary education chose linden honey, those with higher education preferred rapeseed honey, while those with secondary and graduate education chose mixed flower honey.

If we examine the respondents based on the number of children raised, it can be stated that acacia and flower honey are consumed best in all families, followed by linden, rapeseed and then sunflower honey in each family (Figure 2).

After testing all types of honey, beekeepers are advised that it is more appropriate to sell rapeseed and sunflower honey mixed as mixed flower honey, as surveys show that there is a greater demand for it. This set-up can also be good for the beekeeper, as the beekeeper does not have to pay special attention to which honey enters the honeycombs when grazing for rapeseed and sunflower. Thus, mixed flower honey can be produced immediately in the hives. Rapeseed honey can be of particular interest to consumers if sold as cream honey (due to its early crystallization). This makes it possible to break the texture of high glucose honeys by thorough mixing, so that the crystallized honey will have a more homogeneous texture. When organizing sales, it can be beneficial to pack less purchased honey varieties with higher proportion of purchased honey and sell them together.

The feedback on the packaging of honey based on the application forms is that consumers do not care much about the packaging of the product. Consequently, the main goal should only be to have transparent packaging (the color of the honey is important to consumers). This can be one of the cost-reducing factors in the case of trade in honey (the choice of hygienic packaging is recommended). We do not recommend disposable plastics, as environmental sustainability is becoming increasingly important not only in Hungary but also

in Europe. We recommend the traditional mason jars, decorated with a simple material. Beekeepers can organize coupon-like promotions with bottle returns, so fewer bottles need to be stored plus (a good solution to protect the environment).

4.3. Evaluating the responses of non-regular honey consumers

Among the respondents, we were also interested in the opinions of non- or rarely consumers. In market research, information gathered from opponents or neutral consumers can always be useful to producers in developing their product or strategy. 23 percent of respondents indicated a rare need for consumption. Respondents in this group consider the consumption of honey to be useless. Promoting honey consumption to this group could be a potential success factor that could convince them to increase sales. Here, however, it is not the enhancement of one's image that is important, but only the promotion of honey, the emphasis on the positive physiological effects of honey. With this, honey lovers and later honey consumers can also be acquired. However, this can only be a long-term plan. Therefore, honey-loving campaigns should be organized for associations for cost-effectiveness.

In addition, half of non-regular honey consumers consider honey to be too expensive a product. For those price-sensitive buyers who love the taste of honey, selling cheaper flower honey can be beneficial, with information that because of its many ingredients, its physiological effect is more beneficial than other types of honey. If you can convince these buyers to consume, we definitely recommend selling cream honey, as flower honey tends to crystallize quickly most of the time. Since with them the honey will only run out after a long time, the cream honey will retain its texture for a long time.

4.4. Useful marketing tools for beekeepers

Nowadays, the use of marketing tools plays a significant role. Beekeepers definitely need to put a lot of emphasis on keeping in touch with customers using direct marketing. Being among the first to define your target audience during a direct marketing campaign should be. Acquiring a new customer can generally be said to take a lot more energy than retaining an existing one, so it's also important to determine in advance who you want to reach. This strategy is particularly noteworthy in how we retain our customers. Successful brands, which are the dominant elements of the market, place maintaining the loyalty of existing customers at the heart of their own strategy. Satisfaction with the product can be increased if we provide additional information on the proper use of our product. Loyalty to the beekeeper, which is in the products, is the strongest guarantee for the beekeeper. Beekeepers must be constantly open to presenting their product to consumers and providing them with appropriate information about it. In the long run, this results in the practice of an existing customer remaining loyal to the beekeeper in the face of competition. However, it is not recommended to ignore the fact that competitors may even have better service or higher satisfaction. Of course, it can also happen that they are able to list more suitable features on the side of their products and all this at a better price. The most effective defense to outperform competitors is to know exactly the position of your competitors (advantages, opportunities, disadvantages, and threats).

A good image plays a very important role in gaining an advantage over competitors. In creating an advantage, oral tradition or a customer (if they are satisfied with the product or service) can be very good, as an average of three other consumers are told by a consumer if they have a positive experience with one of the products. In the case of a bad experience, dissatisfaction is said to eleven people based on the opinions of researchers.

Consumers form an opinion on their own about every company they know, so it is very important to maintain the same quality at all times. It is also possible that someone comes

back with a complaint, in which case, if the beekeeper handles the situation well, he can further strengthen his established image.

4.5. Positioning of apiculture products

After analyzing the questionnaire, it can be concluded that beekeepers can take an example of the product strategies that surround us. Products with similar properties are called substitute products that are sold at the same time or package and also function similarly and are called complementary products. It is advisable to set up two main strategies for substitute products, these are product family development or brand development. Product family development is usually the introduction of a new product under an existing brand name. This strategy can be done by adding a new introduction to products with the same properties, for example: cream honey. The biggest advantage of this activity is that it is marketed with the usual quality, which makes it easier for consumers to accept the new product. Another way to develop the product family could be for the beekeeper potential to offer the richest selection to its customers. Here, a package can contain not only honey products, but also by-products (royal jelly, propolis or even candles made of beeswax). If a beekeeper gives a gift to the customer above the value of the purchase, it moves the beekeeper's judgment in a positive direction.

4.6. Useful online marketing tools for beekeepers

Today's trend in general is that in addition to direct marketing, the use of online marketing can increase the commercial success of a business. The commercial work of beekeepers can be easily divided from market days if they manage to build a customer base that they supply with their products rather than in their retail unit. This saves time and focuses on other customers.

We see a great opportunity for beekeepers in online marketing, gaining followers for themselves by using some kind of social service provider. For those interested, she shares photos, such as where she migrated with her bees, or shares practices, successes, and experiences about herself.

Marketing campaigns can be aided by Facebook ads, which are spreading more and more in our rushing world. The first billion users have been reached by Facebook for 8 years (*Tóth,* 2013). With this tool, you can reach a lot of people easily and quickly. It's a good idea to use ads locally for users between the ages of 30 and 50 (who are presumably raising children) to gain new customers. Be sure to show an ad to a smaller audience more than once to more people than once.

4.7. Content of a business plan tailored to beekeepers

When preparing a business plan, the main activity should be identified first, followed by the ancillary activities. Already in the planning period, it is advisable to define the vision and mission of the company (which includes what goals we want to achieve).

For the planned scope of activities, it is important to assess the market needs before investing a larger amount or long working hours in it. It is very important that we start communicating with our marketing activities only with a well-defined audience. The prepared plan should also include a customer retention and customer acquisition strategy. The preparation of the sales plan follows the marketing plan, during which the beekeepers position their products according to the choice of their activity. Market research plays a major role in determining the price of products. In each case, we need to decide which audience is the most optimal consumer segment for us. When positioning a product, not only the price is important, but also the composition of the different packages. The great advantage of

beekeepers is that in addition to their main product, it is also possible to sell various by-products.

In each case, planning will help you decide if it is worth sacrificing capital, time, and man-hours for beekeeping work. The plan should include calculations of various costs, investment, and projected revenues (Valentin, 2014). A common method of preparing a business plan is also to prepare a SWOT analysis, which provides an idea of the advantages, potential risks and weaknesses of the investment or decision-making.

4.8. SWOT analysis of the beekeeping sector

In addition to preparing the marketing plan discussed earlier, a SWOT analysis performed before the investment can also help. This decision-making method has been used all over the world since the mid-20th century. The analysis can be useful not only for companies but also for decision makers. It can be used in almost every area of life: before buying a property, changing jobs, choosing a career, etc. Companies can make the best use of SWOT analysis, not only before an investment, but also before projects or even starting a business itself. Carrying out an analysis is a particular advantage as it can point to factors that may be important to our company (which we didn't even think about before). This method summarizes the circumstances of decision-making in four points: opportunities, threats, strengths, and weaknesses.

When preparing the analysis, it is important to examine the sector with an objective eye. In our opinion, it is also important to carry out a SWOT analysis before starting a beekeeping business. Elements of the SWOT analysis:

Strengths, which is the most important advantage over the competition. It is important to keep in mind the benefits we have, as a novice beekeeper can easily benefit from these:

The accessibility of the Hungarian experience can be considered one of the strengths, as our small country at the European level can boast very good beekeeping results. Market research results and marketing knowledge.

Weaknesses that mean competition lags. Entering the covered market, as the Hungarian market is saturated. Difficulties in acquiring new customers. Other beekeepers who have been in the profession for a longer period of time with a higher staff and more modern equipment.

Opportunities that provide an opportunity to achieve a higher level of development. Possibility of intra-group sales to other European countries. Options include various EU and domestic subsidies for beekeepers for. Introduction of a new sales strategy. Market expansion due to the spread of a healthy lifestyle.

Danger where external factors appear (unfavorable for development): Weather conditions and constantly renewed sprays, mutations of diseases harmful to bees. Malicious people are causing more and more damage to bee colonies by robberies or stealing honey-filled frames from unattended bee colonies.

5. Conclusions and recommendations

The main goal of our research was to review the difficulties and opportunities of the beekeeping sector in Hungary (taking into account the general difficulties of production and sales). In our research, we conducted a questionnaire survey to assess the consumption potential of honey in Hungary. As the survey was nationwide, the answers provided a unified picture of Hungarian honey consumption habits. Based on the answers received, it can be stated that most consumers are aware of the healthy physiological effects of honey, which is why it can be concluded why the high quality of the purchased product is so important for consumers and whether it comes from a Hungarian producer. Of particular interest,

according to the questionnaires, for honey buyers, the quality of honey and its sourcing from a reliable source is more important than its price.

In our research, we also examined the livelihood opportunities, weaknesses, threats, and strengths inherent in the beekeeping sector (SWOT-analysis). An evaluation of the questionnaires shows that the majority of the respondents are young married, which can be considered a suitable target audience for beekeepers. As the responses show, honey is purchased from producers as opposed to retail units.

It is recommended to beekeepers not to sell their honey to buyers, but at a much higher retail price. It is advisable to sell honey primarily as a package (supplemented with beekeeping by-products), so that higher value purchases can be targeted at the same time. When selling packages, we would introduce local free home delivery over a certain amount of value.

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THE WAGES SYSTEM IN ROMANIA – BETWEEN CONVERGENCE AND DISCRIMINATION. SUSTAINABILITY OR OVER-REGULATION?

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Abstract: *The wages system in Romania is a subject of great importance. Although, apparently, the situation on the labour market has improved during the last years, compared to the member countries of the European Union there are many problems in Romania, due to an inadequate structure in the national economy, the way in which privatization and economy restructuring were performed, the mass emigration labour market, which have generated imbalances between labour supply and demand. The paper aims at highlighting the changes in the salary system in Romania in the period of post-accession to the European Union. An analysis was conducted, the official statistical data on the evolution of the average net monthly salary were detailed, differentiated by size classes of economic agents, by gender and by sectors of the national economy.*

Keywords: *labour market, discrimination, wages, public sector, private sector*

JEL Classification: *E24, E64, J31, J45, J71*

1. Introduction

The transition to the market economy of the former socialist economies and the European economic integration have triggered important transformations in the labour market, which have accentuated or diminished its discrimination and vulnerabilities. The issue of the sustainability of an economic system automatically implies the trend towards balance of the labour market from the perspective of demand, supply and salary level.
According to literature, "macroeconomic stability is characterized by improving business conditions" (Belas et al., 2020). On ther other hand, the labour market can be seen as a system that has as input the demand and supply of labour and as outputs the income generated for employees and implicitly the expenses borne by employers. The feedback relationship between these elements can generate the system sustainability or, on the contrary, major imbalances on the labour market, such as unemployment (Pauhofova and Stehlikova, 2018) and underemployment.
The labour market reveals the processes and laws that ensure the demand and supply of labour, the mechanisms and operations underlying employment and efficient use thereof (Minică, 2004).
According to the neoclassical model, Dornbusch and Fisher (1990) highlight the conditions for achieving equilibrium in the labour market from the perspective of a microeconomic analysis. Companies will not require hours of work if there is no market demand for the goods and services offered. The labour demand is determined by the level of marginal labour productivity which is a decreasing quantity. All active and fit people make a choice between work and rest (non-work). The decision to work depends on two effects: income and substitution.

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2. Conceptual framework

As per the analysis conducted by Santos and Sequeira (2013), the level of the average wages (Marek, 2019) differs between the branches of activity, in industry there is an average hourly cost between 27.4 and 33.2 euros, while in construction it varies between 25 and 27.6 euros, and in services between 27 and 29.6 euros. The share of social contributions of employees in the total cost of labour is 23.7% on the average in the European Union. The pay gap between women and men is also due to the fact that 31.7% of employed women work part-time, while the European average of men employed in this system reaches only 8.8%.

Vacas-Soriano, Fernández-Marcias and Muňos de Bustillo (2019) identify the fact that "mainstream theories" (also mentioned by Privarova, 2007) of economic growth (Ucak, 2012) predict a process of convergence as a result of the European economic integration. According to the theory of Heckscher-Ohlin, countries will specialize in those activities that efficiently capitalize on their resources, and the Stopler-Samuelson theory predicts that there will be a simultaneous process of convergence between countries in the price of production factors (labour and capital). The literature provides empirical evidence highlighting convergence between different groups of countries, known as convergence clubs (Baumol and Wolf, 1988), for countries with similar social institutions, economic reality and geographical positioning, and in particular for the European Union (Sachs and Warner, 1996). According to Radlinska et al, "global crises result in difficulties on the European labor markets" (Radlinska et. al, 2020).

The evolution of revenues is pro-cyclical and in conditions of recession their convergence process is distorted, especially due to the strong impact it had on countries with a low level of economic development (Chirinko, 1980; Brandolini, 2007).

Over time, due to the so-called model of social convergence, the differences between countries in terms of income have decreased (Clark, 2013) for the following reasons: modernization and standardization of institutions as a result of economic development (Meyer et al. 1997), the limits imposed by the structural variations of society by establishing a common division of labour (Levy, 1966); the influence of globalization in terms of technology (Bhalla, 2002), common policies and benchmarking applied to the European Union (Torfason and Ingram, 2010).

The gender of the employee has a negative effect in all countries, the consequence being that, on the level of the European Union, in 2017, women earned 16.2% less than men in terms of gross hourly income. The most important differences are registered in Estonia (25.3%), the Czech Republic (28.1%), Germany (21.5%). On the other hand, the smallest differences between the gains obtained by men and women were registered in Romania (5.2%), Italy (5.3%), Luxembourg (5.5%) and Belgium (6.1 %). Literature addresses this issue in terms of gender discrimination (Hedija and Musil, 2020; Gori et al, 2018; Macarie and Moldovan, 2012). Some of these income disparities can be explained by the individual characteristics of male and female employees (experience and education) and part of the gender segregation of the occupational sector (Rakauskiene and Chlivickas, 2007), the income gap (Zeman, 2019; Șandor et al, 2011) having a connection with cultural, legislative, social and economic factors, behind pay differences for the same work.

In 2018, on the level of the EU member states, the average hourly labour cost ranged from 5.4 euros to 43.5 euros, the lowest levels being recorded in Bulgaria and Romania, and the highest in Denmark, Luxembourg and Belgium, according to the following graph:
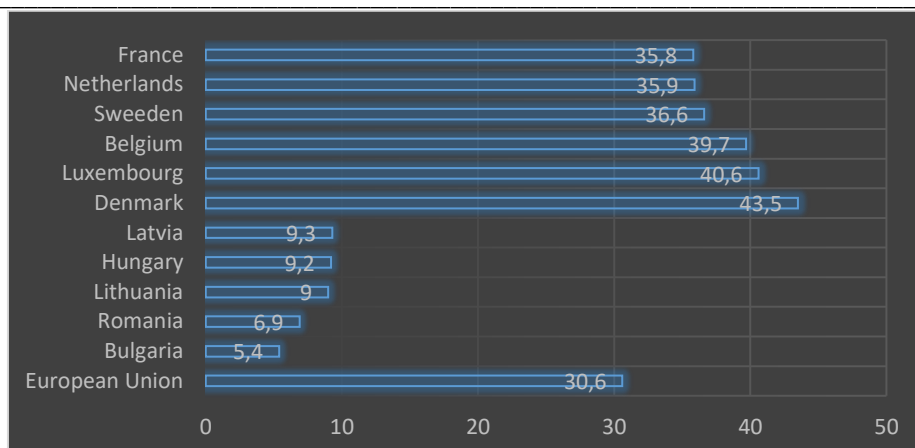
Figure 1: Average wage cost in several EU countries (euro)
Source: elaborated by the authors, according to Eurostat information

Budria and Moro-Egido (2014) state that the phenomenon of overqualification may reflect a "significant mismatch between the real potential of employees and the productivity limit at work". Hitka et al. (2018) mention flexibility related to family as a reason of discrimination of women ar workplace, while Vargic and Luptakova (2003) consider "building and supporting the existence of informal relationships" as being a positive aspect.

Due to the impact of the free movement of labour, on the European market and including in Romania, some vulnerabilities are created for certain categories of workers, especially for those with a low level of education (Gottvald et al, 2013). The importance of education is highlighted in literature (Vaiciukeviciute et al, 2019). According to Eurostat data, the number of workers with higher education in the EU Member States of the European Union in the period 2008-2015 increased by 13 million workers, while the number of those with secondary education decreased by 7.4 million. The high share of people with lower education is a major vulnerability of the labour market, especially in the economic crisis, and lifelong learning, which could reduce the effects of this situation, is formal, with no real impact on the level of training. Although many companies offer various courses and trainings in order to develop skills specific to the field of activity, they are financed from the companies' own resources, being an extra-salary cost of labour, which can put pressure on the salary fund and condition the employee to stay a certain period at the respective workplace, in the opposite situation, having to pay the equivalent value of these trainings.

The most worrying phenomenon on the labour market in Romania, however, remains the decrease in labour supply, due to the massive international migration in recent years. Thus, according to the data of the National Institute of Statistics, 2.069 million people changed their usual residence, between 2008 and 2017, amid a decrease in the resident population, from 20.64 million in 2008 to 19.52 million in 2018.

3. Empirical analysis

3.1. Research methodology

The case study analyses the official statistical data (from the Statistical Yearbook of Romania), registered for the period 2008 - 2017 (the post-accession period of Romania to the European Union).

The general objective of the study is to highlight the evolution of wage differences in the public and private sector, depending on the order of size of enterprises, by number of employees and by gender (male / female).

Hypothesis 1 – Wage incomes in public enterprises are higher than those in the private sector, the gaps widening over time.

Hypothesis 2 – Due to economies of scale and productivity increases, wages in large enterprises (over 250 employees) are higher than in SMEs. Wage differences at the level of large enterprises are insignificant between the public and private sectors.

Hypothesis 3 – Gender discrimination from the perspective of salary income is registered in the case of all types of enterprises.

Hypothesis 4 – The economic dimension of sustainability is determined by a priority contribution of the private sector to the generation of surplus value, and therefore a primary distribution of revenues with priority to this sector.

In order to reach the proposed objectives and to test the hypotheses of the study, data from official statistics were used, regarding the level of net earnings obtained by employees in Romania, respectively the number of employees in Romanian enterprises. The data were collected from the 2009-2019 editions of the Statistical Yearbook of Romania, for the time interval of one decade, mentioned above, being centralized in the form of time series, using for their processing the statistical software. The analysis was performed for each category of enterprises, organized according to the following criteria:

- C1 – size (less than 50 employees, 50-249 employees and over 250 employees);
- C2 – type of sector: public and private;
- C3 – gender of employees (male and female).

For the correlation analysis of these data we proceeded to study the evolution over time, following a comparison between the categories of enterprises according to the above criteria, testing the research hypotheses using a simple unifactorial regression model, in order to establish the link between the two mentioned indicators. A time series represents a sequence of values recorded by a specific random variable in a time interval, being analysed the frequency of the series, therefore the periodicity with which the variable is observed. In this case, the frequency is annual. For the in-depth study of the evolution of the aforementioned indicators, one can analyse the oscillation over time of the values, through graphical representations, comparing successively the levels of two consecutive years. In order to verify the validity of the data used, as well as the level of representativeness, various statistical tests were taken into account, the results obtained being interpreted in the content of the present case study.

3.2. Data analysis

The input data used in the study were centralized in the following tables:

Table 1: Average monthly net nominal earnings, by size classes of enterprises and gender

			2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
General	Under 50 employees	Lei	843	844	903	957	960	973	1083	1235	1362	1602
		euro	*228.90*	*199.18*	*214.49*	*225.82*	*215.44*	*220.19*	*243.67*	*277.84*	*303.29*	*350.69*
	50 – 249 employees	Lei	1217	1294	1354	1380	1439	1512	1617	1799	2057	2355
		euro	*330.46*	*305.38*	*321.62*	*325.63*	*322.94*	*342.16*	*363.81*	*404.72*	*458.05*	*515.53*
	Over 250 employee	lei	1644	1735	1711	1759	1854	1988	2130	2296	2519	2873

	es	euro	446.41	409.46	406.42	415.06	416.07	449.88	479.23	516.54	560.93	628.93
Female	Under 50 employees	lei	1067	1075	1170	1233	1259	1297	1454	1614	1792	2148
		euro	289.73	253.70	277.91	290.95	282.54	293.51	327.14	363.10	399.04	470.22
	50 – 249 employees	lei	1579	1686	1742	1786	1897	2005	2151	2411	2723	3171
		euro	428.76	397.90	413.88	421.44	425.72	453.72	483.96	542.41	606.35	694.16
	Over 250 employees	lei	2093	2214	2145	2191	2322	2502	2687	2927	3225	3750
		euro	568.33	522.50	509.51	517.00	521.10	566.19	604.55	658.49	718.13	820.91
Male	Under 50 employees	lei	1167	1183	1272	1363	1337	1344	1498	1749	1916	2234
		euro	316.89	279.19	302.14	321.62	300.04	304.14	337.04	393.48	426.65	489.04
	50 – 249 employees	lei	1664	1792	1924	1958	2012	2111	2265	2510	2887	3257
		euro	451.84	422.91	457.02	462.02	451.52	477.71	509.61	564.68	642.87	712.99
	Over 250 employees	lei	2352	2514	2559	2650	2787	2977	3182	3417	3732	4203
		euro	638.66	593.30	607.85	625.31	625.45	673.68	715.92	768.73	831.03	920.08

Source: authors' processing, apud the information from Romania's Statistic Yearbook, 2018

With regard to the average monthly net nominal earnings, there is a steady increase, but not equal between two consecutive years, in all categories of wages, highlighting the differences in income between the category of small and medium enterprises and those with more than 250 employees. The ratio between the level of net female and male nominal earnings highlights the lack of homogeneity over time and by size classes of enterprises.

Table 2: Differences and salary ratio male - female

Year	Male - female salary differences						Female - male salary ratio (%)		
	Under 50 employees		50 – 249 employees		Over 250 employees		Under 50 employees	50 – 249 employees	Over 250 employees
	lei	euro	Lei	euro	Lei	Euro			
2008	100	27.15	85	23.08	259	70.33	0.9143	0.9489	0.8899
2009	108	25.49	106	25.02	300	70.80	0.9087	0.9408	0.8807
2010	102	24.23	182	43.23	414	98.34	0.9198	0.9054	0.8382
2011	130	30.68	172	40.59	459	108.31	0.9046	0.9122	0.8268
2012	78	17.50	115	25.81	465	104.35	0.9417	0.9428	0.8332
2013	47	10.64	106	23.99	475	107.49	0.9650	0.9498	0.8404
2014	44	9.90	114	25.65	495	111.37	0.9706	0.9497	0.8444
2015	135	30.37	99	22.72	490	110.24	0.9228	0.9606	0.8566
2016	124	27.61	164	36.52	507	112.90	0.9353	0.9432	0.8641
2017	86	18.83	86	18.83	453	99.17	0.9615	0.9736	0.8922

Source: authors' processing

The gender pay gap is favourable for men, for the whole period analysed, for all three categories of enterprises, the ratio between nominal female / male earnings being between 90.46% in 2011 and 97.06% in 2014, the period of the ten years analysed recording variations of this report. The calculated values are lower in terms of enterprises with more

than 250 employees, where the lowest level of the report is recorded in 2011, 82.68%, the highest level corresponding to 2017 - 89.22%. On the average, during the ten years analysed, the ratio of the number of female / male employees is 78.35% for companies with less than 50 employees, 74.54% for those with 50-249 employees and 105.17% for those with more than 250 employees.

Table 3: Net nominal average wage gaps (euro), by companies' size classes

Company	$\Delta_{\frac{2009}{2008}}$	$\Delta_{\frac{2010}{2009}}$	$\Delta_{\frac{2011}{2010}}$	$\Delta_{\frac{2012}{2011}}$	$\Delta_{\frac{2013}{2012}}$	$\Delta_{\frac{2014}{2013}}$	$\Delta_{\frac{2015}{2014}}$	$\Delta_{\frac{2016}{2015}}$	$\Delta_{\frac{2017}{2016}}$
Under 50 employees	87.02%	107.69%	105.28%	95.56%	102.20%	110.66%	114.01%	109.16%	100.79%
50 – 249 employees	92.41%	105.32%	101.25%	99.17%	105.95%	106.33%	111.25%	113.18%	112.55%
Over 250 employees	91.72%	99.26%	102.12%	100.24%	108.12%	99.86%	107.79%	108.59%	112.12%

Source: authors' processing

In 2009 compared to 2008, during the economic crisis, wages decreased, affecting mostly small enterprises (with less than 50 employees), the situation being remedied slowly, except for 2012, when, compared to 2011, at in this category and in medium-sized enterprises, there is a small decrease, and in large enterprises, the income situation deteriorates slightly in 2014 compared to 2015.

Small businesses are those that, although dominant in number in the economy, do not find solutions to increase revenue, especially due to low productivity and a poor level of technical equipment. Large companies, with over 250 employees, although the least numerous, have a favourable evolution of salary incomes, mainly due to the efficiency of management and know-how implemented in subsidiaries of multinational companies.

Table 4: Average monthly net nominal earnings, by size classes of companies and by gender, for the public sector

Company category		m.u.	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
General	Under 50 employees	Lei	1503	1662	1448	1402	1519	1689	1792	1930	2237	2858
		Euro	*408.12*	*392.23*	*343.95*	*330.85*	*340.89*	*382.21*	*403.19*	*434.20*	*498.13*	*625.64*
	50 – 249 employees	Lei	2229	2107	1983	1994	2186	2377	2609	2807	3128	3969
		Euro	*605.26*	*497.25*	*471.03*	*470.52*	*490.57*	*537.90*	*587.00*	*631.50*	*696.54*	*868.85*
	Over 250 employees	Lei	2433	2458	2318	2308	2429	2639	2859	3068	3398	4048
		Euro	*660.66*	*580.09*	*550.61*	*544.61*	*545.11*	*597.19*	*643.25*	*690.21*	*756.66*	*886.15*
Female	Under 50 employees	Lei	1395	1544	1352	1326	1464	1622	1724	1887	2183	2749
		Euro	*378.80*	*364.38*	*321.15*	*312.89*	*328.55*	*367.05*	*387.89*	*424.52*	*486.10*	*601.78*
	50 – 249 employees	Lei	2293	2086	1977	1969	2178	2384	2629	2823	3147	4029
		Euro	*622.64*	*492.29*	*469.61*	*464.62*	*488.78*	*539.49*	*591.50*	*635.10*	*700.77*	*881.99*
	Over 250	Lei	2261	2269	2078	2028	2164	2396	2635	2854	3191	3897
		Eur	*613.*	*535.*	*493.*	*478.*	*485.*	*542.*	*592.*	*642.*	*710.*	*853.*

	employe es	o	95	48	60	54	64	20	85	07	56	09
Male	Under 50 employe es	Lei	1637	1805	1568	1496	1585	1767	1871	1984	2305	2993
		Eur o	444. 51	425. 98	372. 46	353. 00	355. 70	399. 86	420. 96	446. 34	513. 27	655. 20
	50 – 249 employe es	Lei	2163	2132	1998	2027	2194	2369	2583	2787	3104	3727
		Eur o	587. 34	503. 15	474. 60	478. 30	492. 37	536. 09	581. 15	627. 00	691. 19	815. 88
	Over 250 employe es	Lei	2667	2723	2650	2696	2805	2995	3192	3394	3727	4295
		Eur o	724. 20	642. 63	629. 47	636. 16	629. 49	677. 76	718. 17	763. 55	829. 92	940. 22

Source: authors' processing, apud the information from Romania's Statistic Yearbook, 2018

In the public sector, due to the austerity measures taken by the Romanian Government to reduce the effects of the economic crisis, there was a reduction in the level of wages in the budget sector by 25% in 2010-2011, the level of average monthly net earnings fluctuated and major increases were recorded in the last two years analysed.

Gender pay gaps are favourable for men, for public enterprises with less than 50 and over 250 employees, the ratio between nominal female / male earnings being between 85.22% in 2008 and 95.11% in 2015, in the analysed interval there are variations of this ratio. The exception to this trend is the value of the average net monthly nominal earnings for public enterprises with 50-249 employees, where the salary level of women exceeds that of men constantly, since 2013.

Table 5: Differences and male - female wage ratio in the public sector

Year	Male - female salary differences (lei)						Female - male salary ratio (%)		
	Under 50 employees		50 – 249 employees		Over 250 employees		Under 50 employees	50 – 249 employees	Over 250 employees
	Lei	euro	Lei	euro	Lei	euro			
2008	242	65.71	-130	-35.30	405	109.97	0.8522	1.0601	0.8481
2009	261	61.60	46	10.86	454	107.14	0.8554	0.9784	0.8333
2010	216	51.31	21	4.99	572	135.87	0.8622	0.9895	0.7842
2011	170	40.11	58	13.69	668	157.63	0.8864	0.9714	0.7522
2012	121	27.15	16	3.59	641	143.85	0.9237	0.9927	0.7715
2013	145	32.81	-15	-3.39	599	135.55	0.9179	1.0063	0.8000
2014	147	33.07	-46	-10.35	557	125.32	0.9214	1.0178	0.8255
2015	97	21.82	-36	-8.10	540	121.48	0.9511	1.0129	0.8409
2016	122	27.17	-42	-9.35	536	119.36	0.9471	1.0135	0.8562
2017	244	53.41	-137	-29.99	398	87.13	0.9185	1.0352	0.9073

Source: authors' processing, apud the information from Romania's Statistic Yearbook, 2018

On average, during the ten years analysed, the ratio of the number of female / male employees is 121.35% for public enterprises with less than 50 employees, 125.18% for those with 50-249 employees and 146.70% for those with over 250 employees, highlighting the more pronounced female character of the organizational culture in the enterprises subordinated to the public power.

Table 6: Average monthly net nominal earnings, by size classes of enterprises and by sex, for the private sector

Company category		m. u.	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
General	Over 50 employees	lei	1100	1096	1205	1294	1280	1288	1449	1669	1833	2148
		euro	298.69	258.66	286.23	305.34	287.25	291.47	326.01	375.48	408.17	470.22
	50 – 249 employees	lei	1503	1646	1804	1860	1921	2004	2136	2402	2751	3050
		euro	408.12	388.45	428.51	438.90	431.10	453.50	480.58	540.38	612.59	667.67
	Over 250 employees	lei	2026	2264	2380	2519	2658	2813	2982	3237	3517	3909
		euro	550.14	534.30	565.33	594.40	596.50	636.57	670.93	728.23	783.16	855.72
Female	Under 50 employees	lei	781	767	846	896	910	924	1043	1158	1282	1526
		euro	213.81	181.01	200.95	211.43	204.22	209.10	234.67	260.52	285.47	334.06
	50 – 249 employees	lei	1043	1145	1220	1269	1338	1394	1478	1676	1901	2108
		euro	283.22	270.22	289.79	299.44	300.27	315.46	333.89	377.05	423.31	461.46
	Over 250 employees	lei	1401	1581	1635	1745	1833	1919	2002	2187	2382	2635
		euro	380.43	373.11	388.37	411.76	411.36	434.26	450.43	492.01	530.42	576.83
Male	Under 50 employees	lei	859	852	920	991	971	964	1077	1267	1384	1600
		euro	255.45	201.07	218.53	233.84	217.91	218.15	242.32	285.04	308.19	350.26
	50 – 249 employees	lei	1181	1275	1401	1429	1457	1520	1622	1804	2091	2294
		euro	320.69	300.90	332.79	337.20	326.97	343.97	364.94	405.85	465.41	502.18
	Over 250 employees	lei	1581	1738	1813	1907	2028	2170	2322	2503	2730	3027
		euro	429.30	410.17	430.65	450.02	455.12	491.06	522.43	563.10	607.91	662.64

Source: authors' processing, apud the information from Romania's Statistic Yearbook, 2018

As regards the private sector, there is a greater gap between wage levels by size groups of enterprises, a steady but slower evolution of the level of wages for enterprises under 50 employees, due to increases in the minimum wage imposed by the state and low labour productivity. For enterprises with 50-249 employees, the female-male differences are significant, and for enterprises with more than 250 employees, the differences from the public sector are smaller than from the other two categories of enterprises. The male-female wage differences are constantly favourable to the male gender, regardless of the size of private enterprises, however, there are significant differences in 2017 in private enterprises with over 250 employees, in which the salaries obtained by women represent only 87.05% of those earned by men.

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Table 7: Differences and male - female wage ratio in the private sector

Years	Male - female salary differences						Female - male salary ratio (%)		
	Under 50 employees		50 – 249 employees		Over 250 employees		Under 50 employees	50 – 249 employees	Over 250 employees
	Lei	*Euro*	Lei	*euro*	Lei	*euro*			
2008	78	21.18	138	37.47	180	48.88	0.9092	0.8831	0.8861
2009	85	20.06	130	30.68	157	37.05	0.9002	0.8980	0.9097
2010	74	17.58	181	42.99	178	42.28	0.9196	0.8708	0.9018
2011	95	22.42	160	37.75	162	38.23	0.9041	0.8880	0.9150
2012	61	13.69	119	26.71	195	43.76	0.9372	0.9183	0.9038
2013	40	9.05	126	28.51	251	56.80	0.9585	0.9171	0.8873
2014	34	7.65	144	32.40	320	72.00	0.9684	0.9112	0.8622
2015	109	24.52	128	28.80	316	71.09	0.9140	0.9290	0.8738
2016	102	22.71	190	42.31	348	77.49	0.9263	0.9091	0.8725
2017	74	16.20	186	40.72	392	85.81	0.9538	0.9189	0.8705

Source: authors' processing apud the information from Romania's Statistic Yearbook, 2018

The lowest gap was registered in 2014, when the salaries obtained by women represented 96.84% of those obtained by men, in companies with less than 50 employees, given that the ratio of the number of female / male employees was 74.63%. On the average, during the ten years analysed, the ratio of the number of female / male employees is 75.38% for private enterprises with less than 50 employees, 66.35% for those with 50-249 employees and 79.26% for those with over 250 employees, highlighting the more pronounced masculine character of the organizational culture in the enterprises subordinated to the private power. According to Grybaite (2006), "the number of women in the world labour force is growing".

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Public	408,12	392,23	343,95	330,85	340,89	382,21	403,19	434,2	498,13	625,64
Privat	298,69	258,66	286,23	305,34	287,25	291,47	326,01	375,48	408,17	470,22
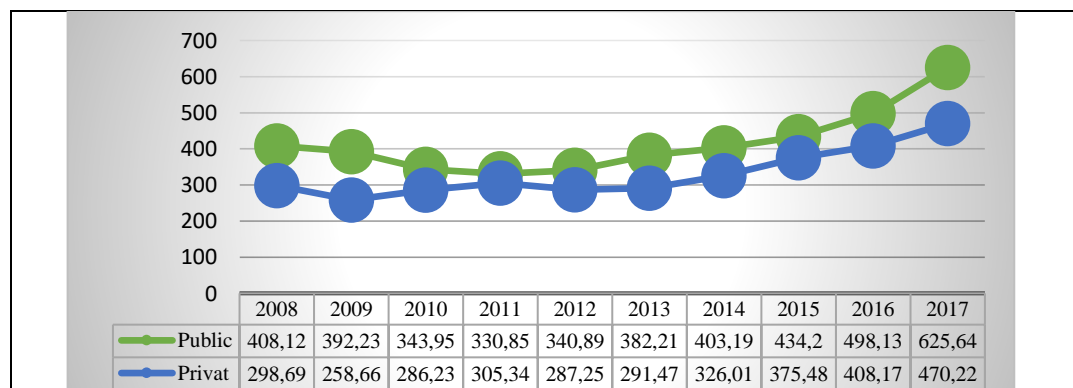
Figure 2: Average monthly net nominal earnings (euro), for enterprises with less than 50 employees, for the public and private sector
Source: authors' processing, apud the information from Romania's Statistic Yearbook, 2018

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Public	605,26	497,25	471,03	470,52	490,57	537,9	587	631,5	696,54	868,85
Privat	408,12	388,45	428,51	438,9	431,1	453,5	480,58	540,38	612,59	667,67
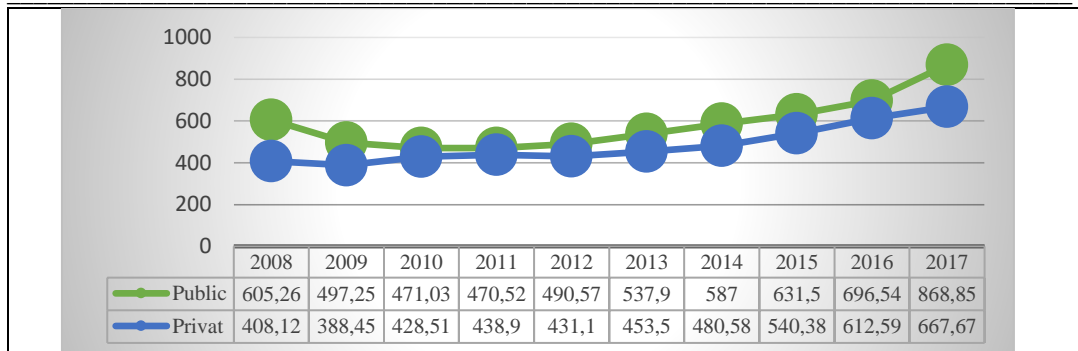
Figure 3: Average monthly net nominal earnings (euro), for enterprises with 50 - 249 employees, for the public and private sector
Source: authors' processing, apud the information from Romania's Statistic Yearbook, 2018

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Public	660,66	580,09	550,61	544,61	545,11	597,19	643,25	690,21	756,66	886,15
Privat	550,14	534,3	565,33	594,4	596,5	636,57	670,93	728,23	783,16	855,72
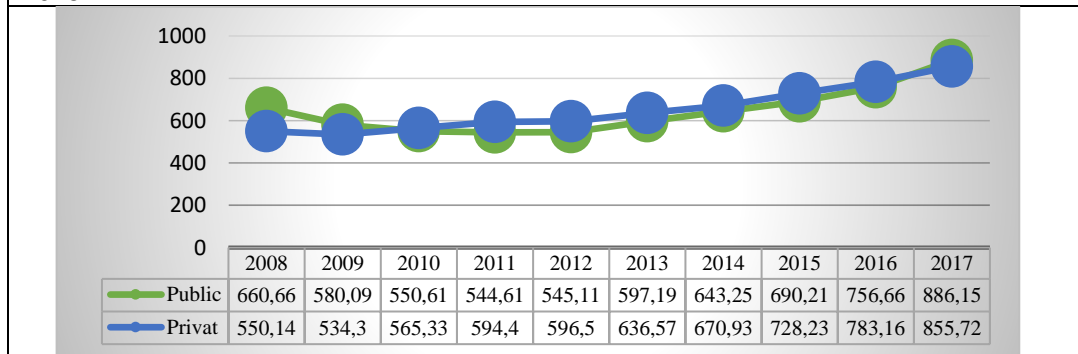
Figure 4: Average monthly net nominal earnings (euro), for enterprises with more than 250 employees, for the public and private sector
Source: authors' processing, apud the information from Romania's Statistic Yearbook, 2018

According to the Global Gender Gap Report, "at the dawn of the 2020s, building fairer and more inclusive economies must be the goal of global, national and industry leaders". For small economic agents, which include mainly public administrations and local companies, there is a significant difference between the public and private sectors. This differentiation has been accentuated in the last two years also due to the salary increases that civil servants and medical staff have benefited from.

Regarding the economic agents with more than 250 employees, there is a decrease in the gap between 2008 and 2017, reaching the very situation where, in the autonomous utilities, large public companies, to register higher salary levels than in some multinational companies.

3.3. The correlation analysis

The data highlighted in the previous tables were processed and the results obtained are presented below. Thus, for all three criteria C1, C2 and C3, replacing the initial data for two parameters in a regression equation, this becomes:

$$\text{salary\_earnings} = \alpha + \beta * \text{employees\_no} + \varepsilon \qquad (1)$$

The parameter α represents the value taken by the resultant variable Y (earnings), when the factorial variable X (number of employees) has the value zero and may have higher or lower relevance depending on the case analysed.

The coefficient β represents the regression coefficient, so the value by which the resultant variable Y changes (earnings) when the factorial variable X (number of employees) changes by one unit, its sign determining the level of interdependence between the resultant variable and the factorial variable.

For the analysis of the connection between the two variables, the results of the statistical tests Student and Durbin Watson were used, the table below presenting the values obtained in the program, centralized according to the three basic criteria.

Table 8: The values of the calculated statistical variables

C1 – Company category	R-Squared	F-Statistics	Durbin – Watson	t-Statistic α	t-Statistic β	Coefficient α	Coefficient β
Under 50 employees	0.267266	2.771020**	.263697**	-0,177010	1.664638	-128.7646	0.000873
50 – 249 employees	0.130220	1.197729**	.425903**	-0.520956	1.094408	2798.760	0.002567
Over 250 employees	0.007093	0.057153**	.193384**	0.988444	-0.239067	2704.129	-0.000303

C2 – Activity sector	R-Squared	F-Statistics	Durbin – Watson	t-Statistic α	t-Statistic β	Coefficient α	Coefficient β
Public							
Under 50 employees	0.037808	0.314349**	.372607**	0.276567	0.560669	596.8565	0.010999
50 – 249 employees	0.011767	0.095257**	.325604**	1.289248	-0.308638	3334.987	-0.004060
Over 250 employees	0.325861	3.866993**	.461180**	3.482820	-1.966467	6391.587	-0.003594
Private							
Under 50 employees	0.199052	1.988163**	.258940**	0.137343	1.410022	128.1949	0.001030
50 – 249 employees	0.111632	1.005276**	.382299**	-0.156057	1.002635	-389.4214	0.002795
Over 250 employees	0.310581	3.603981**	.448009**	-0.757636	1.898415	-1886.662	0.004080

C3 – Gender of employees	R-Squared	F-Statistics	Durbin – Watson	t-Statistic α	t-Statistic β	Coefficient α	Coefficient β

Female							
Under 50 employees	0.198590	1.982412**	.20628**	-0.224998	1.407982	-269.5678	0.002777
50 – 249 employees	0.348320	4.275959**	.67762**	-1.566182	2.067839	-6618.020	0.018784
Over 250 employees	0.103364	0.922234**	.18496**	-0.266429	0.960330	-1001.923	0.003265
Male							
Under 50 employees	0.265654	2.894053**	.31719**	-.057611	1,701192	-53.12792	0.002014
50 – 249 employees	0.047841	0.401961**	.30661**	0.035776	0.634004	119.6808	0.003392
Over 250 employees	0.195255	1.941033**	.30964**	2.392450	-1.393210	7254.418	-0.004009

Source: authors' processing

In cases where β > 0, the link between the factorial variable and the resultant one is a direct one, so when the growth rate of the number of employees has an increasing evolution, the salary gain also increases.

When coefficient β is positive, we can encounter the following situations:

- β < 1 – when the influence of the factorial variable on the resulting one is weaker;
- β > 1 – when the influence of the factorial variable on the resulting one is very strong;
- β = 1 – when the resulting variable varies in direct proportion to the variation of the factorial variable.

If the coefficient β < 0, the resulting variable representing earnings is independent of the number of employees.

Based on the data obtained above, we can observe in our case both positive and negative values of the coefficient β, all positive values being subunitary, which indicates a relative influence on the resultant variable Y. In cases where we observe negative values, they correspond, as can be seen from the table above, to large enterprises, and it can be concluded that there is an independent relationship between the two variables in this case. The link observed by calculating the correlation coefficient overall indicates a weak or moderate relationship from this point of view, there are secondary factors that can act on the long-term phenomenon and can show a particular influence on the identified relationship. The statistical verification of the unifactorial model is thus performed based on the Student and Durbin - Watson tests.

In the first case, the tabular value to be used is determined from the table corresponding to the Student distribution, depending on v = n - 1 degrees of freedom and probability α / 2 = 0.05 / 2 = 0.025. According to the table of values, the value tcritic = 2.262.

In most cases presented in the results table above, the calculated value of the model parameters is less than or equal to the critical value. (tα, tβ < tcritic), in which case the null hypothesis is accepted, the β estimators not being significantly different from zero. This is the case for private enterprises in particular, as this phenomenon is observed in the case of medium and large enterprises. Most employees in Romania who work in companies with less than 50 employees, are employed with a minimum wage in the economy, noting the phenomenon of "undeclared" pay. There is therefore a high share of employees employed at a minimum, the average approaching the level of the minimum wage in the economy. Its evolution in the time period 2008 - 2017 is presented in the graph below:
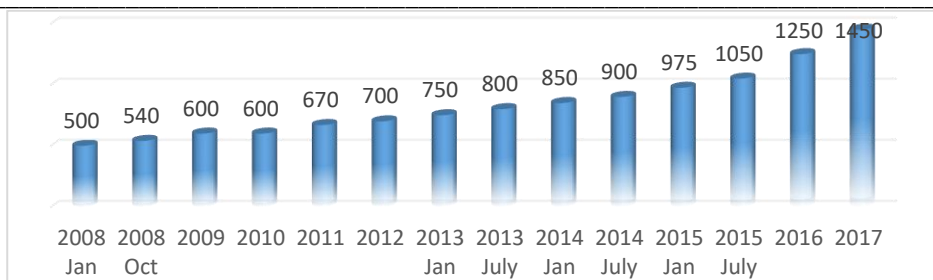
Figure 5: Evolution of the minimum wage in the economy in Romania (lei)
Source: authors 'processing, according to information provided by Manu Consulting

What we can observe according to this information is first of all an increasing evolution, there being years in which the increases took place in two different months. The level corresponding to 2017 is three times higher than that corresponding to the base year, the growth rate being illustrated in the following table:

Table 9: Minimum wage growth rate

	2008/ 2008 (Oct/Jan)	2009/ 2008	2010/ 2009	2011/ 2010	2012/ 2011	2013/ 2013 (Jul/Jan) 2013/ 2012 (Jan)	2014/ 2014 (Jul/Jan) 2014/ 2013 (Jan /Jul)	2015/ 2015 (Jul/Jan) 2015/ 2014 (Jan/Jul)	2016/ 2015 (Jul)	2017/ 2016
Growth rate	13.64/ 8%	11.11%	-	11.6%	4.48%	7.14% 6.66%	6.25% 5.88%	8.33% 7.70%	19.0%	16%

Source: authors' processing

The unifactorial model can, of course, be developed in order to obtain more accurate results, adding other influencing factors (e.g. inflation rate - fig. No. 9) or developing the analysis for a longer period of years, in order to achieve a relevant long-term analysis.
For the Durbin Watson test, two tabular values, one lower and one higher, dL and dU, are determined from the corresponding statistical tables, depending on the significance level of the test (0,05) and the number of observations (10), k being equal to 1, being a unifactorial model. In our case, the tabular values are dL = 0.88 and dU = 1.32.
From the observations introduced and the results obtained, we find that d < dL in all situations, regardless of the size class of the company or the type of employees, the hypothesis of autocorrelation of random variables is accepted, the values of the variable being dependent on each other. The model can be corrected, taking into account the influence that the guaranteed minimum wage level on the economy has on the overall evolution, as well as the influence of the legislative framework, the tax system, inflation or internal and external labour migration.

5. Conclusions

Approached from the perspective of the concept of sustainability, the Romanian labour market has only partially the characteristic of maintaining a desired trend (increasing employment and living standards of employees), there are variations over time, either due to the effects of the economic crisis (Balcar, Gottvald, 2016) (2008 - 2009), or influences of

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the structure of the internal business environment and the level of training of the workforce, or a manifestation of the effects of electoral cycles on the wage system.

From the perspective of gender differences, the elements of human capital can play an important role in explaining the pay gap. Men and women do not choose the same type of schooling and implicitly the same professions, and from the perspective of experience, women tend to be deficient due to career interruptions caused by raising children.

A common phenomenon on the Romanian labour market is the lack of concordance between the level of education of the employee and the one required by the position in the company's organigramme. Although the legislation provides for higher levels of the minimum wage for graduates, employers, in order to avoid increasing salary costs, do not provide in their organizational structure, positions that require this qualification. This reality does not stimulate young people to pursue higher education and, a situation reflected by the last position occupied by Romania in terms of the number of graduates in the age category 30-34%, only 26%, in 2017, well below the European average of 40%.

Following the research aiming at the evolution of the salary differences in the public and private sector, depending on the order of size of the enterprises, by the number of employees and by gender (male / female), the hypotheses subject to validation are:

-    Salary incomes in public enterprises are higher than in the private sector, the gaps widening over time, a hypothesis confirmed by the analysis of statistical data on net salary incomes in Romania, in the period 2008-2017;

-    Due to economies of scale and productivity increases, wages in large enterprises (over 250 employees) are higher than in SMEs. Wage differences on the level of large enterprises are insignificant between the public and private sectors. In the analysed period there is a salary gap between the two sectors, in favour of the private one, until 2017, when in the public sector there is an average net monthly salary income of 886 euros, higher than in the private sector, of 855 euros;

-    Gender discrimination from the perspective of salary income is registered in the case of all types of enterprises. This hypothesis is partially verified, with the exception of the average net salaries obtained in the public sector for medium-sized companies (50-249 employees), from 2013 to 2017, when the female / male wage ratio is super unitary;

-    The economic dimension of sustainability is determined by a priority contribution of the private sector to the generation of capital gain, and therefore a primary distribution of income with priority to this sector. This hypothesis is not verified in the case of SMEs, where the average level of the monthly net salary exceeds in the public sector the one registered in the private sector.

The analysis of salary incomes in Romania in the period after its accession to the European Union highlights the incoherence of development strategies from the perspective of the structure of companies in terms of size and public-private relationship, in which the engine of sustainable economic growth should be private investment and therefore a business environment supported by public policies.

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PUBLIC POLICIES TO SUPPORT ENTREPRENEURSHIP: DO THEY CONTRIBUTE TO STRENGTHEN SMES SECTOR?

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Abstract: *The role of entrepreneurship and private initiative in economic development and jobs creation, for the development of a dynamic and innovative small and medium enterprises (SME) sector is widely recognized in economic theory and practice. Entrepreneurship do not only contribute to productivity improvements, but it could also help finding practical solutions to social and environmental challenges, climate change, global economic or health crises. However, despite this widespread recognition, entrepreneurship relatively recently becomes a concern for the decision-makers', and in many cases the support measures are partial, difficult to understand and access, marked by bureaucracy and over-regulation, even in developed countries. Therefore, the active involvement of policy makers, the contribution of public or private support structures, education, public awareness of the benefits of entrepreneurship and small and medium-sized businesses are essential. Building policies and strategies to support entrepreneurship starts from objective characteristics, but it must be adapted to the specific conditions of each country, the profile, size and structure of the business sector in that country (or region) in order to enhance its contribution to development goals. In our article we state that public policies for entrepreneurship must find a balance between stimulating the new firms' creation, the size of existing ones and the impetus given to the sub-sector of dynamic, innovative companies, high growth-oriented. In the case of the developed countries analysed here, characterized by opportunity-driven entrepreneurship, the objectives of public policies to support entrepreneurship and SMEs should not excessively focus on setting up new companies. Rather, they must insist on creating a business-friendly environment and promoting an entrepreneurial culture, on the efficient functioning of support structures and networks, on encouraging the establishment and development of companies based on high knowledge, on strengthening and growth of the existing SMEs.*

Keywords: *entrepreneurship; SMEs; public policy support, EU.*

JEL Classification: *L26; H32; M13.*

1. Introduction

The issue of the role and conduct of public policies in supporting the business sector, and especially small and medium-sized businesses, has a long history in the literature and practice of capitalist countries. Concerns about political support granted, immediately after Second World War, for rebuilding industry, and the challenges of American corporations defined by dynamism, organization, innovation and aggressive expansion all over the world, have raised questions about the optimal size of firms, industrial structure, but also the identification of trends and initiatives necessary to be supported (Audretsch & Thurik, 2001). The fundamental policy issue confronted by the developed countries in Europe and North

America at the time was the trade-off between concentration and efficiency on the one hand, and decentralization and democracy on the other. For a long time, policies focused on strengthening public property and severer regulations in terms of competition or antitrust. Although the instruments varied from country to country, they were, in fact, manifestations of a singular political approach - how to restrict, but also to benefit from, the power of the large corporations (Audretsch & Thurik, 2001), (Audretsch, 2003).

Gradually, the SMEs enter into the attention of public policies, and some of these policies came with measures to support and protect enterprises considered to be, in the capitalist logic, inefficient enterprises, which, if left unprotected, could disappear. The establishment of the Small Business Administration (SBA) in the United States in 1953, as an independent agency of the federal government with a clear mandate to "to aid, counsel, assist and protect the interests of small business concerns, to preserve free competitive enterprise and to maintain and strengthen the overall economy of our nation" (U.S. Small Business Administration (SBA), 2021) is obviously, at least in the trend of that period, an attempt of the US administration to stop the continuous disappearance of small and medium-sized enterprises and to preserve their role in the US economy (Audretsch, 2003).

2. The reasons and role of public policies to support small and medium-sized businesses

The rationale and impetus for state involvement in supporting small and medium-sized businesses are based on several deductions and arguments, mostly empirical, and here we refer to the size and pressure of the state apparatus, the specific legislative and regulatory framework and the problem of corruption (Audretsch, 2003).

Regarding the reason of *the size and pressure of the state apparatus*, it is stated that a strong state sector is associated with an extended state ownership in the economy, and a high pressure of public spending. By default, this leads to a high taxation to cover both the expenses of the state apparatus, but also the high expenses with social insurances (unemployment aids, retirement pension, child allowances etc.). Not infrequently, the increase of such expenses can lead to a decrease in those funds initially allocated to stimulate the establishment of new companies, to tax reductions for small companies or general business incentives. This can be burdensome for certain categories of employees and for entrepreneurs, who are beginning to realize that they are paying more and more money as their business grows. This will reduce the expected profitability of the entrepreneurial activity and the interest for the expansion of the business and will determine a reorientation of the entrepreneurs to the status of employees, or even to inactivity. In other words, the mixture of these individual factors and decisions, combined with the positive or negative effect of various incentives, may lead to the conclusion that an extended state sector will reduce entrepreneurial activity. We must not forget that a powerful state will generate a diverse range of rules and regulations, institutions and bodies for business purposes, generating counter-incentives to enter entrepreneurship. Thus, the action of the institutional framework (initially, apparently well-meant) on the dynamics of firms, will therefore generate a net negative effect, discouraging the firms' creation and endangering the survival of the existing firms (Henrekson, 2007).

In the case of *the legislative framework and specific regulations*, literature has shown that the effect of regulations (formal or informal) on entrepreneurial activity is also determined by the institutional context, and disparities in entrepreneurial activity between countries or regions can be explained by the quality of support institutions (Baumol, 1990), (Baumol, 1993). Higher levels of regulation will stimulate bureaucracy, will formalize the protection of intellectual property rights and, implicitly, will reduce their efficiency, ending with a negative impact on entrepreneurship. Reciprocally, a business-oriented governmental environment that moderates bureaucracy and over-regulation, with flexible institutions supporting

entrepreneurial activities, with a governance based on transparency and trust, will positively influence the desire to set up new companies and strengthen the impact of entrepreneurship on the economy and society (North, 1994), (Baumol, 1993), (Davidsson, 1995).

Stronger regulation of the labour market, the level of the minimum wage and rules in wage negotiation, is useful and socially justified, but beyond certain limits, it also has a constraining effect on entrepreneurship and the establishment of new companies, as it restricts the freedom to contract and therefore limits possible combinations of factors of production. Henrekson (2007) states that there are reasons and evidence that such regulations (on employment, firing, minimum wage) are more harmful to smaller and more entrepreneurial employers, compared to larger firms, organized and accustomed in these procedures. Cross-border and regional comparative studies of labour market regulations on SMEs show that in some countries (e.g. the US) low regulations stimulate valuable entrepreneurial firms to grow rapidly and hire staff (keeping self-employment at relatively low levels), while in countries with a complicated regulatory environment, with high labour taxes and regulations, business development is more difficult and risky, so this firms prefer to remain smaller (Szerb, et al., 2013), (Gudici & Paleari, 2000), (Badulescu & Badulescu, 2014).

Finally, regarding *the problem of corruption*, the literature considers them as a negative factor for setting up new companies (by increasing costs and reducing initial expectations for the future of business) and, in the case of already operational companies, by reducing entrepreneurial returns. Researchers and practitioners argue that a corrupt environment generates negative side effects on entrepreneurial supply and transforms entrepreneurs (especially those with strong, market-dominant businesses) in rent-seekers, less interested in innovation, or creating new businesses. Similar to over-regulation, the negative effect of corruption seems to be greater on young, small firms than on already functioning firms, as existing entrepreneurs have acquired certain skills and routines to withstand this corrupt environment, perceived as uncertain and risky by potential entrepreneurs (Estrin, et al., 2013), (European Commission, 2017), (European Commission, 2020a), (Badulescu, 2013a), (Badulescu & Badulescu, 2014).

Some scholars differentiate between SMEs' policy, considered as "traditional", and entrepreneurial policy, which is relatively new in the public policy landscape (Audretsch, 2003). Thus, the SMEs support policy usually includes measures implemented by a public authority (central or regional) to support and promote existing SMEs, to increase their viability and economic and social impact. On the other hand, entrepreneurial policy has a broader horizon and ambitions, including those measures aimed at stimulating entrepreneurial behavior and directly influencing the level of entrepreneurial vitality in a country or region (Lundstrom & Stevenson, 2005). Thus, entrepreneurship policy includes both existing and potential entrepreneurs, and the existing stock of SMEs, focusing more on the process of change, while SMEs' policy focuses exclusively on increasing performance and strengthening the existing enterprise. Entrepreneurial policy also takes into account the framework, environmental or individual conditions associated with the decision-making process of entrepreneurs. Entrepreneurial policies have a distinct systemic feature (compared to those for SMEs), they take into account the type and relationships between organizations (firms, clusters, networks, industrial sectors) or spatial dimensions (communities, cities, regions or even a countries), as well as the interactions between these levels.

Usually, the intervention of public policies for entrepreneurship is not necessary justified the association between entrepreneurship and performance, but rather tries to mitigate three fundamental sources of market failure - network externalities, knowledge externalities and learning externalities (Audretsch, 2003).

The externalities of the network result from the fact that local proximity is essential for accessing this dissemination (spill-overs) of knowledge, and the value of an entrepreneurial firm is better highlighted by the (local) presence of other entrepreneurial firms and the formal

or informal interactions with them (Porter, 2008), (Badulescu, & Badulescu, 2012). Thus, it is very possible that certain areas, cities or regions, have a remarkable density of entrepreneurship and support structures, small and medium-sized businesses that support and influence each other, and other areas to be avoided, precisely because there is no such a critical mass of companies and entrepreneurs able to drive accelerated business development.

The externalities of knowledge are, according to Arrow (1985) often associated with knowledge, a valuable public good but with a higher degree of uncertainty. Knowledge can drive the rapid development of a company or sector, but at the same time generates a high failure rate of new companies and, implicitly, of those knowledge-based. The externalities of knowledge also include the failure of the market in the evaluation of new (potential) enterprises by private investors, banks and policy makers. Finally, the third source of market failure, the learning externalities, involves the learning effect and this is particularly valuable in regions where entrepreneurship has been relatively absent and there are no strong entrepreneurial traditions. The entrepreneurial spirit generated by existing successful enterprises and entrepreneurial employees (Bosma, et al., 2013), (World Economic Forum & GEM, 2016), (Badulescu & Badulescu, 2013b) influences other people. Some of them will find that entrepreneurship is a viable alternative to the current situation and they will be interested in setting up companies and developing entrepreneurial strategies.

Thus, the market failures, inherent in entrepreneurship, require that national, regional or local decision makers to support and promote entrepreneurial initiatives, become partners for the business sector, allowing and encouraging the establishment and development of entrepreneurial firms, creating a virtuous entrepreneurial circle, where entrepreneurs and their firms become powerful and paradigmatic models for others to emulate (Audretsch, 2003).

3. Public policies to support entrepreneurship and small and medium businesses

3.1. From control, regulation and preserving competition, to de-regulation, privatization and support to knowledge-based businesses

As we already have revealed in the previous paragraphs, since the fifth decade of the last century, public policies aimed to support SMEs moved away from the philosophy of regulation, competition and tempering the dominance of large companies, to encourage successive waves of de-regulation, privatization, and a new approach that stimulates the creation and commercialization of knowledge. Interestingly, although in the case of the first two (de-regulation and privatization), the policy-makers and a large part of influential academic circles had high expectations that they would help the small business sector, from these measures benefited (especially) large corporations. However, the SME sector benefited from the third measure, and especially businesses in the area of research, innovation and development, venture capital and new, growth-oriented enterprises in high-tech sectors.

This policy change, to encourage the establishment of new companies and to support the consolidation of existing SMEs, especially those in knowledge-based domains, to stimulate entrepreneurial behaviour through publicly funded programs, is highlighted by the adoption by the US Congress of the Small Business Innovation Research Program (SBIR) in the early 1980s, as a response to the loss of American firms' competitiveness on global markets. Without going into details about the principles of how the program works, there is convincing evidence that the SBIR program has had a positive impact on US economic performance (Lerner, 1999), (Wessner, 2000), (Audretsch, 2003) such as:

- The survival and growth rates of SBIR beneficiaries exceeded those of companies that did not receive SBIR funding;

- SBIR determined an important number of researchers from top fields (eg bio-medical sciences, ITC) to enter entrepreneurship, to try to commercialize scientific knowledge, boosting the sector of high-tech companies, based on discoveries in science and advanced technology, etc. .;
- Encourage the launch and financing of start-ups in new fields, which otherwise would not have had access to alternative sources of funding;
- A strong demonstrative effect, of emulation and encouragement of the implementation of scientific research results in practice among the scientific communities, universities and research activities.

Various measures and programs such as removing particular bottlenecks in the development and financing of new companies in high scientific research areas, creating innovation centres to support the development of technology-based small companies, research parks to promote and boost the competitiveness of a particular region, incubators and business accelerators, the provision of venture capital for research activities, entrepreneurial education of the younger generations are some of these measures (see Table 1). Shifting the profile of government business support agencies to the regional or local level, transforming them into smaller and more flexible entities, de-regulating and privatizing policies and reinterpreting competition rules, the success of many high-tech clusters that often cross countries border, are the direct result of pro-small business policies.

Table 1: Public programs to assist SMEs and improve entrepreneurial performance

The identified problem or weakness	Programs and measures	Short description	Results and comments
Access to credit	Various financing schemes and loan guarantees	SMEs without own guarantees obtain access to bank loans, the government acting as guarantor	Generally considered useful, but with little impact on the overall financing of SMEs in most countries
Access to equity financing	Different investment schemes	Tax cuts for wealthy people to encourage them to become "business angels "	Unclear effects
Market access	Public private, regional partnerships	Encouraging trade between various countries under agreements, unions (e.g. EU)	Overall satisfaction among participating companies
The burden of administrative regulation	Policies and promotion of good practices	Government actions and targets to significantly reduce administrative burdens, to simplify legislation, especially for smaller firms	The bureaucratic burdens are reduced too slowly and the reduction of some is offset by the emergence of others
Science parks	Developments and investments in research, closeness to universities	It seeks to promote and encourage groups of companies based on new technologies	Contradictory findings on the impact of these parks on the companies' performance
Co-working spaces,	Premises, facilities and services to	Provides conditions for an easier "take-off" of	Overall global recognition of the

incubators, accelerators	support new small businesses	innovative, ambitious start-ups	value and importance of these initiatives
Stimulating innovation and research and development (R&D) in small firms	Various programs to stimulate research and innovation in SMEs	Possibility of accessing funds, on a competitive basis, to stimulate additional research and development in SMEs	Contradictory findings- it seems to improve the performance of SMEs, but it is difficult to demonstrate that they lead to further R&D.
Stimulating training and developing entrepreneurial skills in small businesses	Various programs to stimulate entrepreneurial training in SMEs	Support provided by government agencies and local authorities for the training of small business owners and managers, or people starting a business	Usually, companies included in these programs have higher survival and growth rates than expected. There are also reserved opinions on their effectiveness
Entrepreneurial awareness	Various measures and programs of entrepreneurship education	Aiming to develop an awareness of enterprise and entrepreneurship in society, by incorporating entrepreneurship and business into the school' curricula and other forms of formal and informal education.	Significant political and civic support, but conventional evaluations are particularly difficult, due to long period for implementation and impact assessments

Source: Adapted by authors upon (Audretsch, 2003), (Storey, 1994), (European Commission, 2007), (European Commission, 2006), (Fayolle & Gailly, 2013), (Ratten & Usmanij, 2020), (Badulescu & Petria, 2011).

3.2. SME support policies in the European Union: The European Charter for Small Enterprises, Small Business Act and related measures

The European Commission perceives SMEs and entrepreneurship as the key to ensuring growth, innovation, jobs and social integration in the EU (Interreg Europe, 2016), working closely with Member States on developing SME-friendly policies, monitoring progress in their implementation and sharing best practices.

Growing and strengthening the small and medium-sized enterprises (SMEs) sector is a strong goal on the political and economic agenda of the European Union (EU). SMEs are the backbone of the European economy, accounting for 99.8% of all companies in the non-financial business sector (approximative 25 million SMEs), generating more than EUR 3.7 billion in added value (ie almost 57% of the total added value achieved by the EU business sector) and employing almost 90 million people (67% of total employment in the EU business sector) in 2019 (European Commission, 2019a).

The European Charter for Small Enterprises

The beginning of the joint EU's policy for SMEs is linked to the European Charter for Small Enterprises. The first step taken by the European institutions to develop a common SME

policy took place with the adoption of the European Charter for Small Enterprises (European Commission, 2000) by EU leaders at Feira European Council on 19-20 June 2000. The Charter calls upon Member States and the Commission to take action to support and encourage small enterprises in ten key areas: Education and training for entrepreneurship; Cheaper and faster start-up; Better legislation and regulation; Availability of skills; Improving online access; Getting more out of the Single Market; Taxation and financial matters; Strengthening the technological capacity of small enterprises; Making use of successful e-business models and developing top-class small business support; Developing stronger, more effective representation of small enterprises' interests at Union and national level (European Commission, 2000).

Small Business Act (SBA)
The Small Business Act (SBA) of 2008 defined a general framework of EU SME policy and established the "think small first" principle (European Commission, 2008). The SBA has launched ten principles with a variety of measures through which the EU intends to strengthen SMEs, from facilitating financing, better access to public procurement procedures, to encouraging start-ups and women's entrepreneurship. In addition to its own actions, the European Commission has also made suggestions on how Member States can implement the principles.
The update of this document in 2011, after the economic crisis, by re-evaluating the real effect of the SBA in promoting SMEs, demonstrated the need for a revised policy approach to help companies become stronger, more flexible and faster to respond to global challenges. contemporary. This was confirmed by the conclusions of the Report on the Public Consultation on the "New SME Policy" of 2015 (European Commission, 2015b) which followed other open consultations launched by the European Commission in 2014. According to this Report, a special attention in 6 priority areas: 1. Reducing the burden on SMEs and simplifying bureaucracy, by creating a business-friendly environment; 2. Promoting entrepreneurship; 3. Improving market access and internationalization; 4. Facilitating access to finance; 5. Supporting competitiveness and innovation for, and within SMEs; 6. Providing support networks and information for SMEs. Although in recent years (after 2015) the constant challenges of the business environment, political and social pressures recall the need to revise the SBA, the European Commission's efforts to invigorate and strengthen the private sector have not materialized in a new document, and the revision seems to be postponed for an unknown time in the future.

The SME Performance Review
According to The SME Policy of the European Union Report (Interreg Europe, 2016), the SME performance analysis is one of the main tools that the European Commission uses to monitor and evaluate countries' progress in implementing the SBA, providing information on the performance of SMEs in EU Member States and partner countries (Interreg Europe, 2016)

Entrepreneurship Action Plan 2020
The Entrepreneurship 2020 Action Plan aims to unleash Europe's entrepreneurial potential and proposes three main areas of intervention aimed at improving entrepreneurship education and supporting business creation, by strengthen the framework conditions for entrepreneurs by removing existing structural barriers, supporting entrepreneurs in critical stages of the business life cycle and disseminating an entrepreneurial culture in Europe to stimulate the emergence of a new generation of entrepreneurs (Interreg Europe , 2016).

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European SME Week

European SME Week is a pan-European campaign coordinated by the European Commission. It aims to promote entrepreneurship in Europe through a variety of events across Europe that support information entrepreneurs and encourage as many people as possible to enter the business (Interreg Europe, 2016). Stakeholder feedback has confirmed that, while progress has been made, European entrepreneurs are still not receiving adequate recognition, there are still a small number of people seriously considering becoming entrepreneurs and there is a continuing need to promote entrepreneurship to encourage more people to start their own businesses. Other views insist that more needs to be done to include more real entrepreneurs and SME managers and owners for participants, as well as to ensure a more balanced participation of SME organizations in all Member States, improving access events, attractiveness and updating of the media, so that it is an informative and useful resource to expand its audience (European Commission, 2019).

Enterprise Europe Network (EEN)

Generally, SMEs operate mainly at regional and national level and quite a few are engaged in cross-border cooperation within the EU or in international affairs (European Commission, 2010), (European Commission, 2020b). A good example and a measure taken in this regard is the Enterprise Europe Network (European Commission, 2020c), which helps European SMEs to develop their business in new markets and to supply or license new technologies, to make the most of opportunities EU business and more. With 600 partner organizations in over 60 countries, the Enterprise Europe Network is the largest SME support network in the world (Interreg Europe, 2016). Organized as a one-stop shop able to meet the various requests for information and cooperation, EEN is based on the involvement of partner organizations that combine international business expertise with local knowledge to help entrepreneurs bring their innovation to European and international markets. It also provides assistance and information on market access, potential legal obstacles and ways to prevent and overcome them, as well as identifying potential business partners across Europe. According to EEN data, over 85% of SME users are satisfied with its advice. EEN organizes 70,000 international business meetings each year, but no information is provided on the results of these events in terms of practical support for SMEs (European Commission, 2020c). However, the idea of the effectiveness and wide recognition of EEN should be questioned by the data from the recent Flash Eurobarometer survey on the internationalization of SMEs (European Commission, 2015a) according to which only 8% of EU SMEs have heard of the Enterprise Europe Network, while 92% stated that they had never heard of such a thing.

4. Conclusion

In the first part of this article, we addressed the theoretical and pragmatic reasons and arguments for supporting entrepreneurship and small and medium business, from the size and pressure of the state apparatus, the legislative framework and the impact of corruption, to the more sophisticated arguments of negative externalities generated by market failure this sector. We then reviewed the main steps and measures taken in developed countries (and especially in the US and the European Union) to support SMEs in several specific areas such as simplification of legislation and administrative procedures, promotion of entrepreneurship, internationalization of SMEs, providing information and support networks, etc.

We have found there are claims and arguments that a new revision of these policies (such as the revision of the SBA at EU level) is advisable and even imperative, but this process seems to be delayed. This generates confusion and disappointment on the part of the social partners and business organizations, which anticipate a decline in the focus of decision-makers on the SME sector in general, or dynamic, growth-oriented start-ups, in particular.

Our brief analysis also highlights the need to understand how public policies and actions can best recognize and respond to the specific needs of the various subgroups included in the SME category, identifying inequalities in access to SME promotion programs (related to size, location or sector of activity, or the existence of significant transaction costs in accessing support). The right understanding can substantiate recommendations and proposals for improving certain aspects of SME policies and their overall effectiveness; how SME policies and measures could be better targeted and better designed to fit and meet the specific needs of entrepreneurs and companies of different types and sizes that fall within the definition of SMEs, eliminating barriers to their growth.

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SMART CITIES AND THE EUROPEAN VISION

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Abstract: *Cities are one of the main factors influencing the economic development and prosperity of societies. Smart cities, fueled by innovation and the Internet of Things, are built on three pillars - improving the residents' quality of life, business competitiveness, and ensuring a sustainable environment. When applied within the six urban areas: economy, mobility, security, education, living conditions, and environment, cities can much faster make the transition to smart cities. The term smart city is often associated with the desire for accelerated modernization of various spatial and urban social interactions, the term "smart city" often being fuelled by technological developments. Proof of this are the terms used to define the same concept: "digital city", "e-communities", "intelligent city", "e-City", "wired city". However, a smart city is called upon to respond to the needs of cities and societies alike to approach challenges in a novel and creative manner. The motivations for transforming existing cities into smart ones are obvious and straightforward. They come on one hand, from the threats of current demographic phenomena (population growth, migration, public health, safety, and living conditions), and also from the opportunities of solutions that can be brought by technological developments and innovation, transformations of generations (new "Digital" generations), and civic involvement (participation and inclusion) in the management of modern cities. Thus, the meaning associated to the name of the smart city does not only overlap with the idea of modernization and expansion, but also wants to combine, simultaneously, competitiveness and sustainable urban development. In the present study, by building upon a European vision as regards the development of smart cities, we have attempted to build an image of the European envisioned smart city, which is to be planned out and sought after through a series of strategic partnerships for innovation. Not only is the European vision detailed, but Romanian specific urban development and smart city tendencies shall also be briefly analyzed in this paper.*

Keywords: *urban development; smart; digitalization; sustainability.*

JEL Classification: *O18; Q56; R11.*

1. Introduction

Cities are the main factors in the economic development and prosperity of society, probably an expression of what Paul Krugman called *concentration,* as the most striking feature of the geography of economic activity [...], economic production, is remarkably concentrated in space (Krugman, 1991:5). Cities are the culmination of public creativity on a variety of issues - from economic opportunities and the provision of quality education, to solving traffic, jobs, tax cuts, increasing safety, and creating a healthy and sustainable environment for the new generations. A smart city, fuelled by innovation and the Internet of Things, is built on

three pillars - improving the residents' quality of life, business competitiveness, and ensuring a sustainable environment. Applied within the six urban areas: economy, mobility, security, education, living conditions, and environment, they can give meaning to this considerable effort.

In the present study, informed by the European vision, we aimed to build an image of the smart city envisioned at the European level, planned out and sought after through a series of strategic partnerships for innovation, and stop briefly to evaluate the experiences of Romania in embodying smart urbanization. We started from the idea that smart city is not a process per se or an end point for the efforts of governmental and local authorities, specialized companies or citizens. Cities do not become smart by itself, but rather by capitalizing chances of development where technology and innovation primarily serve citizens.

Understanding the trends and transformations that can lead to this "smart" option of urban development, constraints, challenges, potential, threats, and opportunities can ensure the successful commitment and initiatives of the European Union and, respectively, of the Romanian authorities. Last but not least, a smart city is also the result of the efforts coming from cities' associations, civil society, businesses, academia, and citizens involved in creating smart, sustainable, and high-performance cities.

2. Smart City – concept and context boundaries

The term smart city is often associated with the desire for accelerated modernization of space and urban social interactions, which is fuelled by technological developments, especially of Information and Communications Technologies. Proof of this are the terms used to define the same concept: "digital city", "e-communities", "intelligent city", "e-City", "wired city". However, a smart city is called upon to respond to the need for cities to approach creatively and differently the challenges, be they novel, caused by globalization and integration (population growth, resource consumption, pollution, climate change, limited natural resources) be they old, unresolved or partially resolved such as congestion, waste management, utility network, public safety, etc. The meaning of the smart city does not only overlap with the idea of modernization and expansion, but also wants to combine, simultaneously, competitiveness and sustainable urban development (Giffinger et al., 2007). In other words, a smart city must use to its advantage, in a creative and revolutionary way, the offer and the characteristics of modernization, technology, and digital skills.

2.1.   Heading for the Smart City
The motivations for transforming existing cities into smart ones are obvious. They come, on one hand, from the threats of current demographic phenomena - population growth, migration, public health, safety living conditions, sustainable development and mitigating pollution (Badulescu et al., 2019), but also from the possibilities of a solution that can be brought by the technological developments and innovation, transformations of generations (new "Digital" generations), and civic involvement (participation and inclusion) in the management of modern cities.

The growth of the world's urban population is the most important challenge facing urban managers and planners, as well as the citizens of the cities. The proportion of the world's urban population will increase from 55% in 2018 (around 4.2 billion people) to 68% by 2050 (see Figure 1).
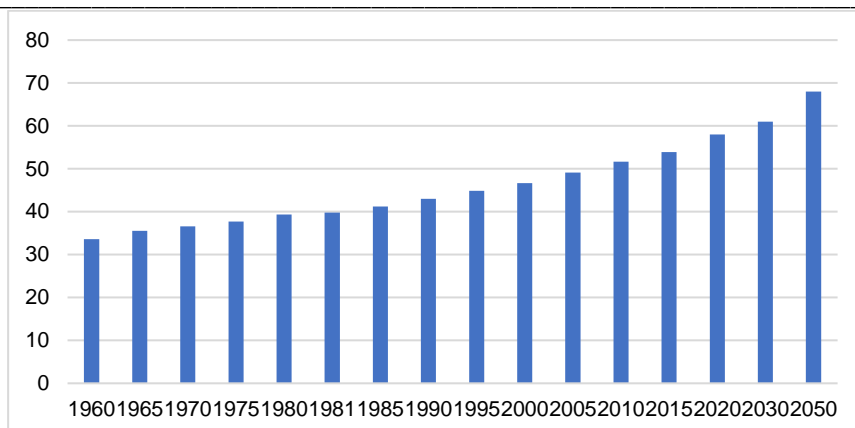
Figure 1: Evolution of the world's urban population (% of total population) between 1960 and 2050

Source: World Bank, Urban Population, https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS, (2019)

Obs. For 2020 estimation, for 2030 and 2050 forecasts

In other words, in these conditions of global population's growth, practically speaking, in about three decades, the urban population of the world will almost double. By 2100, about 85% of the world's population will live in cities, with the urban population growing from less than 1 billion in 1950 to 9 billion by 2100 (European Commission, 2019). In 2018, the most urbanized regions were: North America (82%), Latin America and the Caribbean (81%), Europe (74%) and Oceania (68%). Although Asia has a level of urbanization of only 49%, it hosts 54% of the world's urban population. Europe's level of urbanization will increase from about 73% today, to about 78% in 2025 and to 83.7% in 2050.

In the table below we presented comparatively (years interval 1990 - 2016), the size of the urban population, the percentage of the total population and the growth rate, as well as the situation of large urban agglomerations. The situation is related to the major geographical regions of the world, respectively depending on the level of development of that region, according to the World Bank methodology.

Table 1: Situation of the urban population, by major geographical regions and level of economic development, between 1990 and 2016 (mil. persons and %)

	Urban population					Population in urban agglomerations of more than 1 million		Population in the largest city	
	Millions		% of total population		% growth	% of total population		% of urban population	
	1990	2016	1990	2016	2016	1990	2016	1990	2016
World	2272	4037	43	54	2,00	18	24	17	16
East Asia & Pacific	619	1318	34	57	2.30			17	12
Europe & Central Asia	568	653	68	72	0.70	18	20	15	17
Latin America & Caribbean	312	504	71	80	1.30	34	38	25	23
Middle East & North Africa	140	281	55	65	2.40	23	26	28	26

North America	209	294	75	82	1.00	42	46	10	8
South Asia	284	587	25	33	2.50	11	15	10	11
Sub-Saharan Africa	139	400	27	39	4.0	12	15	29	27
Low income	77	212	23	32	3.90	10	12	35	31
Lower middle income	559	1164	30	40	2.60	12	16	17	16
Upper middle income	890	1690	43	65	2.10	17	29	14	12
High income	746	970	74	81	0.80	..	..	20	19

Source: World Bank, 3.12. World Development Indicators: Urbanization, available at http://wdi.worldbank.org/table/3.12#

Urban centres/cities currently produce almost 80% of the world's carbon emissions and account for most of the world's more than 2 billion cars. Cities lose, through inefficient and used networks, about 50% of the water supply, and shopping malls and residential buildings consume about 1/3 of the world's energy (IBM, 2012).

According to United Nations Development Programme (UNDP), the rapid growth of cities - a result of population growth and increasing migration - has led to a boom that has determined the creation of mega-cities (see Table 1), especially in developing countries, slums becoming a significant feature of urban life. Thus, in UNDP's Goal 11: Sustainable cities and communities, sustained efforts are needed to create sustainable cities, with career and business opportunities, safe and affordable housing, and to build resilient societies and economies. They can only be achieved with investments in public transport, ecological and safe public spaces, a participatory and inclusive urban management planning (United Nations Development Programme, 2020).

However, we must not interpret cities only through the challenges of congestion, waste management, degradation of living conditions, or the uncontrolled expansion of a slum-type urbanization. The economic power of cities is impressive (OECD, 2015) because it is also here that the most important resources are found (material, social or intellectual) which can be employed in finding solutions to the problems listed above. OECD studies show that the world's cities generate 80% of all economic growth and have a huge potential to implement and develop modern technologies and infrastructure that make better use of resources. Thus, with each doubling of the population size, the level of productivity of a city increases by 2-5%, due to better distribution of labour, education systems, the stimulation of entrepreneurship, and the spreading of ideas (OECD, 2015). Cities are beginning to realize that problems can only be solved by involving high-tech promoters and through civic participation - they are beginning to partner with private corporations such as IBM, Cisco, GE, and Siemens to collect, analyse and use data to improve decision-making (European Commission, 2019).

It is relatively difficult to estimate how many cities can be considered (sufficiently) smart, as long as a reference point is not clearly defined, i.e. a minimum number of implemented projects or the size of the elements included. However, according to some estimates, in 2017 there were over 250 smart city projects in 178 cities around the world (European Commission, 2019). Among them, Europe is the best performing geographical area, with 12 cities ranked among the top 25 smart cities according to IESE "Cities in Motion Index" (Berrone et al., 2019). And for the future, Europe's ambition is remarkable - it aims to have more than 300 smart cities by 2020-2021 and plans the largest number of investments in smart city projects globally. But also other countries, such as countries in Asia (China and India in particular), Africa or Latin America, plan to develop or even build about 200 smart cities by 2022-2025, with an impact on a population of almost 2 billion people. In economic terms, this means a huge market, which is expected to exceed 2 trillion dollars by 2025.

The market for "smart" equipment and applications has a huge growth potential, being estimated for 2020 at over 1,000 billion dollars. Most IT companies have adjusted their research / development strategies to meet the challenges of the "smart" world. Large IT, telecommunications and energy companies such as IBM, Cisco, Siemens, Hitachi, Toshiba, Schneider Electric, General Electric, Oracle, Microsoft (and the list may go on), have been involved, with huge investments, in the development of applications and equipment that are necessary for this global transformation (Pușcașu, 2016). These companies' involvement can be a basis and an engine for future economic growth in a model much closer to the goals of sustainability and environmental protection. Concepts such as sustainability and quality of life now prevail over other indices and objectives, and this means that cities need to start thinking and planning how to be closer to the citizens, more environmentally friendly, how to rationally use the resources they have and generate income, and must do all these, simultaneously (Pușcașu, 2016).

2.2. Framing the Smart City concept
Besides the rationale on the development of smart cities when looking at the opportunities to be embraced and challenges to be faced, a clear conceptualization of the smart city is needed to build upon. Against a backdrop of a clearly framed concept, proper planning and evaluation can be conducted.

The term smart city is quite ambiguous due to the very wide area of fields it refers to (Vrabie and Dumitrascu, 2018); there is not yet a definition that includes all aspects of a smart city (Russo et al., 2014) and, implicitly, we cannot talk about similar approaches of cities on their way to becoming smart.

According to Russo et al. (2014) the first use of the term smart city appears in 2007, in the work of Giffinger et al., on the Ranking of European medium-sized cities (Giffinger et al., 2007). It referred to the creation and connection of human capital, social capital, and information and communication technology (IT&C) infrastructure, with the aim of generating greater and more sustainable urban development as well as a better quality of life. In 2008, Hollands (2008) considered that smart cities use network infrastructure to improve economic and political efficiency, while enabling social, cultural and urban development. In other words, "a city can be called "smart" when investments in human, social capital, traditional and modern communication infrastructure fuel sustainable economic growth and a high quality of life, with wise management of natural resources, through participatory governance" (Schaffers et al., 2011; Russo et al., 2014).

A smart city can also be understood and defined in terms of system. Smart cities should be considered as systems of systems, marked by opportunities for the introduction of digital systems, intelligent responsiveness and optimization at all levels of system integration (William, 2013). However, smart city developers must take into account local communities, their pre-existing relationships with the urban place and realize that technology also has limits, and sometimes it does not fit on the personal or emotional space of the city. In other words, Smartness is a means to an end - improving the quality of urban life (Halegoua, 2020). The British Standards Institute (BSI) defines a smart city as an "efficient integration of physical, digital and human systems to build the environment necessary for the sustainable, prosperous and inclusive development of the future of its citizens" (British Standards Institution (BSI), 2014). CISCO sees smart cities as entities that adopt "scalable solutions that take into account the benefits of information and communication technology (IT&C) to increase efficiency, reduce costs and improve quality of life" (Falconer and Mitchell, 2012).

Nevertheless, the concept and process of transforming urban agglomerations into smart cities is not without its critics and ignoring them or sending them to a register of frustrations or maladaptation seems to be a wrong and even dangerous action. Thus, according to Michael McGuire (2018), the "smart city" is a "hyper-spatial" city in which the social world is

not only connected, but hyper-connected. This means that the risks they generate are not just those of an everyday physical space, but dangers with multidimensional properties, far exceeding those associated with mass dataveillance, or the hacking of a home hub by tech-savvy burglars. When citizens are multi-interconnected, the emerging system risks generating debilitation as much as facilitation, deformation rather than information, and insecurity rather than security (McGuire, 2018).

The risk of a stronger separation of urban space from the rural one, concentration of power and opportunities and educational segregation is also captured by John Mock in the suggestive phrase Smart City — Stupid Countryside, an alarm signal and a call to wisdom and balance (Mock, 2016). For Bruce Sterling, the term "smart city" is interesting, but it's not important enough because no one defines it. "Smart" seems to be a great political label, used by a modern alliance of left-wing urban planners and technology industrialists. It is rude and arrogant, because to consider someone "smart" just because is involved in the development of urban facilities or uses some applications means to make real entrepreneurs and innovators stupid or limited. For this author, the cities of the future will not be "smarter" or better designed, fair, clean, green, sustainable, safe, healthy, accessible or resilient, nor will they be based on high values of freedom, equality or fraternity. The smart city of the future will belong to the internet, the mobile cloud and a multitude of strange gadgets promoted by public administrators, largely for the sake of making cities more attractive to capital (Sterling, 2018). Understanding the threats and tempering the excesses, adapting the process so as to avoid or diminish unfavorable situations or dangers indicated by serious but reserved researchers regarding smart city solutions as a panacea for future development, seems the wisest philosophy and action.

3. Smart City and the EU paradigm

The journey to create smart cities and intelligent city ecosystems throughout Europe has long been an objective of European Commission. Its initiatives recognize the need for an integrated and coordinated approach to support policy making, both locally and at European level, to help understand application of advanced technologies and the opportunities they uncover, to present a design of a flexible, future-proof, European smart city.

3.1. The European vision for Smart Cities
The European Parliament study on smart cities emphasizes that a smart city is made up not only of components but also of people and ensuring the participation of citizens and relevant stakeholders in Smart City is another success factor (European Parliament, 2014). The same study also highlights the advantages and disadvantages of either increasing coordination (top-down approach) or increasing the opportunity for people to participate directly (bottom-up approach).

According to European Commission "a smart city is a place where traditional networks and services are made more efficient with the use of digital and telecommunication technologies for the benefit of its inhabitants and business" (European Commission, 2018). A smart city is a place where traditional networks and services are streamlined through the use of digital and telecommunications technologies, for the benefit of its inhabitants and businesses. In other words, such a city aims to make the most of information and communication technologies (IT&C) for better use of resources and with less harmful emissions. It can do this through smarter urban transport networks, modern water supply equipment and systems, public lighting, building heating and, last but not least, waste disposal (see Figure 2). A smart city is served by an interactive and receptive administration, ensures the safety and comfort of the citizen in public spaces and provides facilities and resolution to the needs of all age groups, especially children and the elderly.

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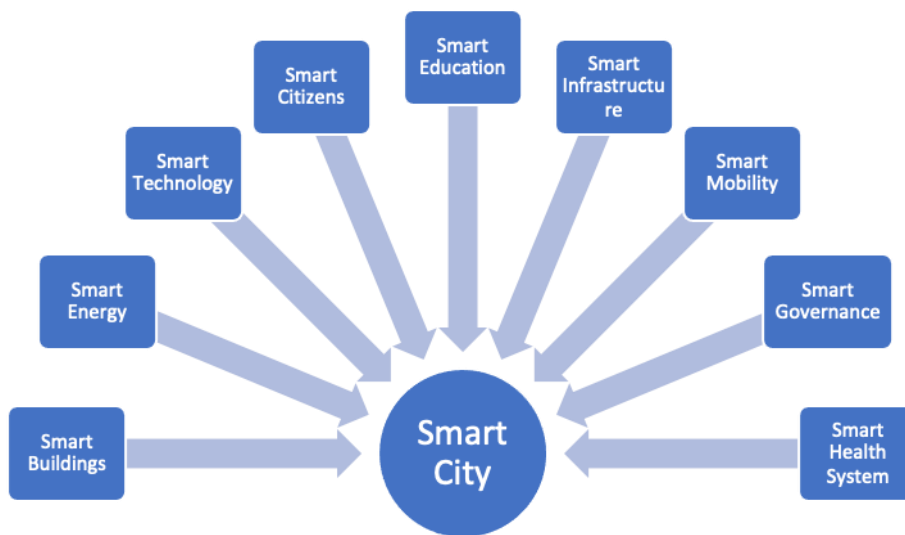
Figure 2: What defines a smart city?
Source: authors' elaboration

In Europe, the development of Smart Cities has two main actors: the cities themselves (especially the capitals of the member countries) and the European Union (as an institutional construction).

The study Mapping Smart Cities in the EU (European Parliament, 2014) details the role of the EU in this process and provides a comprehensive picture of the current situation in the European Union and some case studies of advanced cities in this regard (Amsterdam, Helsinki, Barcelona, Copenhagen, Manchester, Vienna). In 2015, the European Economic and Social Committee (EESC) adopted a document laying the foundations for a new strategy for the development and support of Smart City projects, called "Smart cities as a driver of a new European industrial policy" (European Economic and Social Committee (EESC), 2015). In order to support the development of smart cities across the EU, the EESC upholds supporting investment in such projects with existing public funds, European, national and regional funds, as well as by exploiting the opportunities offered by the European Fund for Strategic Investments (EFSI).

3.2. Partnering for innovation

To facilitate the process, the European Innovation Partnership on Smart Cities and Communities (EIP-SCC) has been set up, bringing together cities, industries and citizens, with the aim of improving the quality of urban life through more sustainable, integrated solutions (through applied innovation, better planning, more participatory approach, better energy efficiency, better transport solutions, smart use of IT&C, etc.).

The European Innovation Partnership on Smart Cities and Communities (EIP-SCC) is an initiative supported by the European Commission that brings together cities, industries, small businesses (SME's), banks, research and, of course, citizens, to improve urban life through more sustainable integrated solutions. The partnership between key areas such as energy, transport and information and communication technologies (IT&C) aims to catalyse progress in these closely related areas and provide new interdisciplinary opportunities to improve services that reduce energy and resource consumption (See Figure 3). The partnership includes applied innovation, better planning, a more participatory approach,

greater energy efficiency, better transport solutions, smart use of information and communication technologies (IT&C), etc. (European Commission, 2018).
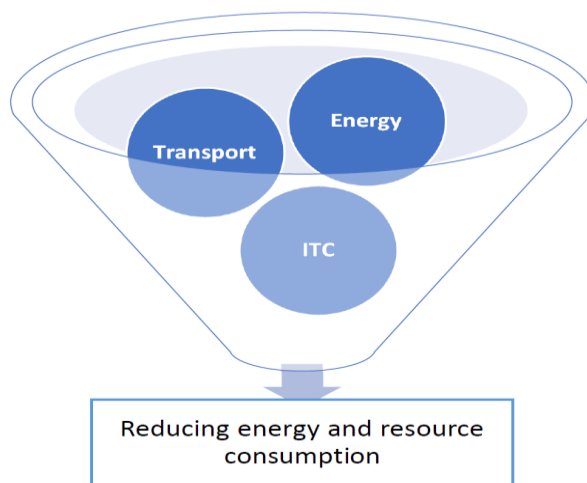
Figure 3: European innovation partnership on smart cities and communities (EIP-SCC) - energy, transport and ITC to reduce energy and resource consumption
Source: Authors' elaboration based on European Innovation Partnership on Smart Cities and Communities (EIP-SCC)

The priorities of the partnership are sustainable urban mobility; sustainable districts and built environment; integrated infrastructures and processes in energy; information and communication technologies and transport; citizen focus; policy and regulation; integrated planning and management; knowledge sharing; open data governance; Standards; business models, procurement and funding (European Commission, 2018).
In addition to institutional initiatives, there is a lucrative online platform, Smart Cities in Europe, which provides training sessions, a roadmap, presents challenges, as well as good practices (HVB Communicatie Amsterdam, 2017), (SmartCityPlatform, 2018).

4. Romania and the smart steps undertaken

One of the first official documents attesting the concerns and clear orientation of government policies towards the digitalization of public administration, and implicitly towards smart cities, can be considered to be the National Research, Development and Innovation Strategy for 2014-2020 of the Romanian Government, published in October 2014 (Guvernul României, 2014). It contains, in the section Innovative solutions for the public sector, elements that can undoubtedly be considered the first guidelines and commitments in this field. Also, in 2014, the National Strategy on the Digital Agenda for Romania was adopted: Digital Agenda 2014-2020 for Romania (MCSI, 2014), and for its implementation, the Agency for the Digital Agenda of Romania was established (Pușcașu, 2016:12).
The Executive Unit for Financing Higher Education, Research, Development and Innovation (UEFISCDI), a public institution subordinated to the Ministry of National Education, is also involved, by conducting studies and coordinating, from an administrative point of view, some programs and subprograms from National Plan for Research, Development, Innovation, in the smart city area.

Finally, in December 2016, the Ministry of Communications and Information Society (MCSI) launched the Smart City Guide for Romania – Smart Cities for Smart Communities (MCSI, 2016), which summarizes MCSI's vision on the use of "smart" technologies in the lives of human communities, for the purpose of sustainable development of the latter, in harmony with nature and the environment. Through this guide, MCSI aims to "stimulate the use of innovative technologies with a positive impact on the quality of the life of citizens, environmental protection, business development and sustainable development of local communities and society in general" (MCSI, 2016:4).

Of course, there are other initiatives, regulations and guidelines issued by government authorities, official bodies, and public scientific institutions, which outline government efforts in this area of digitalization of public administration and, implicitly, in the field of smart cities. However, they would remain only decisions with partial or non-integrated implementation, if this picture lacked private initiatives (companies and non-governmental organizations), citizens, associations committed to implementing dedicated solutions and, of course, cities and associations of cities determined to become (or at least to start becoming) smart.

Thus, an associative structure that also provides a lucrative online platform is the Romanian Association for Smart City and Mobility (2019). This portal is a good starting point for any local public authority and provides an overview of the applicability of digital technologies in everyday life, to increase the citizens' quality of life as well as the efficiency of resource consumption. Another Romanian online platform is Smart Cities of Romania (2019), which proposes a Smart National Strategy for Smart Cities in Romania and an Incubator for Public Administrations, Research Institutions and Private Initiatives.

The business environment is represented by numerous multinational companies and leaders of the Romanian market that propose various "smart" solutions and initiatives: IBM, ZTE, Huawei, Luxten, NEC, Siemens, TeamNet, Bosch, Orange, Telekom, Cisco, UTI Group, Vodafone and many others (Pușcașu, 2016).

It should be emphasized here that an insufficiently valued and exploited resource is represented by the academic environment - Polytechnic University of Bucharest, Polytechnic University of Timisoara, SNSPA, Technical University of Cluj Napoca, Babeș-Bolyai University of Cluj-Napoca, University of Oradea being just some of the higher education institutions that are very active in this field. Their involvement is not only theoretical - through courses, studies, articles, conferences in these fields, which bring together experts, researchers, public decision makers - but also through people interested, especially the young generation, in extremely thought-provoking and challenging debates for the future of the cities and the citizens' quality of life. The academic environment is also involved in very practical ways, through the development and implementation of smart solutions adapted to urban agglomerations, as well as through the implementation of solid projects (the vast majority with EU and national funding), often in cooperation with local public authorities (Badulescu et al, 2015). These projects take into account either the urban environment in which they are located (streamlining local public transport, energy and water consumption, reservation systems, etc.), or their own developments in the university micro-cosmos (of a smart-campus type).

5. Conclusions

The term smart city is often associated with the desire for accelerated modernization of space and urban social interactions, especially based on Information and Communications Technologies. There are several concepts covering, more or less, the same meaning: "digital city", "e-communities", "intelligent city", "e-City", "wired city". However, a smart city is called upon to respond to the need for cities to approach creatively and differently the challenges caused by globalization and integration (population growth, resource

consumption, pollution, climate change, limited natural resources. A smart isn't just a place based on modernization and ITC expansion, but an area who creatively combine, at the same time, competitiveness with sustainable urban development, open to cultural exchange, cooperation and tourism (Badulescu et al., 2014; Trip and Badulescu, 2020). In other words, a smart city must use to its advantage, in a creative and revolutionary way, the offer and the characteristics of modernization, technology and digital skills.

European Union has long been sustaining a vision for a smart urbanization, mobilising political leadership for adoption of digital transformation strategies and roadmaps, engaging citizens in shaping the city vision and strategy, partnering for innovation and creating vibrant markets for cutting-edge technology solution, upskilling people for the job market of the future. As we have seen, given the speed at which transformation take place, in proves vital for each and every city to strive to achieve the status of smart city as fast as they can. Another important aspect which has been discussed refers to the performance or development of particular region. Europe is the best performing geographical area, with 12 cities ranked among the top 25 smart cities according to IESE "Cities in Motion Index" (Berrone, et al., 2019). Differences still exist between the various European regions and cities, but constant collaboration between the public and the private sector will lead to increased efforts towards transforming cities into truly smart ones.

Even though there is no unified definition as to what makes a city truly smart, in the situation of Romania, we have seen that numerous steps are being taken by various local government throughout the country in order to digitize cities, to make them better adaptable at and for globalization trends, to involve citizens in the decision making process, to transform both the public and private sector from a technological standpoint, and to attract change agents/individuals into residing, moving, evolving and developing in these respective cities. Given that there are some disparities throughout the country in terms of how many cities are smart (in comparison to the cities that still strive to obtain this tile) and even though there still some challenges left, the effort undertaken by Romania as an European country and by the local government in this direction clearly points at numerous benefits that are still to come and which will be achieved by cities that concerns themselves in becoming smart.

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A SYNOPSIS OF ROMANIA'S SMART CITIES INNITIATIVES

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Abstract: *The term smart city is often associated with the desire for accelerated modernization of space and urban social interactions, especially based on Information and Communications Technologies. Smart cities are creative and sustainable areas that bring improvements on the quality of life, a friendlier environment and where the prospects of/for economic development are stronger. Such cities are to be considered as the sum of the various improvements in urban infrastructure, the quality of services provided to citizens, the operational costs of public administration. Romania has several key cities that have begun their pivot from regular and only digitized cities, to smart cities. According to information from the Romanian Smart City Association (ARSC), in 2018, at Romanian national level, 24 cities could be considered smart, the following cities being most visible in terms of how many projects have been undertaken so as to develop a smart city: Alba Iulia city has 60 such projects, Cluj-Napoca city has 10, Arad has 9, Sibiu and Oradea each have 8 projects, and Bucharest has started six such projects. At 2020 level, we notice an increase in the number of projects in the following way: Alba-Iulia now has 106 projects, Cluj-Napoca has 54 projects, Timisoara 26, Arad and Iasi have each 19 projects, Brasov and Bucuresti (Sector 4) have 18 projects each, Oradea 17, Sibiu 15, and Piatra Neamț 15 projects. The main areas of interest being Smart Mobility, Smart Governance, Smart Living, Smart Economy, Smart Environment, and Smart People. Having set goals of cutting energy costs by 30% in the field of public transportation and an increase of 45% in terms of innovation products that are to be sourced locally, the city of Oradea has attracted project worth 369 million euros, and this entire sum has been achieved through EU funded grants.*

Keywords: *urban development; smart; digitalization; public administration; Romania; Oradea.*

JEL Classification: *H83; O18; Q56; R11.*

1. Introduction

The involvement of local government leaders is essential for the success of the process of transforming a city into a smart one. They must act so that the future smart city is not a city "surrendered" to and led by large technology companies, with just a little involvement from citizens who are controlled and isolated within the cities. Even if the pragmatic goal of a smart city is to improve the quality of urban life, that city must be a lively, sustainable, inclusive, and interesting place to live and work in, achieved through the civic involvement of its inhabitants. The municipality and the local leaders need to engage in extensive community mobilization, communicating to citizens not only the future benefits but also the costs (financial, organizational, comfort), profitability of projects, efficiency gains and temporary interruptions of services, technological benefits and the problems related to data

security etc. Costs, expenditures, financing options, public-private partnerships are other areas that need to be well managed and brought to the attention of citizens, to take advantage of emerging technologies.

Any integrative initiative taken towards achieving the smart city status must consider the milestones achieved so far, the European blueprint with its recommendations, relevant proposals and strategic partnerships available, so that it can best consolidate the smart city venture. Therefore, in this paper, after briefly discussing the main perspectives on smart city and smart administration, we mentioned the commitment and the guidance offered by the European Union to reach the status of a smart city, then we aimed to build an image of the smart city within the experiences of Romania and zoomed in on the city of Oradea and its comprehensive smart city enterprise. The all-around evaluation of Oradea's route to smartness incorporated analyses of its strategies, the functional areas targeted, the projects incorporated by each functional area, the funding available for smart transformation and the implementation stages of current projects, all these for highlighting important and relevant recommendations for future smart administration.

2. Smart city, smart administration. A brief literature review

Although research on the topic of smart cities tends to be relatively new in nature, literature on the topic is rich, diverse, and ever so growing.

Meijer and Rodriguez Bolivar (2016) notice a difference between Richard Florida's views about the global (external) competition of creative cities (Florida, 2002), and the vision of the competition for the improvement of life inside cities, promoted by Charles Landry (Landry, 2006). According to Lee et al. (2014) a smart city is a creative and sustainable area that improves the quality of life, a friendlier environment and where the prospects of/for economic development are stronger (Lee et al., 2014). When referring to a city as being "smart", we must take it as representing the sum of the various improvements in urban infrastructure, the quality of services provided to citizens, the operational costs of public administration (Zanella et al., 2014), or, to regard it as an interaction of "functional areas" such as Smart Mobility, Smart Living, Smart Governance, Smart Economy, Smart Environment, Smart People (Caragliu et al., 2011; Winkowska et al., 2019).

For Arroub et al. (2016) a smart city is in a likelihood a reality we are heading towards, but more importantly, it is a promising vision of the future, in which cities will progress to improve the wellbeing of both citizens and companies, by offering secure, affordable and sustainable spaces. However, the authors do point out that that achieving these goals and initiatives involves the contribution of all parts of the city. Policy and strategy makers, stakeholders, companies, the community and citizens need to work together with more transparency. The reasons for this are that Smart City initiatives are based on the intensive and comprehensive use of technologies, research, academia, professionals in/from various fields, are at the forefront of these transformations and have an extraordinary task, marked by technical and technological challenges. "Several ICT fields like IoT, AI, big data analysis, nano-technology are involved are involved in the process of creating more Smart City scenarios" (Arroub et al., 2016).

Part of literature concerning the notion and concept of smart city has exhaustively approached technical elements whereas others have mixed and combined technical elements and those pertaining to social or educational elements (Caragliu et al., 2011; Giffinger et al., 2007; Barletta et al., 2020; Falconer and Mitchell, 2012).

Although at times if is difficult to understand (due to sophisticated explanations, unclear boundary between possible and anticipatory), socio-technical analyzes prove their importance for "the enhancing of our theoretical understanding of the (contextual and

specific) interactions between social/governmental structures and new technologies" (Meijer and Rodriguez Bolivar, 2016, p. 403).

Literature has seen numerous and intense debates as regards how best to govern smart cities (Keta, 2015; Veselitskaya et al., 2019; Badulescu and Badulescu, 2008), some contributions placing more importance upon smart governance, a modern adaptation of governance to smart city administration, while others see the governance of smart cities as a combination of innovative decision-making and management, or innovative forms of collaboration in public administration (Meijer and Rodriguez Bolivar, 2016; European Commission, 2020; Barletta et al., 2020).

The implementation and development of a smart city seems to have immense and stimulating advantages and facilities. However, the creation from scratch or the transformation of existing cities into "smart" ones is continuously marked by barriers and difficulties, dangers and errors (European Economic and Social Committee (EESC), 2015; Falconer and Mitchell, 2012; McGuire, 2018; Sterling, 2018; Veselitskaya et al., 2019; Winkowska et al., 2019; Badulescu et al., 2014; Trip and Badulescu, 2020):

- excessive focus on investments aimed at the use of advanced technologies without understanding the social problems, inequalities and latent conflicts of the citizens who actually live in these cities;

- neglecting the involvement of local communities in the configuration of technical solutions, limited awareness as regards specific current and future needs;

- the loss of the existing culture and of the unique, traditional charm, appreciated not only by tourists but also by locals, as an element of cohesion and pride;

- increasing local taxes and fees to finance investments in infrastructure, modern technologies, etc.,

- Insufficient education for the widespread use of these facilities, cyber risks, etc.

The fact that today's big cities are complex, extremely diverse and increasingly difficult to approach, coped with the fact that such cities are full of uncertainties (Fernandez-Guell et al., 2016) is one of the biggest obstacles in defining a conceptual model and in the development of comprehensive technical solutions for implementing a smart city. The use of "smart" technological solutions when attempting to build smart cities from scratch have often been deemed as failures, which tend to be avoided and which are unattractive for voluntary relocations, precisely because they ignored many other aspects of everyday life (Winkowska et al., 2019; McGuire, 2018; Mock, 2016) focusing on advanced solutions, but often neglecting flexibility and humanity.

Despite of these challenges, steps have been made towards the rounding of this concept which to offer a basis for the smart cities' enactment. Consequently, the European Union vision for a smart city is ultimately disseminated through a series of roadmaps offering guidance for integrated planning and implementation of smart city projects and for fast-tracking such projects that are also financially viable, in an integrated and inclusive way (see for example Smart City Guidance Package – SCGP and Climate-neutral & Smart City Guidance Package).

3. A thumbnail view of Romania

As was previously mentioned, the European Commission defines a smart city as being "a place where traditional networks and services are made more efficient with the use of digital and telecommunication technologies for the benefit of its inhabitants and business" (European Commission, 2018). Given the constant development of the European Union (through the process of enlargement, economic development, technological development etc.) we can also notice the consistent advancement and transformation of European cities, development that targets each aspect of day-to-day activity, be it individual/group activity,

or company-specific. Although the speed at which cities develop, become more innovative and "smart" varies from region to region, throughout the following chapter we aim to target and address country specific issues as regards this "smart city" development at Romanian level.

Even though developments in the direction of cities becoming "smart" are to be considered as newer in their refinement as opposed to other countries throughout Europe, Romania has, nonetheless, several key cities that have begun their pivot from regular and only digitized cities, to smart cities.

It might seem obvious that most information concerning the development trials and opportunities aimed at increasing the general well-being of a region/city would come from the capital city, yet, in the case of Romania, cities from various other regions have higher transparency levels. IMD World Competitiveness Index has tasked itself with creating and developing a Smart City Index. In the case of Bucharest, the capital city of Romania, we find that it occupies the 85th position in the rank, in terms of how developed it is from a smart city perspective. This ranking has been made on a sample of cities from 102 countries. The city has a low score for a range of activities/issues, from health and safety to mobility, to public and corporate governance (IMD World Competitiveness Index, 2019). The same study has shown that the main area for concern as regards the governing of the city refers to the issues of corruption (67.2% of the respondents consider this as being the main area of concern for Bucharest), followed by road congestion, air pollution, and green spaces. Even if data are only available up until the year 2019, in future years an in-depth analysis will be made possible by using information from the Smart City Index. What is more, this index points to the direction towards which the attention of local authorities should be aimed at, in order to further develop Bucharest as a smart city. Therefore, in order to increase its ranking in terms of "smart city" features, local governing authorities should increase transparency as regards the decision-making process, the budgeting and the public spending, as well as increase awareness and collaborative participation. Even so, various positive steps have been taken in this direction, and we have noticed a broader involvement of the private sector in the activity of the public authorities. The city of Bucharest has made a partnership with the consulting branch of accounting giant Deloitte for the development of a draft strategy for the turning of Bucharest into a smart city (Romanian Insider, 2018).

Throughout Romania, we have found various organizations, both from the public and private sectors, that concern themselves with the task of nurturing and developing cities from the point of view of the present study. Even though their efforts are admirable, a certain unified or common policy approach should be developed, in order for the transition from digitized to smart cities to occur at a faster rate; a dual approach to the process of communication between the local/national authorities the private sector is a must.

According to information from the Romanian Smart City Association (ARSC), in 2018, at Romanian national level, 24 cities could be considered smart cities. The following cities are the most visible in terms of how many projects have been undertaken so as to develop a smart city: Alba Iulia city has 60 such projects, Cluj-Napoca city has 10, Arad has 9, Sibiu and Oradea each has eight projects, and Bucharest has started six such projects (ARSC, 2019). A particular evolution can be noticed. In 2019, at Romania level, 331 projects aimed at developing cities from a "smart" perspective had been started, throughout 45 Romanian cities, while a mid-year 2020 report recorded a total of 594 projects in 87 cities. At 2020 level, we notice an increase in the number of projects in the following way: Alba-Iulia now has 106 projects, Cluj-Napoca has 54 projects, Timisoara 26, Arad and Iasi have each 19 projects, Brasov and Bucuresti Sector 4 have 18 projects each, Oradea 17, Sibiu 15, and Piatra Neamt 15 projects, these being the most important and visible cities. The main areas of interest/focus, for each of the concerned cities, are Smart Mobility, Smart Governance, Smart Living, Smart Economy, Smart Environment, and Smart People (Vegacomp

Consulting, 2020). Out of all the projects in these cities, it is important to note the number of projects deployed in the city of Oradea that are focused on a specific functional area: eight smart mobility projects, four smart living projects, three smart governance projects, one smart economy, and one smart environment project. Thus, projects focused on improving the city from a Smart Mobility and Smart Living perspective have a higher share of the total numbers of projects aimed at transforming the city into a smart one.

Table 1: **Functional Area and Number of (Smart) Projects at Romanian national level in 2020**

Functional Area	Number of Projects	Percentage of Total
Smart Mobility	188	31.65%
Smart Governance	130	21.89%
Smart Living	121	20.37%
Smart Economy	84	14.14%
Smart Environment	42	7.07%
Smart People	29	4.88%

Source: Vegacomp Consulting (2020)

As can be noticed from the Table 1 above, the most important areas of interest for the better development of smart cities at Romanian national level are developments and projects started in the area of Smart Mobility, Smart Governance, and Smart Living. A more in-depth analysis reveals that at city level, Alba Iulia and Cluj-Napoca have proposed the greatest number of Smart Mobility solutions/projects, Cluj-Napoca registering 20 such projects, and Alba Iulia 17. Regardless of the functional area, looking more in detail to the data recorded, we see that most of the proposed and/or started projects are focused on the following: intelligent city public lighting solutions, smart and adaptive parking, e-bike sharing, virtual public servants (for tax- paying purposes), free access to Wi-Fi, Self Service IT Terminals, smart waste management and systems. In the following part of the paper, our focus shall be placed upon analyzing the city of Oradea, in the western part of Romania.

4. Oradea Municipality for a Smart City - Case Study

Oradea is a city located in the Western part of Romania and is the most important city of Bihor county. At the end of January 2020, Bihor had a total number of 178566 employed individuals and that the gross average income for Bihor (was of 4115 RON (Romanian National Institute of Statistics, 2020), (roughly 858 euro). The same report revealed that, in the entirety of Bihor county, at the end of January 2020, the unemployment rate was 1.5% out of a total population of 616264 people (Romanian National Institute of Statistics, 2020). In terms of a strategy for turning Oradea into a smart city, ever since 2015, the municipality has set guidelines for accomplishing this. The main areas of interest for the development of the city, according to this strategy formulated by the municipality, are the following: Smart Governance, Smart Mobility, Smart Living, Smart Education, Smart Citizens, Smart Infrastructure, Smart Environment, Smart Business and Information Security (Municipality of Oradea, 2016), (Badulescu et al, 2015). One of the main purposes of transforming this city refers to increasing innovation. Therefore, the municipality has proposed an increase of 45% in terms of innovative products that are to be produced locally, and, at administrative levels, to automate 80% of existing administrative processes (ranging from paying taxes and obtaining inquires, to facilitate communication between the public administration and the general population of Oradea). As concern areas of interest, the municipality plans to reform public transport and associated services, so that the city and the citizens can obtain

real-time transportation data throughout the city of Oradea coupled with a reduction of energy costs by 30% (Municipality of Oradea, 2016). The Figure 1 summarizes the most important four areas for the development of Oradea as a smart city.
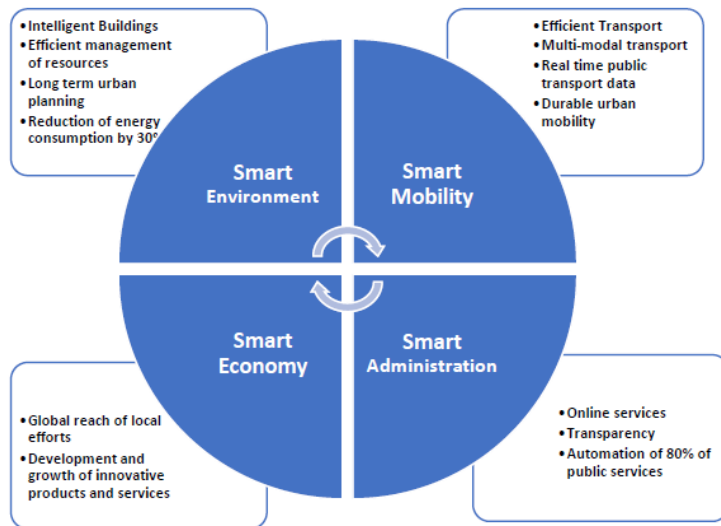
*Figure 1: **Main areas of focus for the development of Oradea as a smart city***
Source: Adapted from the report of the Municipality of Oradea (Municipality of Oradea, 2016)

Even though some terms might be considered general, an activity/evaluation report by the same municipality sheds light on the specific ways in which Oradea has made essential steps into becoming a smart city. For each of the four major areas of focus for the municipality, specific projects have been started and are under development. In Figure 2 the specific projects that have been undertaken throughout each area of interest are highlighted:
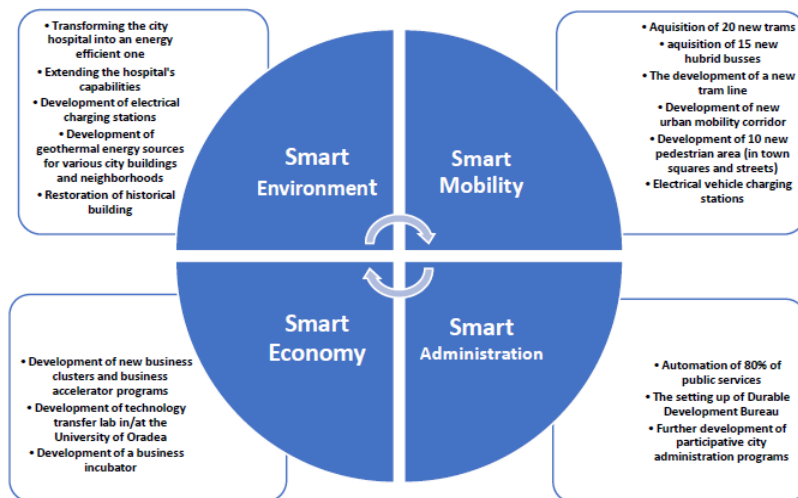
Figure 2: Specific projects for each of the 4 main areas of interest
Source: Adapted from the 2019 municipality activity report (Project Management Directorate for International Financing, 2020)

For the 2014-2020-time frame, Oradea has contracted and developed projects having a total value of 368.7 million euros, and this entire sum has been achieved through EU funded grants, from specific operational programs. There are still 81 investment grants that will be integrated into 59 projects. What is more, there are 41 projects that are yet being implemented, totaling approximately 209 million euros (Project Management Directorate for International Financing, 2020).

As has previously been mentioned, most projects implemented in Oradea have been funded through EU grants. Specifically, the distribution of operational programs through which grants have been funded are presented in Table 2.

Table 2. **Funding programs and the relative share of value**

Funding Program	Accessed Grant Amount (Euro)	Percentage of Total
2014-2020 Regional Operational Program	233,188,589	63.34
2014-2020 High Level Infrastructure Operational Program	105,865,404	28.75
2014-2020 Cross-Border Romanian - Hungarian Cooperation Program	13,687,622	3.72
Other grants	15,436,005	4.19
Total	368,177,620	100

Source: Adapted from the municipality activity report (Project Management Directorate for International Financing, 2020)

The 41 projects that are still being implemented are in various areas of interest and have different development stages. Most of these projects regard rehabilitating various buildings throughout Oradea, for energetic efficiency (referring to both thermal and structural perspectives). Out of the 41 projects, 15 are concerned with the rehabilitation of buildings. Taken as a whole, the average development stage of these projects is 25%, meaning that most of these projects are in their initial development stages. Separately, the development stage of the various rehabilitation projects is 18%. Future research will be aimed at analyzing the impact that these 41 projects have had in transforming the city of Oradea into a noteworthy smart city.

5. Conclusions and policy recommendations

Our study presented an eagle-eye view of the Smart Cities of Romania, focusing in the second part on the city of Oradea, and bringing specific considerations on its drive towards implementing smart city initiatives. Having set goals of cutting energy costs by 30% in the field of public transportation and an increase of 45% in terms of innovation products that are to be produced locally, Oradea has set the bar high of what can be accomplished through strategic development. For the 2014-2020 time-period, Oradea has contracted and developed projects having a total value of 368.7 million euros, and this entire sum has been achieved through E.U. funded grants, from specific operational programs. There are still 81 investment grants that will be integrated in 59 projects. What is more, there are 41 projects that are still being implemented, totaling a value of 209 million euros. These projects are quite diverse in their nature and are focused on four functional areas for smart city development: smart environment, smart mobility, smart economy, and smart administration. The involvement of local government leaders is essential for the success of the process of transforming a city into a smart one. Whereas the pragmatic goal of a smart city is to improve the quality of urban life, that city must be a lively, sustainable, inclusive, and interesting

place to live and work in, achieved through the civic involvement of its inhabitants. First of all, they need to engage in extensive community mobilization, communicating openly and honestly to citizens not only the future benefits but also the costs (financial, organizational, comfort), profitability of projects, efficiency gains and temporary interruptions of services, technological benefits and the problems related to data security, etc. City leaders must also ensure that as the city advances on the scale of technology and integration, lost jobs are offset by new opportunities, occasions for retraining and support for low-income areas are offered, so that citizens would find advantages in new services and the digital divide is reduced.

Costs, expenditures, financing options, public-private partnerships are other areas that need to be well managed and brought to the attention of citizens, as improving public services and converting existing municipal assets to new revenue sources are made for their residents' lives, to take advantage of emerging technologies.

Also, leaders need to be informed of changes in national legislation, opportunities to offer subsidies for these actions, tax responsibilities, data confidentiality, to ensure managed competition of municipal services and the motivation of public service employees.

As we have seen, given the speed at which transformation takes place, it proves vital for each and every city to strive to achieve the status of smart city as fast as possible. Although there are some disparities in terms of how many cities are smart (in comparison to the cities that still strive to obtain this title) and there are still some challenges left, the effort undertaken in this direction by Romania as a country and by the local government in this direction clearly points at numerous benefits that are still to come. Smart city governments and leaders will want to continue to be at the forefront of the smart city's evolutionary trajectory to ensure that residents' needs are met in the smartest, most efficient and most cost-effective manner.

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THE PROBABILITY OF UNCERTAINTY: ROMANIA'S GROWTH PERSPECTIVES

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Abstract: *This paper follows the already existing literature to address three main pressing concerns that Romania is currently facing with respect to sustainable development and economic growth, which has likely been impeded as a direct consequence of the ongoing sanitary crisis. The research questions of this paper were asked with the consideration of finding possible solutions to the current developments. These questions were "How will the global health crisis project on Romania's GDP growth in 2021 and going forward?", "To what extent can Romania face its current challenges with respect to the budgetary pressures?". The research itself was conducted using the R programming language with quantitative data, namely quarterly GDP starting from 2005 Q1 onwards and its main objective is to simulate Romania's GDP to answer the aforementioned questions. Therefore, this research is empirical in the sense that it derives the simulated data from real data which was taken from Eurostat. The main findings of this research were that Romania's GDP could grow by a mean 3.2% in 2021, which is more conservative than the existing institutional forecasts made by the European Commission, the International Monetary Fund, World Bank and the Romanian National Commission for Strategy and Forecasting, implying that the majority of the simulated outcomes have been in that respective range of values. Moreover, this research also finds that consumption is expected to increase by approximately 4.2% and that the budget deficit relative to GDP could go as low as to negative 7.8%. This paper creates value for future policymaking as it proposes solutions which could help Romania going forward. Thus, this paper creates value for not only the policymakers but the society as a whole.*

Keywords: GDP; probability; distribution; growth; forecasting; Romania;

JEL Classification: C25; C53; E17

1. Introduction

It is undoubtedly that the ongoing sanitary crisis has affected both the economy and society as a whole in 2020. Having this in mind, a few questions, which can help in reducing uncertainty, remain unanswered. It is unclear how the current crisis can project its effects on Romania's economic development in 2021 and going forward, and to what extent could the country face its challenges concerning the budgetary pressures. This paper attempts to answer these questions by running probability distribution simulations using quarterly data and multiple models. Moreover, possible solutions that may aid in policymaking are proposed at the end of this page. The purpose of these proposals is to pave the way for further research, as this paper does not analyze the potential impact of the respective, it addresses some of the most pressing concerns the country is currently facing. The rest of this paper is organized as follows; section one shows the already existing literature on the topic, section two describes the models used, how they were coded and what programming language was utilized together with the research questions, section three explains how the models were tested and the main findings, and section four ends the paper with a discussion, a conclusion and the research limitations. The references section follows right after.

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2. Literature Review

If a country's Gross Domestic Product (GDP) were to be a deterministic process, then the following year's GDP could only have one possible outcome since GDP would be solely determined by the parameters that condition the outcome, that is, implying that no randomness occurs over time, and therefore the output would always be the same. On this basis, going by the expenditure approach, where GDP is computed as the sum of consumption (C), investment (I), government expenditure (G), and net exports (E-I), all variables would be known beforehand and no changes would ever be made. (Landefeld, 2008)

However, this is seldom the case since there are events that can significantly disrupt economic growth. As such, a country's GDP over time is a stochastic process since there are multiple possibilities that can occur given a set of predefined events. Because the parameters that can affect GDP cannot be fully encompassed in a one state model, GDP can be viewed as a Markov Chain. Metropolis and his peers (1953) were the first to consider this method, and later on, Hastings (1970) developed an algorithm that made the simulation of stochastic processes possible. Geman and Geman (1984) further developed this method through a Gibbs sampling. Tanner and Wong (1987) extend this work by showing how posterior distributions can be computed whenever data augmentation can be generated. They conclude that if the sample size is large in each simulation, their algorithm can be interpreted as a method of solving a fixed-point problem.

On the other hand, Little (2006) explains how inferences in a statistical model should be Bayesian with a frequentist approach while Kruger and his peers (2017) find, based on frequentist principles, that the kernel density estimator, which is a method to estimate the probability density, performs poorly for small sample sizes and the continuously ranked probability score is dominated by the empirical cumulative distribution. They also argue that Gaussian approximations generally fail to be consistent. Wolf and his peers (2017) consider three MCMC approaches, namely, Metropolis with Gibbs sampling, Slice with Gibbs sampling and Hamiltonian Monte Carlo. They note how the latter two models are not widely used in Bayesian spatial econometrics and assess all three methods in four different scenarios, focusing on algorithms that sample from the posterior distribution. They find that standard simulation packages require significant adaptations to be viable, suggesting customization is needed to attain unbiased results since the effective sample size is often smaller than the nominal sample size of the autoregressive spatial parameter, and stopping the simulation early may result in understated posterior credible intervals.

Glocker and Wegmuller (2017) study the business cycles in the Swiss economy using a dynamic factor Markov-switching model. They argue that the proposed model demonstrates high accuracy forecasts and that it accurately coincides with the Swiss cycle fluctuations, including the 2008-09 financial crisis.

Roy (2020) addresses two issues regarding the implementation of such simulations, where to start and stop the algorithm, as these two factors relate to the convergence between the Markov Chain and the stationarity and convergence of Monte Carlo estimations. He argues that the algorithm should be started in high density areas, but only after enough iterations have been computed so as to find the appropriate area. He also explains how stopping the simulation early leads to inaccurate inferences and so, the simulation should be stopped only after the real valued function converges the particular feature of the target density. Moreover, he suggests that diagnostic tools are a fundamental requirement for deciding the degree of stationarity and convergence, but in general, the longer the chain is run, the better the output.

In terms of applying these methods on the Romanian economy, several search terms such as "probability distribution Romania", "Markov Chains Romania", "Metropolis sampling Romania", "Markov Chain Monte Carlo Romania" and others have been tried, with the filter

for articles no older than 2015. Even though the search has yielded plenty of literature, there have not been many that focus on economics and forecasting. Particularly, Kluza (2016) focuses on simulations regarding the sustainability of the government debt levels. He finds that some scenarios indicate a high vulnerability of the local governments to changes in the interest rates. Savoiu and his peers use the method to simulate the value of European convergence funds that could be absorbed by Romania during 2014-2020 while Simionescu (2020) focuses her attention on Bayesian forecasts with Monte Carlo simulations to improve inflation. As a result, the search yielded no results that incorporate simulations that primarily focus on Romania's GDP going forward in literature from 2015 onwards, and especially, no results were yielded that incorporate the possible outcomes of the lockdowns. Therefore, it is imperative to consider these developments and simulate Romania's probability distribution of economic development.

3. Methodology

This research uses quantitative data on the assumption that a qualitative method such as a focus group would not be representative for an entire economy. Moreover, this paper makes use of Romanian quarterly GDP (and aggregates) data from 2005 Q1 onwards. The paper uses secondary data, which was collected from Eurostat, and all the data points are expressed in EUR as a currency. 2005 was chosen as a reference point since it was that year when the country chose inflation targeting regarding its monetary policy (Daianu & Kallai, 2008). Among the existing literature, Svensson (2010) sees this approach as a successful way of stabilizing inflation and the real economy while also providing a high degree of transparency.

Multiple problems have been identified which makes this research necessary. Even though there have been studies that focus on forecasting Romania's economic growth through Bayesian methods or even through Monte Carlo simulations for inflation (Simionescu, 2020), little to no literature is available concerning estimating GDP through Markov Chains or Monte Carlo or any other probability distribution approach.

Due to the high number of variables that can affect economic growth, one single forecast cannot be said to provide accurate results. Thus, in a probability distribution, more simulations would indicate far more accurate results than one single forecast. For example, Lerche and Mudford (2005) explain the tradeoff between the number of simulations and the time it takes to provide accurate results. A standard procedure is to run a fixed number of simulations and to evaluate the mean and the standard error. Then, to increase the number of simulations and re-evaluate the aforementioned. They point out that enough simulations should be run up to the point where one determines that the change in the mean with the increase in number of runs is less than the pre-specified degree of accuracy. As mentioned, this trial and error approach comes at the expense of time needed to converge with the pre-defined degree of accuracy. Therefore, for the purpose of this paper, at least one million simulations are run for each model, and the results are compared to the already existing institutional forecasts.

Another consideration is the effect of the global health crisis. It is yet to be determined how the economic landscape was reshaped since some economies are going back in lockdowns. As such, little literature is available on these topics. This paper can contribute to elucidating the question of what the full effects could be. Moreover, Romania is faced with a high degree of uncertainty with regards to its current economic system, that is, a declining population (World Bank), a high amount of economic stress due to its budgetary spending, implying a 7.16% deficit in 2021 and 5.84% in 2022 according to Bloomberg, and a low digitalization rate compared to the EU average (European Commission). This paper looks at different scenarios, attempting to resolve these issues, that could later be used in future policy making.

Two research questions have been asked to find a solution to these prevalent issues. They are listed below:

- How will the global health crisis project on Romania's GDP growth in 2021 and going forward?
- To what extent can Romania face its current challenges concerning increased governmental expenditure, output levels? And what are the possible solutions to ensuring a sustainable system going forward?

Probability distributions with respect to Romania's economic development are a necessity when considering these two questions since it implies that policymakers and other stakeholders consider multiple possible outcomes to ensure things do not take a turn for the worse. In order to answer these questions and find solutions to the stated issues, one software package was used, namely, the programming language R to create custom simulations specifically tailored for Romania.

4. The Distribution

According to Olerichs (2017), a solution for simulating future economic growth is to estimate the probability distribution of possible economic outlooks using the variance of growth. This paper follows the aforementioned approach in the sense that it uses the same distribution selection procedure and Bayesian inferences.

A proper distribution must be chosen to produce unbiased results. Thus, by examining the historical quarterly change in Romania's GDP, one can determine what a distribution could look like for this paper.
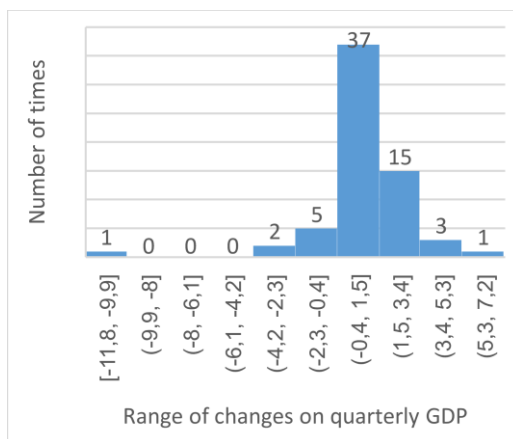
Figure 1: Romania's quarterly GDP change
Source: Eurostat

Therefore, following the existing literature and considering the infinite number of possibilities, it has been decided that Romania's quarterly fractional change in GDP fits an asymmetric Student's t distribution.

4.1. The Historical Model

This model is the foundation on which all other models in this paper have been simulated. In this particular instance, a normal distribution was fit for the simulated cases. As Olerichs (2017) points out, this method is conservative in the sense that it does not account for the potential decrease in relative fractional growth as a country develops and thus, growth would be somewhat constant over time.

_____

```
 6  b <- 1
 7  a = 0
 8  n = 10
 9  no_sim = 0
10  vector <- numeric(0)
11  while (a < n)
12  {
13  x <- rnorm(1000, mean(gdp), var(gdp))
14  val = 1
15  for(val in x)
16  {
17  no_sim = no_sim + 1
18  b = gdpv[60]*(1+val/100)
19  vector <- c(vector, b)
20  }
21  a = a+1
22  }
23  hist(vector, breaks = 50)
24  mean(vector)
```

Figure 2: The Historical Model
Source: Own code

The lines of code above simulate 100 cases for each "a" until "a" is equal to "n" and the distribution is fit from a different sample each time to avoid a single sample bias. Thus, for "n=100", 100 different distributions are sampled, each containing 100 possible outcomes. In order to create unbiased results, the simulated distribution follows the mean of the historical GDP as well as its' variance.

4.2. The Gross-Value Added Model
This model follows the same coding logic as the historical model, albeit with some differences. First, the total sectorial output refers to the Gross Value Added (GVA) by sector as detailed by Eurostat (2021). Second, GDP is estimated by summing all sectors and each sector is estimated using a similar code to the historical model.

```
32  b <- 1
33  a = 0
34  n = 100
35  no_sim = 0
36  vector_total <- numeric(0)
37  while (a < n)
38  {
39  x <- rnorm(100, mean(total_c), var(total_c))
40  val = 1
41  for(val in x)
42  {
43  b = total_v[60]*(1+val/100)
44  vector_total <- c(vector_total, b)
45  }
46  a = a+1
47  }
48  hist(vector_total, breaks = 50)
49  mean(vector_total)
```

Figure 3: The GVA Model
Source: Own code

This particular code simulates the total GVA. To simulate each sector, multiple variables and vectors have been created and changed for each specific case.

4.3. The European Model
The previous two models assume that an economy will develop based on historical evolution. This is most definitely not the case, as business conditions change and so does the total output. Moreover, some industries could perform worse as an economy evolves

while others could perform better. In this respect, the new behavior comes from a distribution that is shared with all other EU27 countries.

```
58  b <- 1
59  a <- 0
60  n <- 100
61  vector <- numeric(0)
62  while(a < n)
63  {
64  mean_romania <- rnorm(1000, mean(c_romania), var(c_romania))
65  variation_romania <- rinvgamma(100, var(appended))
66  x <- rnorm(100, mean(c_romania), var(c_romania))
67  val = 1
68  for(val in x)
69  {
70  b = v_romania_div[60]*(1+val/100)
71  vector <- c(vector, b)
72  }
73  a = a+1
74  }
75  mean(vector)
76  hist(vector, breaks = 100)
```

Figure 3: The European Model
Source: Own code

To do so, a vector was created in which all marginal GDP changes were appended so that a distribution could be simulated based on their mean and variance. Thus, in these simulations, Romania's distribution mean is fit to a normal distribution, while the country's variation is fit to an inverse gamma distribution with the variation of EU27 countries.

5. Model Testing

To ensure the aforementioned models produce adequate results, the models have been tested with a small number of simulations on already existing GDP values. 2020 Q4 was chosen as the reference year for these tests while the number of simulations was chosen to be 100 sets of 100 simulations. Furthermore, the simulated GDP value was chosen as the mean of the total simulations. Thus, for 2020 Q4, the historical model, which is solely based on historical evolution, produces a mean GDP of EUR 57.8 billion, the total GVA model, ,which is similar to the historical model, produces a simulated mean of EUR 52.9 billion and taxes less subsidies of EUR 5.4 billion resulting in a total GDP of EUR 58.3 billion. The GVA approach by simulating all sectors produces a GDP value of EUR 57.9 billion while the European model produces a mean GDP of EUR 57.7 billion. The table below presents the test results against the actual GDP value, in EUR billion at current prices, which was taken from Eurostat (2021).

Table 1: Testing Results

Actual GDP 2020 Q4	Historical model	GVA (total)	GVA (by sectors)	European Model
57.5	57.8	58.3	57.9	57.7

Source: Eurostat, authors'calculation

The tests were considered adequate for implementation since the simulations produce values that are marginal to the actual value. A margin of error has also been assumed to be acceptable since forecasts and simulations are unlikely to produce a perfect value. In terms of simulations on forward looking GDP, it has been decided that to achieve model convergence, and considering that the more simulations are running, the closer the mean could be to the real value, at least one million simulations should be run per model. One more consideration that needs to be addressed with respect is that the GDP values have

been divided by 1000 due to efficiency matters such as computing time and to avoid a potential data overflow.

6. Results

In order to check that the algorithm is working without a data overflow, a set of instructions was added that prints the number of simulations that the algorithm executed for every 10% completion. This additional set of instructions decreases the efficiency by increasing the running time, however, it ensures that the algorithm does not fail, and it does not enter in an infinite repetitive loop due to an overflow. After one million simulations using the historical model, the mean GDP value produced is EUR 58.9 billion for 2021 Q1, while GVA methodology produced a simulated GDP of EUR 58.6 billion. Last but not least, the European model produced a mean GDP of EUR 58.4 billion. Thus, after running the models several times with one million simulations each time, the mean value is EUR 58.6 billion for Q1 2021. The image below is a graphical representation of the total simulated values for the European Model.
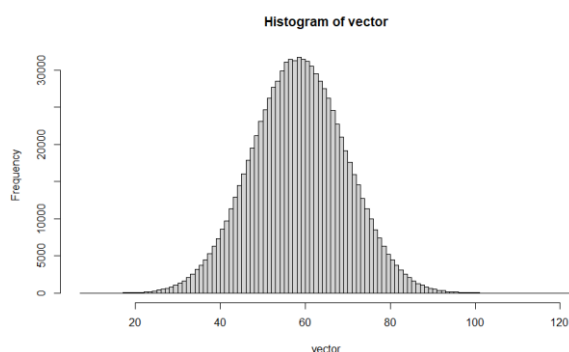
Figure 4: Simulation Results
Source: Simulations in R based on own code

On the other hand, simulated values can be produced for the year 2021 as well. This was done by simulating each quarter and them summing the values up. Thus, as a result of these simulations, Romania's GDP could reach a total value of EUR 224 billion for 2021, implying a 3.2% upside for the whole year. The chart below shows a graphical representation of some of the simulated 2021 outcomes.

_____
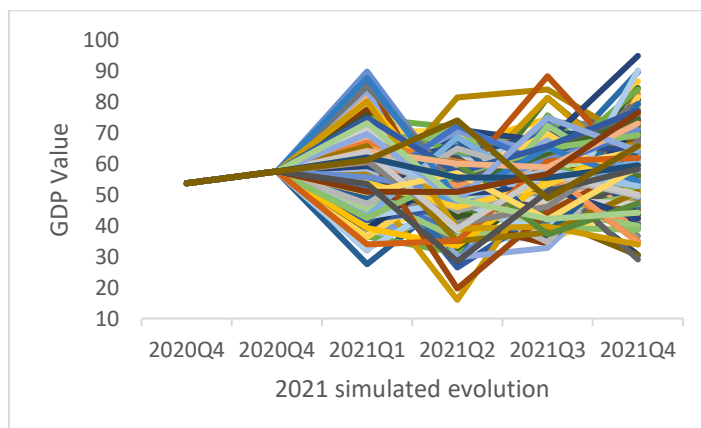
Figure 5: Simulation Results
Source: Simulations in R based on own code

Table 2: Means of the simulated quarterly values in EUR

2021	2021	2021	2021
58.4	51.1	55.3	59.4

Source: authors'calculation

7. Discussion

As stated, this paper has aimed to simulate the Romanian quarterly GDP data to estimate what the country's economy could look like in 2021 with the aim of creating a perspective on the long-term growth potential. In order to do so, two main research questions have been asked. First, how the global health crisis could project itself on Romania's GDP in 2021. Second, to determine to what extent can Romania face its current challenges with increased governmental expenditure and to determine the possible solutions that the country's economic framework could come up with to create a sustainable system going forward.

Thus, to get a sense of what the simulated values could imply, the aforementioned results have been compared to the already existing institutional forecasts for 2021. According to the European Commission (2021), the country could grow by 3.8% in 2021. The International Monetary Fund (2021) is bullish in their estimations with a projected 6% growth at constant prices, the World Bank (2021) sees a growth of 4.3% while the Romanian National Commission for Strategy and Forecasting (2021) projects a growth of 4.3%. The simulations in this paper produced a mean growth of 3.2%, which is more conservative than all other forecasts mentioned in this paper.

As such, the global health crisis, which currently affects not only Romania, but the whole world in 2021 as well, through various measures to combat the virus spread, seems to project its impact on the economy. Based on this fact, but not exclusively, Romania's budgetary pressures are likely to remain at concerning levels throughout 2021 and going forward. In fact, based on the simulation model, the budget deficit could come down to approximately negative 7.8% while debt relative to GDP could go up to 49%. Furthermore, consumption could fractionally increase by 4.2%. Looking at the GVA computation methodology, the best performing sector by growth rate could be communications which could be mainly driven by a substantial growth in information technology. With regards to the first research question, it becomes clear that the ongoing health crisis still has negative implications for 2021 and going forward, as the budget balance will not achieve minimum accepted levels by the European Union. Furthermore, this could also imply economic pressures due to the potential sanctions that the country may be eligible for.

Since Romania had already been facing these pressures before, several solutions are hence proposed in this paper. These solutions may aid in policymaking; however, this paper's objective has not been to analyze the potential impact of the proposed solutions, but to use the simulated outcomes to find the respective solutions. The potential impact of the proposed solutions could therefore be a continuation of this research. Considering the existing situation and acknowledging the fact that the full impact of the sanitary crisis is yet unknown, one approach towards ensuring a sustainable economic system going forwards is to make use of the expected revenues while also taking advantage of the relative low interest rates in EUR denominated instruments, but only to a level that does not significantly impact the respective currency. Even though this approach has been widely used to support affected sectors, it can still be used without causing major disruptions, albeit on a marginally lower scale, where less debt instruments would be issued as the economy gradually rebounds. Another potential solution is to increase the total tax collection, not by increasing the actual

taxable income but by combating fraud while also temporarily exempting small and medium businesses from a portion of their tax obligations throughout the economy for a very short while, and possibly only after the gradual recovery starts. This would affect tax revenues, but it may aid in the medium towards long-term as it could mean businesses would have additional resources to trade. This could also imply higher inflationary pressures; however, an estimation of this potential impact could be a topic for future research. Last but not least, another proposed solution is to increase the EU cohesion funds absorption as the country's absorption inflows currently stand at around 10% per year according to the European Commission (2021). A faster absorption rate could translate not only into a faster rebound but could also open a path for sustainable business models to emerge.

8. Conclusion

The objective of this paper has been to run probabilistic simulations on Romania's quarterly GDP to estimate what the economic growth could look like in 2021 and address the questions of how the impact of the global health crisis could impact Romania both in 2021 and going forward, and to what extent could Romania face its current budgetary pressures. The methodology used in this paper was to code an algorithm that can run simulations using the R software package. The main tradeoff in running such simulations is the time needed to run them due to exponential complexity. Enough simulations were needed for model convergence. As such, it has been decided that at least one million simulations would achieve this goal.

This paper mainly finds that Romania's GDP could grow by a mean of 3.2% in 2021 in nominal terms, that private consumption could increase by 4.2%, that the budget balance is likely to stay in negative territory by 7.8% and the highest growing sector could be communications, especially information technology. The proposed solutions are to keep taking advantage of the low interest rates, but only up to a level that does not impact the respective currency, to reduce fraud and thereby increase tax collection while also supporting small and medium businesses through very short-term tax exemptions which could be beneficial in the long-run, and to increase the EU cohesion funds absorption rates as Romania currently manages to absorb approximately 10% of the allocated funds per year. The purpose of this paper has not been to estimate what the potential economic impact of these solutions could be. This may be subject to future research.

Nevertheless, the whole world is faced with unprecedented times in recent history. These events have had a significant impact on society and therefore on the economy. In such times, it may be difficult to understand the full impact of these events as they have yet to completely end. In such times, it is up to us to find cohesion and understanding, as the opposite might not only affect some on an individual level, it would alter the fabric of the society as a whole, and it might lead us towards a path that is bound to gloom.

9. Research Limitations

This paper is limited to the known facts and factors that may disrupt the Romanian economic growth. This paper acknowledges that there may be a large number of other factors that may cause growth impediments, and which are not known as of the writing of this paper. Besides, this research is limited to relatively low computing power, and the model cannot pinpoint the exact moment in time when a disruption may even take place. Thus, future research is imperative to better understand the events that are currently going on as well as their full implications.

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EXPLORING THE RELATIONSHIP BETWEEN SMART CITY, SUSTAINABLE DEVELOPMENT AND INNOVATION AS A MODEL FOR URBAN ECONOMIC GROWTH

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Abstract: *In this paper we focus on the concept of smart city, defined as cities where investments in human and social capital and infrastructure, along with ICT progress and innovation fuel the sustainable economy and stimulate growth in quality of life, with a focus on smart natural resource management. We envision smart city as a concept that highlights important aspects of sustainability, such as the need for responsible resource management, energy efficiency and citizen involvement. Given the current understanding of the smart city concept, it is unclear whether it has the necessary features to ensure sustainability. We believe that this aspect is due to the fact that smart cities are extremely complex and interdependent. Their study and analysis would therefore require an inter- and transdisciplinary approach that allows an adequate overview of this concept, to the convergence of several areas, such as urban development, technology, economics, engineering and social sciences, etc. We believe that this research will contribute to the already existing theories of smart cities and will help maximize the potential for this smart city concept to be a viable solution for sustainable development in our increasingly urbanized world, especially as the latest statistics confirm an upward trend in EU-level indicators on sustainable cities and communities. Moreover, the theory of smart growth is being discussed, but not as an antagonist alternative, but rather as an addition integrative to the concept of sustainable development of smart cities. In our opinion, smart city solutions would not be efficiently implemented and helpful to communities in absence of a vision for the smart and sustainable future.*

Keywords: *smart city, sustainable development, innovation, urban growth.*

JEL Classification: *O31, Q01.*

1. Introduction

Cities have nowadays a key role in solving a wide variety of issues and needs of citizens and organizations given the fast-growing urbanization and current sustainability challenges. This is why public administrations and other stakeholders need to tackle urban dilemmas and develop new governance models in order to address these challenges in an effective and efficient manner. It is relatively recently that a novel concept relevant to the sustainable development of urban areas, namely smart city, has emerged, and this concept takes into account the benefits of applying information and communication technologies (ICT) in fields of development such as environmental protection, local economy, education or even social inclusion. social. Experts and practitioners in the field, such as designers or engineers believe that through widespread use of ICT, it might become possible for a system to become more efficient and effective in the use of its available resources, by encouraging economic competitiveness and tackling the long-debated issues of cities, such as poverty

or social exclusion. However, we have seen along the past decades that this concept is still lacking in conceptual clarity; nevertheless, it is widely applied in practice. We concur to the general opinion that there is small understanding as to the real contribution of the concept of smart city to sustainability issues in what concerns urban development.

Debating on the impact of smart city on sustainable development is thus not an easy task since they are both complex phenomena driven by a variety of factors that support the (re)modeling of contemporary cities. We can easily observe that they are not just fashionable words, concepts or labels associated with urban marketing as they are really implemented in a grounded way, successfully or not across the world, in order to solve the problems of cities on a global level. The biggest challenge of a fast urbanization is undoubtedly the future of cities. Therefore, the implications of urban development in cities and weather it is sustainable or not, is essentially important at both micro and macro level, that is to individuals and to the whole planet. It is only natural to think of sustainability in times like this as any development consumes resources. While the impact of climate change becomes increasingly visible, there is an increasing need to urgently shift to a low-carbon model. In addition to this, as globalization and market forces continue to inevitably create extreme changes in society, there is an even greater need to identify and implement innovative solutions which will transform both societies and economies to become more inclusive and liveable to citizens.

When considering the sustainable smart city, we identify many strong global trends that have the potential to be addressed, such as climate change, social inequality or poverty. There is an increasing interest in sustainability, in the transformative power of urbanization and all opportunities that technological and digital innovation could offer and all these might be capitalized in achieving the goals of urban growth, alongside with others that have been universally recognized through the UN Sustainable Development Goals.

In an urban area, digital innovations are meant to reshape every sector, such as energy, where technologies such as smart grids can optimize the integration of renewable energy into e-government applications that make municipal governments more open, transparent and accountable. Another sector of great interest is mobility since cities are getting more crowded every day and pressure on the old-fashioned infrastructure is getting citizens to revolt on political factors. Innovations to help tackle traffic jams and support eco-friendly ways of transportations are implemented more and more often with a real potential to gaining more popularity as fuels are scarce around the globe. Perhaps one of the strongest trends is smart governance who uses new forms of communication with stakeholders and data accessibility to mobilize the necessary networks and resources around solving local urban problems. However, although it often seems that the power of technology is transformative or innovative, a long-term strategy, a concrete action plan and a clear vision are more suitable for the development of a society than implementing quick solutions which work for only a short limited period of time. This aspect has been exemplified in the case of several cities around the world, which have managed to implement smart or green solutions to reinvent themselves, to create an image of themselves as being attractive, competitive and eco-friendly by creating world-renowned developments. Still, in many of these cases, this does not mean that they have eradicated or solved all socio-economic problems. On the contrary, these municipalities didn't stop fighting to address these issues while developing high-performance innovative solutions. This proves that rigidity in some respects intertwines with a certain dynamic of development and urban growth. In particular, we found that a special inertia is surrounding the power structures as urban infrastructure can last for decades, creating problems when investments are lacking. Therefore, strong action is required from by policymakers to address these problems because the changes promised by the sustainable smart city in the future are more likely to occur with support from innovation that acts subtly and incrementally, and not suddenly and radically. However, we consider that as long as cities move along a path that creates more prosperous and

equitable societies, all within ecological limits, then this slow movements is enough to consider it progress towards urban growth.

2. Smart city as socio-technical imaginary

Cities are dynamic and complex constructs at the centre of the challenges posed by continuous development and sustainability (Radecki, 2018; Caragliu, Bo and Nijkamp, 2009). With increasing economic productivity, the world today faces major societal challenges, such as scarcity of resources, environmental pollution, traffic congestion, climate change, population aging and migration, human health problems, sometimes even extreme and globally spread social and economic challenges such as the COVID-19 pandemic. As economic productivity increases in cities, urbanization seems to be the most likely cause of some of these challenges (Palgan, Evans, & Schliwa, 2015). Cities are recognized as the main agents of change when it comes to addressing these challenges, even if they extend to regions, nations and even continents (Schuurman et al., 2012). The need for cities to respond to these challenges has led them to find smarter and more innovative ways to solve these problems (Chourabi et al., 2012). Therefore, cities are increasingly described in connection with the notion of smart city or innovation. But where does this trend come from?

People have always used their imagination to project what the future might look like and try to make it happen. These sometimes idealistic and highly creative visions of future societies, however, have been throughout history a little too advanced to follow or implement due to lack of knowledge, technology, tools, or insufficient capacity. Today, however, imaginaries or visions of the future are no longer restricted to science fiction or utopian constructs, but represent, as Jasanoff and Kim (2009) argue, an important resource that allows for new forms of imagining life by designing optimistic and at the same time achievable goals. Visions are in this case no longer the product of individuals projecting their future, but are shared and contextualized into wider, often political frameworks. This kind of imaginaries allow collective interpretations of social reality (Castoriadis, 1987) and can form a solid basis for that feeling of belonging to a community, attaching to it organically. A step further is taken by Jasanoff & Kim (2009) when they emphasize that the imagination can be seen as an organized field of social practices, which serves a key component in creating social order.They introduce the concept of "socio-technical imaginary" as a tool that proved the power of imagining the possible future and what an important aspect of social life as a whole that is. Also, the socio-technical imaginary shows the way in which the collective visions about the desired and feasible technical-scientific futures are described (Ballo, 2015).

We have no doubt that socio-technical imaginaries are able to sustain the need for political decisions or have the capacity to justify new investments in science and technology, can encourage types of technological processes or, in fact, justify the inclusion or exclusion of different social actors, ideas that are particularly important for the development of smart cities (Jasanoff, 2015). This is because cities that implement smart solutions include networks of people, organizations, institutions, and companies that position themselves in a certain way to achieve their goals for the future. In the case of smart cities, we can see that they often are presented as a solution, as a real vision and an imaginary already achieved regarding the future cities, what solutions they implement, how and for whom they are organized. It is important to remember that such imaginaries are not neutral constructs, because they are organized in ways in which some elements are included and some, on the contrary, excluded or less visible in the attention of decision makers. From this perspective, there are smart cities with strong social components, others that put more emphasis on technology or administration. Equally, depending on the various needs and urban emergencies, smart and innovative solutions will emerge into projects implemented

in various fields: mobility, energy, human resources, education, etc. In this context, smart cities appear as one of the solutions and trends to mitigate and solve global and local problems (Castelnovo, 2018).

In our opinion, smart city is a socio-technical imaginary due to the fact that everywhere in the world, across Europe and especially in the European Union, it is embedded in political and innovative strategies for the future. Smart city is promoted mainly through the way in which new smart technologies manage to make urban spaces more efficient, use resources better, reduce greenhouse gas emissions, manage energy production and become more sustainable. In other words, the smart city model has been enthusiastically embraced by stakeholders and decision makers around the world, promising everything from advanced technology to high living standards for citizens. Without innovations and technological progress not only that this idealistic construct of the future would not be possible, but it will also not be sustainable.

3. Sustainable urban development policies in a smart innovative context

Recent studies and policies highlight the synergies and benefits of connecting the principles of sustainable and smart urban development. We find it relevant that the most cited report of the World Urbanization Prospects series at United Nations not only documents a consistent trend of global urbanization in the past, but also clearly postulates that this trend will continue to rise at least until 2050. More importantly in our opinion, it calls for integrated policies to improve urban and rural living conditions and emphasizes the role of technology and innovation in mitigating sustainability challenges. As stated in this report, the political implications resulting from this study include, inter alia, the need to have accurate, consistent and timely data. These are needed for policy development, as well as the efficient use of ICT to facilitate a sustainable way of urbanization, one that improves and streamlines the provision of services to urban stakeholders. The United Nations has already begun to direct its research in this direction, by exploring the role of Big Data for sustainable development (United Nations, 2015).

European Union policies also highlight the synergy between smart technologies and sustainable urban development. With the emergence of the Europe 2020 Strategy, the goals of promoting smart, inclusive and sustainable growth in Europe have been set. The strategy is based on innovation, which is seen as a means of addressing challenges, including climate change and energy efficiency. Furthermore, through the European Innovation Partnership for Smart Cities and Communities, launched by the European Commission in 2012, the energy, transport and ICT industries are invited to cooperate with cities to meet their development needs. This will allow innovative, integrated and efficient technologies to launch and enter the market more easily, turning cities into poles of innovation (European Commission, 2012). The relationship between the concept of smart city and that of sustainable development is also reflected in the EU's regional and urban development policy, which sees green technology as an asset for reducing greenhouse gas emissions and encouraging the intelligence and innovation of urban communities (European Commission , 2011).

The central role of cities in sustainable development is clearly reflected in the Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda for Sustainable Development (2015), namely to make cities and human settlements inclusive, safe, resilient and sustainable. We find that the defining role of cities in sustainable development globally and locally is now well documented (European Commission, 2011; United Nations, 2015). That being said, since the early years of the popularization of the smart city concept, a considerable number of its definitions have included the goal of sustainability (Caragliu et al., 2011; Giffinger, Fertner and Meijers, 2007; Schaffers et al., 2011) and refer to terms

such as "smart environment", "smart energy", "smart utilities", "smart water management systems" and other concepts related to the environment as an integral part of the smart city (Giffinger, Fertner and Meijers, 2007; Telecommunications International, 2014; Komninos, 2011; Lombardi, Giordano and Farouh, 2012; Zubizarreta et al., 2013). This broad category of "smart environment" refers in fact to the ability of smart city tools and applications to improve the environment by introducing ecological technologies, allowing for better and more accurate monitoring of how urban resources are consumed. Marsal-Llacuna et al. (2015) actually identify the origins of smart cities in ecological and habitable cities. They explain that the smart city embodies the principles of sustainable development alongside with the quality of life, which in turn are enhanced by modern and advanced ICT. The inclusion of "sustainability" in the concept of smart city has also been confirmed by other research as well in the form of reviews of smart city domains.

Moreover, in a review of 61 applications from a total number of 33 smart cities, Zubizarreta et al. (2013) found that applications related to environment occupy 18.03% of the total, thus revealing the fact that environment is an integral part of the smart city. Also, Albino, Berardi and Dangelico (2015) confirm that issues related to the environment, energy and sustainability in cities are included in many definitions of the smart city.

At the same time, the smart city concept emerges from the efforts of a multitude of stakeholders in generating opportunities and providing not only a bright future such as socio-technological imaginaries, but also adequate basic facilities, such as drinking water supply, sewerage and living conditions, and the provision of satisfactory minimum basic infrastructure, with better environmental conditions and a better quality of life, with the support of health and socio-cultural infrastructure ensuring the mobility of people, goods and services. Obviously, cities, compared to rural localities, are preferable and better places for a more qualitative way of living, with innovative and modern tools suitable for experimenting and working. The concept of "smart" reflects, in our opinion, the perception of such expectations and aspirations from citizens. Equally, smart city is able to ensure efficient management of available natural resources through participatory actions involving citizen elections and public-private partnership programs. To achieve an increase in the quality of life, we mention some important features of the smart city concept:

- Respect for the environment and energy;
- Use of digital information and communication technology;
- Sustainable development of different sectors of the economy.

Taking into consideration the above, smart city is nothing more than an approach to sustainable development that responds technologically to resource conservation and natural climate change. The city is designed to achieve the 17 goals and all targets of the United Nations Sustainable Agenda from September 2015 faster and more efficiently. The interplay of smart and sustainable development goals is illustrated in Table 1.

Table 1: Convergence of the UN Sustainable Development Agenda 2015 and the components of Smart City

Goal no.	UN Agenda for sustainable development	Smart city component
1	No poverty - Eradicating poverty in all its forms and in any context	Smart environment
2	"Zero" hunger - Eradicating hunger, ensuring food security, improving nutrition and promoting sustainable agriculture	Smart economy Smart governance
3	Health and well-being - Ensuring a healthy life and promoting the well-being of all at any age	Smart living Smart governance
4	Quality education - Ensuring quality education and promoting lifelong learning opportunities for all	Smart living Smart governance

Goal no.	UN Agenda for sustainable development	Smart city component
5	Gender equality - Achieving gender equality and empowering all women and girls	Smart living Smart governance
6	Clean water and sanitation - Ensuring the availability and sustainable management of water and sanitation for all	Smart environment
7	Clean and affordable energy - Ensuring everyone's access to affordable energy in a safe, sustainable and modern way	Smart environment
8	Decent work and growth - Promoting sustained, open and sustainable economic growth, full and productive employment and decent work for all	Smart economy
9	Industry, innovation and infrastructure - Building resilient infrastructure, promoting sustainable industrialization and encouraging innovation	Smart economy
10	Reduced inequalities - Reducing inequalities within and across countries	Smart living
11	Sustainable cities and communities - Develop cities and human settlements so that they are open to all, safe, resilient and sustainable	Smart living Smart governance
12	Responsible consumption and production - Ensuring sustainable consumption and production patterns	Smart economy Smart living Smart governance
13	Climate action - Take urgent action to combat climate change and its impact	Smart environment Smart governance
14	Aquatic life - Conservation and sustainable use of oceans, seas and marine resources for sustainable development	Smart environment
15	Terrestrial life - Protecting, restoring and promoting the sustainable use of terrestrial ecosystems, sustainable forest management, combating desertification, halting and repairing soil degradation and halting biodiversity loss	Smart environment
16	Peace, justice and efficient institutions - Promoting peaceful and inclusive societies for sustainable development, access to justice for all and the creation of efficient, responsible and inclusive institutions at all levels	Smart living Smart governance
17	Partnerships to achieve the objectives - Strengthen the means of implementation and revitalize the global partnership for sustainable development	Smart governance Smart economy

Source: own elaboration of the authors.

However, the presence of the environmental dimension is quite abstract in the literature on smart cities, with specific subdomains, objectives, measures and performance values largely still remained under question (Komninos, 2016). This is a very specific challenge for orienting smart cities towards sustainability goals, given that smart cities are more of a strategy than a reality, a strategic vision for the future and, as such, smart cities should be systematically and holistically addressed (Schaffers et al., 2011; Nam and Pardo, 2011). Smart city is an idea of where the city wants to be in the future and how it imagines itself transformed, taking advantage of the capabilities of digital technology and innovation networks. In most cases, it is not something that can be achieved here and now, but at best it is a strategic approach to meeting long-term development aspirations. To become a smart city, a set of requirements applies: a comprehensive sequence of strategic choices, a high

commitment of resources, monetary investment and the involvement of stakeholders with sometimes overlapping or conflicting roles. All this needs to be coordinated and managed in accordance with a clearly defined policy framework.

In our opinion, the knowledge economy alongside with innovation are the most essential drivers that influence the appearance and development of the smart city concept. The technological progress that has strived over the last decades have had an immense impact on cities and rooted their development in knowledge and innovation (Komninos, 2011). On the whole, the knowledge-based economy played a vital role in the emergence of smart cities discourse and shaped the principles that rule the concept. Still, without a clear vision of the future, with no thought on the sustainability of "smart", with no policies in this direction, there would be no smart city in the future to debate on.

4. Sustainable development versus smart urban growth

Without bringing prejudice to the rather simple definition of the concept of sustainable development, there seems to be among experts worldwide an on-going debate as to how the concept should be put into practice. We have no doubts about its growing popularity; however the implementation is not clear-cut obvious (Berke et al., 2007).

By definition, urban planning is being considered sustainable if the built environment becomes liveable, thus ecosystems being improved and protected; economic development is becoming more sensitive to local needs, in opposition to the gains of the elite, and it becomes more evident to observe the benefits of improving economic and environmental conditions. In 2003 it was stated that a community is sustainable when the neighborhood became the foundation of urban design and was characterized by mixed-use development, walking facilities and mixed-income housing. There were attempts to integrate sustainable development into urban planning and this endeavour has been largely linked to the concept of smart growth or development. While the relationship between the two concepts remains debatable, some writers argue that smart development is similar to sustainable development (Porter, 2002).

Smart growth has become lately an important concept in discourses on public policy and is known to provide some answers to the long-standing problems of development and its many detrimental consequences. It represents a paradigm shift and a broad rethinking of the consequences of uncontrolled urban growth (Burchell, Listokin, & Galley, 2000; Janssen-jansen, 2005; Edwards and Haines, 2007). Published in the 1990s, the concept offers a compelling insight into how to revitalize and ensure the competitiveness of urban areas from an economic point of view and to improve the quality of the environment. In most urban areas around the world, the conventional model of low-density development has succeeded in causing problems with transportation systems, degradation of the environment and has lead ultimately to the loss of agricultural land, natural areas and other urban open spaces. This situation has required innovative rethinking and action around the world and has generally been termed as "smart growth" (Katz, 2002).

Such development is built on a set of principles that provide guidance in order for communities and neighbourhoods to join efforts to promote development activities that ensure an improved quality of life, environmental conservation, economic revitalization and, most importantly, a sense of community. Smart growth discourages potential urban development models that operate independently of the vision of communities and results in development solutions that are inconsistent or incompatible. Smart Growth America defines this concept as one that builds urban, suburban, and rural communities with options that are available. We find that this definition promotes above all local economies, but also the creation of safe and beautiful communities with easy access to all.

We find that the principles of smart growth consist of sufficiently generous themes. In the long-cited publication, "Getting to Smart Growth", the Smart Growth Network highlights ten principles of smart growth, which include:

- development with mixed uses;
- compact development / building design;
- range of housing options and opportunities;
- creating neighbourhoods where citizens can walk;
- promoting unique and attractive communities with a strong sense of belonging;
- conservation of agricultural lands, open spaces, natural beauty and the environment;
- intensifying and orienting development towards existing communities;
- providing a variety of transportation options;
- making predictable, cost-effective and correct development decisions;
- encouraging the participation of the community and stakeholders in development decisions.

The smart growth movement has been a source of controversy in public discussions and debates on urban planning worldwide. There are some arguments in favour of smart growth that have often focused on infrastructure and cost savings on public services, transport savings, economic development and environmental protection and conservation. We believe that the construction of compact neighbourhoods and communities express the lower need for additional public spending on the provision of services and infrastructure beyond urban or community boundaries. In this kind of communities, smart solutions that envision sustainable development are highly required and implemented. At the same time, conventional communities with single-use, low-density development models were considered financially burdened by the costs of maintaining and replacing of the existing infrastructure. On the contrary, a higher density within cities and communities leads to a more efficient use of land and requires a smaller area allocated to roads and utilities. Similarly, density makes it easier for communities and neighbourhoods to access alternative travel options, such as public transportation, cycling, and walking. Litman (2014) states an impressive fact: it seems that residents of smart-growing communities own between 10 and 30 percent fewer vehicles and drive 20 to 40 percent less mileage annually than in self-reliant communities. Implementing smart growth policies reduces car dependency and helps urban dwellers avoid the high cost of fuel, insurance and parking fees.

In addition, smart growth enables the development of the local economy by increasing productivity, property values, tax revenues and business activity. Due to their obvious benefits and savings which result from the efficient provision of public services and improved infrastructure, congestion and accessibility that reduce transport costs and reduce per capita consumption, these policies are encouraged to be implemented alongside with smart city solutions in order to enhance the attractivity from a numerous points of view of communities. We conclude by stating that this concept of smart urban growth does not antagonize the concept of sustainable development, but rather it completes it and provides useful information on the strategies that should be adopted to improve the social, economic and environmental effectiveness of smart cities development in relationship with innovation and future progress of society.

5. In conclusion

In this paper we have shown that sustainable development is a clear goal of the smart city because, as the visions and promises of the future are not simple, similarly, the smart city solutions are complex, integrated and dynamic. The concept of "sustainable smart city" is an important one since progress of ICT and technology could help alleviate the problems

of increased urbanization or sustainable development. We conclude by saying that, although ICTs have a clear potential to solve sustainability problems in cities, there are sufficient reasons for interested urban stakeholders to be careful not to create a sandcastle, even more fragile than before.

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A MAPPING OF THE LITERATURE ON ECONOPHYSICS

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Abstract: *Econophysics is a relatively young discipline, being an interdisciplinary approach that applies methods and tools from physics in the economics, for studying the financial markets, or other economical phenomena. The objective is to create a mapping of the most used keywords in this topic, as well as the connections between countries and authors, based on citations. This article studies the literature on the topic of econophysics, using the Web of Science database. Bibliometric analysis was made with the free software VOSviewer, after extracting the data from 1364 articles, since the conception of the topic in 1996 until the year 2020. The software offered a useful network representation between the main keywords used in the field, or between countries and citations, and finally between authors, based on citations. The results evidenced a constant interest on the topic, with main keywords: "econophysics", "financial markets", "dynamics", "model" and "stock market", and the relationships between countries and authors were shown, with the United States, China and Italy being the leading ones. We also found that the most cited authors are H.E. Stanley, the inventor of the word econophysics, Wei-Xing Zhou and Didier Sornette. This article shows the main concepts used in econophysics, which can serve as an indicator of its directions of research, as well as the top contributors in the field, since its inception. Future directions include expanding the analysis to other databases, or to concepts relevant to econophysics, to identify trends in research and the growth of the field.*

Keywords: *econophysics, VOSviewer, bibliometric mapping, network.*

JEL Classification: *C45, D85, C38*

1. **Introduction**

Bibliometric mapping has developed over the last decades as a new tool of exploring literature. Beginning from the broad literature, it has asserted itself as a new means of examining the core literature on particular themes, and analyzing them. A simple method of finding important and relevant studies is offered by the citation reports of different databases, for example Web of Science. These platforms give a complex reading of bibliometric analysis, therefore there have been developed different methods and even software programs in order to construct bibliometric maps.

The aim of this paper is to analyze the framework of the research on econophysics. It is a relatively young branch of physics and economics, that established itself in the last few decades. It started developing because many of the statistical tools and data analysis used in physics can be successfully implemented in economy, as models hat try to describe the fluctuating financial markets. The complexity of many models in physics, especially in statistical mechanics, also translates well in the topic of economics.

The VOSviewer software is used to provide the bibliometric analysis, this paper presenting a broad overview of the main topics addressed in research papers on the subject of econophysics, and its application. We also study which authors produced important research in this field, based on the citations of their papers. The countries which have contributed to this field will also be evidenced in the bibliometric analysis, as well as the apparent collaborations between research teams from different countries.

The paper is structured as follows: in section 2 we present the literature review, with a succinct history of econophysics, as well as other bibliometric analysis realized on this topic. Section 3 describes the research methodology and section 4 is structured in 3 subsections, containing the analysis in VOSviewer. In section 4.1 the network between keywords is studied, in section 4.2 we analyze citations by countries, and in section 4.3 the citations by author are processed in VOSviewer. Finally, section 5 shows the conclusions and the final results.

2. Literature review

Econophysics is a new discipline that uses various tools and methods from physics in order to contribute to the advancement of economy (Stanley & Mantegna, 2004). Physics has influenced economy from the beginning, since Adam Smith claimed he was inspired by Newton's ideas and successes in describing the natural world. The term econophysics was first coined by Eugene Stanley and his collaborators at a conference in 1995 in Calcutta, being a neologism for this new branch of physics that was developing at the time (Stanley et al., 1995), based on studying the financial markets as a complex system and utilizing the methods of statistical physics, such as power laws and random walks.

In the 1990s econophysics mostly studied the distribution of financial returns using tools from physics, and since the 2000s, the field started expanding by studying other phenomena occurring in the financial markets as well as in the economy in general. Econophysics also studies extreme events in the financial markets, such as crashes, which were little considered by economists at first, who based most of their results on assumptions that large deviations were not possible, and that the normal distribution would always apply (Perreira et al., 2017).

Bibliometric analysis uses statistical methods to analyze publications and to construct a network of representation of various useful characteristics of said publications, such as citations or keywords. This type of analysis is used to investigate trends of collaboration, emerging concepts as evidenced by most used keywords and the growth of the field by means of citation analysis. Citations and keywords pay a large role in finding future directions of research and can also be used in finding the growth of the discipline and researchers specialized in it (Tahamtan & Bornmann, 2019).

There have been some studies on the econophysics collaboration network based on bibliometric analysis (Fan et al. 2004; Li et al. 2007, Sharma and Khurana 2021), mostly analyzing co-citation and co-authorship, as well as the development of citations in the field over the years. These results have shown that researchers from the USA, China, Japan, Italy and Germany to be the countries with researchers that collaborate the most, based on their bibliometric analysis. Other results evidenced some contributors belonging in these teams to be H.E. Stanley from USA, Wei-Xing Zhou from China (Jiang et al. 2010), H. Takayasu from Japan, R. N. Mantegna from Italy (Song et al., 2011) and D. Sornette from Switzerland (Jiang et al. 2010), among others.

3. Research methodology

In order to study the biggest trends in the field of econophysics, as well as studying which authors and countries have the most impact in this field, a bibliometric analysis was considered appropriate. The free software VOSviewer was used in order to identify the relationships between keywords used in econophysics articles, or between authors and their citations and the collaborations between different authors from different countries.

At first, we searched on the Web of Science – Clarivate Analytics data base on the topic of "econophysics", in the years 1996-2020, and only articles as a document type were selected. The database evidenced a number of 1364 papers, and the list was saved as a .txt file, and a thesaurus file was provided to merge almost identical terms. Afterwards, this file was processed through the VOSviewer software, providing an analysis of keywords and citations based on individual authors and countries.

4. Findings

In figure 1 we present how the number of papers varies yearly in the studied period. It can be noticed that five years after the first mentions of the concept there has appeared a pronounced growth in the number of papers, and from the year 2004 the interest of the authors remained almost constant with a maximum of 80 articles in the years 2008, 2009 and 2016. In the last four years there has been a slightly smaller amount of articles, following the maximum in 2016.
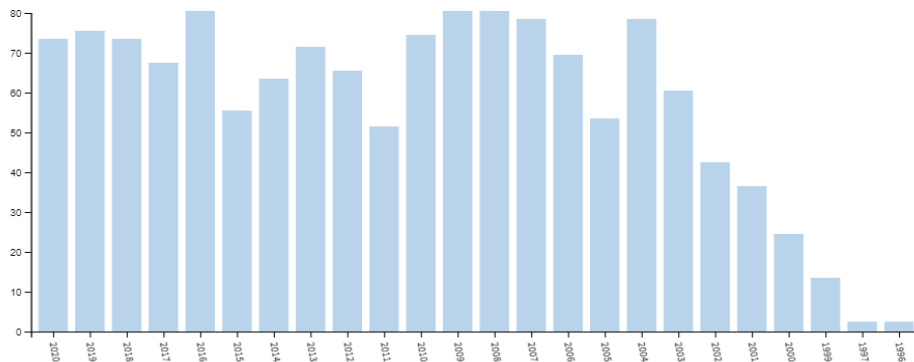
Figure 1: Number of papers published yearly
Source: Generated by the Web of Science analysis report

4.1. Analysis by keywords
In this section, the analysis by keywords is made, presenting how the most frequent keywords appear together in the articles studied. The VOSviewer software evidenced 3543 keywords. Some of them were very similar, therefore a thesaurus was used in the analysis, replacing keywords such as "stock-market" and "stock-markets" by "stock market". This gave a total of 3530 keywords, and by setting the minimum rate of occurrence at 20, the software found 58 keywords.
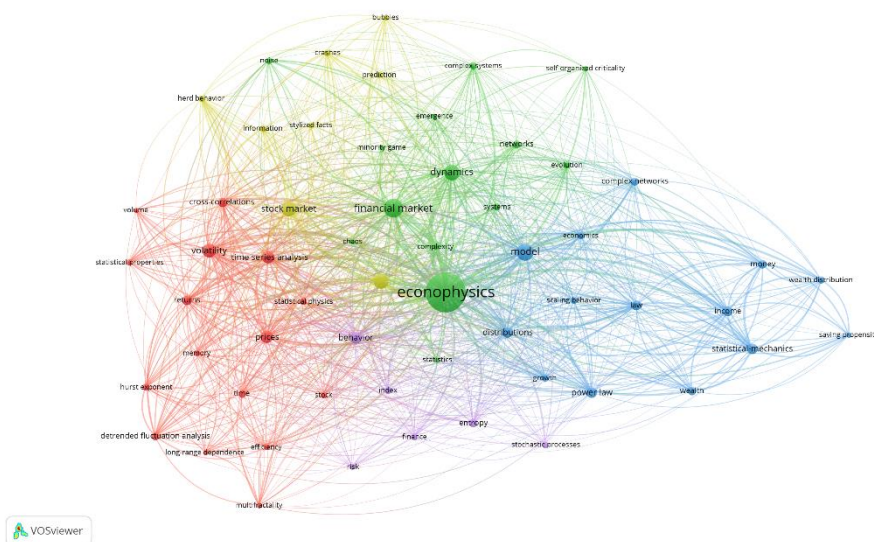
Figure 2: Keywords visualized
Source: Computed in VOSviewer by the author

Their relationship is evidenced in Figure 2. The figure created in VOSviewer has the following structure: larger dots represent keywords mentioned more often, thicker lines represent how often the keywords are found together, and the distance between dots represents the strength of the relationship between keywords. The colors represent the clusters identified in the analysis by VOSviewer.

In our data, by choosing a minimum rate of 20 occurrences of keywords, and keeping the default resolution of 1.00, five clusters were found. These clusters are detailed in the following table, and also in Figure 1, by the colors red, yellow, green, blue and violet.

The top keywords in the articles analyzed are "econophysics" (with 1095 occurrences), "financial market" (246 occurrences, also considering the alternative forms "financial-markets", "financial-market", "financial markets", "market", "markets" which we considered to be equivalent to it). Other important keywords by occurrence are "model" (199 occurrences), "dynamics" (168 occurrences), "stock market" (163 occurrences, including "stock-market", "stock markets", "stock-markets"), "fluctuations" (160 occurrences). Of interest are also the keywords "volatility" with 137 occurrences, "time series analysis" and its alternate form "time series" with 110 occurrences, "prices" (including "price") with 106 occurrences and "behavior" with 99 occurrences.

The central cluster, colored green, relates the field of econophysics (present also as a keyword) with the financial market, and its essential idea of studying the dynamics of said market.

Table 1: Keywords clusters

Cluster 1 (red)	Cluster 2 (green)	Cluster 3 (blue)	Cluster 4 (yellow)	Cluster 5 (violet)
volatility	econophysics	model	stock market	behavior
time series analysis	financial market	power law	fluctuations	entropy
prices	dynamics	statistical-mechanics	information	index

returns	networks	distributions	crashes	finance
cross-correlations	evolution	law	herd behavior	stochastic processes
time	systems	income	prediction	risk
detrended fluctuation analysis	complex systems	wealth	bubbles	
hurst exponent	noise	money	stylized facts	
statistical physics	complexity	complex networks		
stock	chaos	economics		
efficiency	minority game	wealth distribution		
memory	emergence	growth		
statistical properties	self-organized criticality	scaling behavior		
volume	statistics	saving propensity		
multifractality				
long-range dependence				

Source: Computed in VOSviewer by the author

The next cluster, colored blue, has its main keyword "model", and suggests that models, as a keyword, occur together with the concepts of money, wealth and growth, as well as with tools used in creating them, such as "statistical-mechanics". Another cluster, colored yellow, contains the stock market and its innate characteristics, such as fluctuations or crashes, and it represents some concepts where econophysics can be applied. The following cluster (colored red) is related to the last one, and it contains prices and notions of statistics and statistical physics that relate to the volatility of mentioned prices, being the main keywords in this cluster. The last and smallest cluster, relates behavior with finances and entropy, showing that in research the behavior in finance can be modelled through entropy or as a stochastic process.

4.2. Citations by country analysis
This type of analysis shows the relationships existing between teams of researchers and the networks that made them possible. This is presented in Figure 3, where the circles represent countries, and the different relationships between researchers from these countries, as well as the strength of these collaborations, judged by the parameter of citations. In this analysis we have considered the minimum number of documents to be 5, which is also the default setting, and out of 70 countries, only 42 countries met this threshold, as evidenced by VOSviewer.

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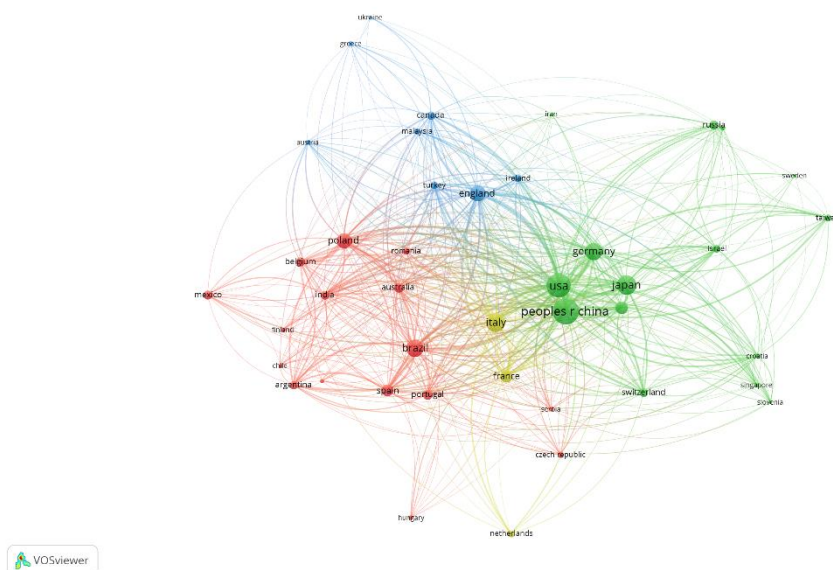
Figure 3. Citations by country visualized
Source: Computed in VOSviewer by the author

It can be observed that the countries with the largest number of documents are People's Republic of China (with 230 documents and 3668 citations) and the United States (with 198 documents and 5778 citations), both belonging to the same cluster and closely connected to each other, showing a close collaboration between researchers from these countries. Other countries with large number of documents and citations evidenced by our analysis are Japan (with 124 documents and 1796 citations), Italy (with 119 documents and 3389 citations), Germany with 105 documents and 2185 citations and Brazil, with 98 documents and 1554 citations.

Most belong to the same cluster, except Italy and Brazil which are part of their own clusters, colored yellow and red respectively. The top countries by documents published also show collaboration between their researchers, as shown in the figure. The countries who published the least documents are Ukraine, Sweden and Slovenia, of which Slovenia has a large number of citations (339) compared to the small number of articles.

The analysis returned four clusters, described in Table 2.

Table 2: Countries by citations clusters

Cluster 1 (red)	Cluster 2 (green)	Cluster 3 (blue)	Cluster 4 (yellow)
Brazil	People's R China	England	Italy
Poland	USA	Canada	France
Spain	Japan	Turkey	Netherlands
Australia	Germany	Ireland	
Portugal	South Korea	Malaysia	
Belgium	Russia	Austria	
Mexico	Switzerland	Greece	
Argentina	Israel	Ukraine	

India	Taiwan		
Romania	Singapore		
Czech Republic	Croatia		
Hungary	Slovakia		
Chile	Iran		
Denmark	Slovenia		
Finland	Sweden		

Source: Computed in VOSviewer by the author

Even delimited in these clusters, most countries are quite close to each other, despite belonging to different clusters. Thus, we have the main cluster (green) with the top contributing countries, closely connected with the yellow cluster that contains the European countries of France, Italy and Netherlands. The other clusters include Mediterranean countries, and countries from the developing world such as Brazil, and the cluster centered on England, containing also Turkey and Canada.

4.3. Citations by authors analysis

This analysis presents the most cited authors on the topic of econophysics, that are indexed in the Web of Science database. Using the threshold settings of minimum 5 documents per author (which were default) and at least 100 citations, VOSviewer evidenced a number of 47 authors that met these conditions, presented in Figure 3. From the analysis it resulted that the most cited authors are Stanley, H. Eugene, with 1996 citations and 27 documents, Zhou, Wei-Xing, with 1833 citations and 59 documents. Other authors who have been positioned at the top, judging by the analysis are Sornette Didier, with 861 citations and 20 documents, Preis Tobias, with 727 citations and 6 documents, and Podobnik Boris with 706 citations and 5 documents.
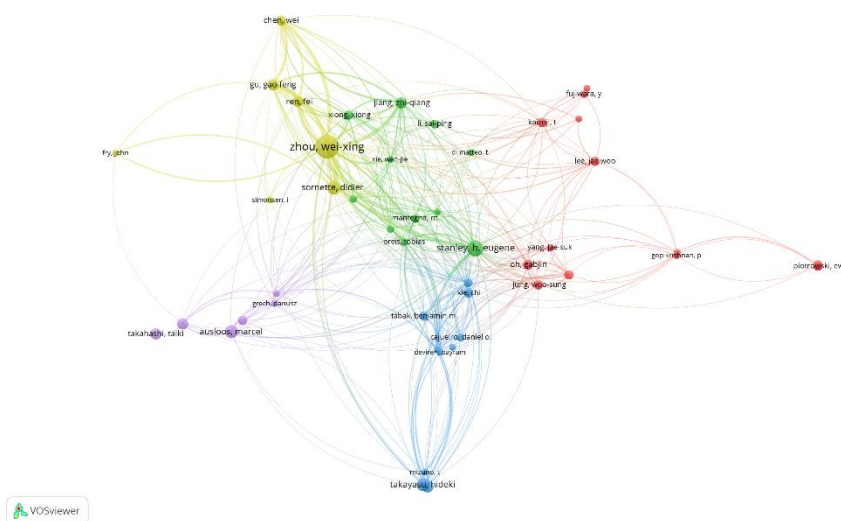
Figure 4. Citations by authors visualized
Source: Computed in VOSviewer by the author

From Figure 4, we observe there is a strong relationship between Zhou Wei-Xing and Sornetter Didier, belonging to the same cluster and having both large numbers of citations,

and in the center there is Stanley H. Eugene, as the larger dot in his corresponding cluster. The other 3 clusters are more dispersed, having a couple of outliers, with fewer connections to others, such as Piotrowski. In Table 3 the top authors by citations are presented, as well as the number of documents published, total number of citations, and the average number of citations. It can be seen that Preis, Podobnik and Fry all have a large number of citations compared to the smaller number of documents, namely five or six, while Zhou has a large number of documents with the smallest average number of citations from this selected group.

Table 3: Top authors by citations

Author	Documents	Citations	Average citations
Stanley, H. Eugene	27	1996	73.92
Zhou, Wei-Xing	59	1833	31.06
Sornette, Didier	20	861	43.05
Preis, Tobias	6	727	121.16
Podobnik, Boris	5	706	141.20
Jiang, Zhi-Qiang	14	540	38.57
Mantegna, Rosario	8	508	63.50
Fry, John	5	488	97.60
Lillo, Fabrizio	6	459	76.50
Fagiolo, Giorgio	5	453	90.60

VOSviewer categorized the size of the dots based on the number of documents published, therefore the largest ones in Figure 3 are not necessarily the authors with most citations, from Table 3. We observe that the authors Ausloos and Takayasu have corresponding larger dots, without having as many citations, also evidenced by not being in the center of the network produced in the software.

5. Conclusions

In this paper the objective was to identify the relationships between the most used keywords in the Web of Science database, on the topic of econophysics, as well as to establish a network of citations by authors and by countries. The results show that the most used keywords are "econophysics", "financial markets", "model", "dynamics" and "stock market", underlining the major applications of econophysics in studying the financial market and its dynamics by using models derived from physics.

The analysis by citations has shown the existence of a tight network between researchers from different countries, with most citations coming from China, USA, Japan, Italy, Germany, countries that are also close in the network analysis provided by VOSviewer. The same analysis when applied to authors revealed the top contributors in the field, with similar results to other recent studies (Sharma & Khurana, 2021), namely the inventor of the term econophysics, H.E. Stanley, and other important authors such as Zhou, Sornette or Mantegna.

The paper can provide a reference for researchers and prospecting authors that wish to publish in the field of econophysics, and for the general audience to understand key concepts regarding econophysics, as shown by the keywords analysis. Being a bibliometric

study on an interdisciplinary field, it can prove useful to both economists as well as physicists interested in applications of their concepts in economy.

The limitations of the paper are that only one database was used in the analysis, namely Web of Science, and that our analysis was based only on keywords and citations. The study can be extended to other databases, or to include co-authorship, by authors and organizations, and also citations by organizations, in order to identify the most relevant ones for the development of the field.

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CRISTALLISING A CONCEPT: A BIBLIOMETRIC ANALYSIS OF CORPORATE SOCIAL RESPONSIBILITY AND SUSTAINABILITY

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Abstract: *Corporate Social Responsibility (CSR) is still a developing domain both in study and practice surrounded by a lot of confusion as many authors have previously shown despite the considerable broad spectrum of approaches. Starting with the Ancient times and until nowadays, the notion has displayed sometimes chameleonic features and there are still discussions regarding a consensus on the topic. While the CSR concept can be traced back to Ancient times and contoured in the 1950's, the Corporate Sustainability (CS) concept can only be traced to the late 1980s when the concept of sustainable development (SD) was gaining momentum, as research conducted in the field has shown. Both CSR and corporate sustainability (CS) concepts have been in the spotlight in the last two decades and some researchers even use the terms interchangeably while others argue that the terms are different: similar, but not the same. Other authors dispute that each concept has a different origin that unravels a distinct pathway but they have both focalized on the same spot, using similar definitions, assumptions, same networks and measurement. More recent research suggests that CSR should be regarded and integrated as a component of CS strategy either as a transitional step or the final one for the business rather than keeping the two concepts on different pathways.*
Even though the concepts are brought lately more together, the common theoretical aspects need more attention and a thorough discussion, some authors argue. Therefore, this research proposes a bibliometric analysis of the existing literature on CSR and CS during the past three decades since the globalisation of the terms. The approach of this study is comparative, seeking to picture the evolution of the global interest on the subject compared to the focus of the Romanian research regarding CSR and CS and SD.

Keywords: *CSR; corporate sustainability; sustainable development.*

JEL Classification: *M14; L25.*

1. Introduction

There is a growing interest globally towards Corporate Social Responsibility (CSR) especially since the issuance of the CSR and sustainability reports (the first reports were published in the 1980's by companies that were dealing with image difficulties – chemical and tobacco industry) where companies share annually with their stakeholders and communities the actions taken to integrate the principles of sustainable development and corporate responsibility in their day-to-day actions. These reports are important indicators regarding company's transparency, enabling them to analyse the impact of their agenda in order to improve the CSR approach and strategy. Moreover, the CSR and sustainability reports hold an important strategic potential because stakeholders (employees, customers, investors, media and other interested parties) can base their decisions on the goals the companies display in these reports and the public image "advertised" in the reports builds up the companies' portrait worldwide.

The academic field has also increased the attention on the corporate social responsibility issue. This can be assessed by the impressive number of research articles published in the last decade in academic journals and magazines. A bibliometric analysis will be further presented in this paper.

CSR is still a developing domain both in study and practice surrounded by a lot of confusion (McWilliams and Siegel, 2011; Garriga and Mele, 2004) despite the considerable broad spectrum of approaches.

Starting with the Ancient times and until nowadays, the concept of CSR has displayed sometimes chameleonic features and there are still discussions regarding a consensus on the topic.

The present research consists of a literature review of the history and concept of corporate social responsibility and a bibliometric analysis regarding the number of publications on the topic. In the first part of the paper, a chronological and conceptual depiction of the evolution of the term was presented and the next section is focused on analysing different CSR paradigms, such as the business ethics approach and the stakeholder management theory.

2. Milestones of the concept evolution in literature

The concept of CSR can be traced back to ancient Roman times (Chaffee, 2017), when Roman senators introduced laws to foster safety for the poor and to ensure a basic state of equity. Evidence of rules and regulations that paved the way for the modern concept of CSR can be found in Christianity, referencing the Bible but it can be traced back also to Eastern cultures such as to King Hammurabi's Code around 1700 BC. As Vayanos points out in "The History of Corporate Social Responsibility" (2010), on every continent we would enquire, we would find early evidence of incipient stages of the CSR incentives that paved the way for building a concept in the modern years.

The early stages of socially responsible behavior consisted of rational resource usage, equity for the poor or responsible treatment of the wealthy towards the others, therefore mainly philanthropy and paternalism.

CSR was first defined as a concept the by Howard R. Bowen in 1953, setting the1950 - 1960 decade as the starting point - the early days of the modern era of social responsibility (Agudelo et al, 2019). Bowen (1953) sets a foundation for the development of the concept and introduces the idea that businesses must consider those politics that take into account the wellbeing of the society.

Building on that premises, the concept evolves in the 1970's from a managerial perspective, focusing on safety and labor rights (Preston and Post, 1975; Sethi, 1975; Carroll, 1979) and the corporate social responsibility literature is broadening, attracting with its expansion several critics. The most vocal critic is Milton Friedman (1970) who sustained the idea that the main purpose of the business is to create profit. As a response and in order to provide a solution to these critics, Carroll (1979) proposes a pyramidal approach that encompasses the main responsibilities but keeping the economic purpose at the base of the pyramid, incorporating the philanthropic one at the top. Carroll's construct was firstly depicted in 1979 and further developed as a pyramidal structure in 1991.

In the 1980's the concept of business ethics becomes an increasingly important part of the business vocabulary, making a new way for the operationalization on CSR (Jones, 1980; Tuzzolino and Armandi, 1981; Strand, 1983; Wood, 1984) due to the fact that corporations were given more power with governments reducing their role in regulating corporate behaviour (Agudelo et al., 2019). As a result, the business ethics concept begun to develop and terms as stakeholders became popular (Schwartz et al., 2008). This new facet broadened the CSR concept and scholars introduced complementary or alternative ideas

such as corporate social performance, corporate social responsiveness or stakeholder theory (Carroll, 2008).

The globalization of the CSR inevitably took place in the next decade and the concept of "The Triple Bottom Line" was first introduced by Elkington in 1998, considering for the first time a new approach that adds into balance the companies' impact on society, environment and economy. This development was influenced by the creation of several international authorities that proposed regulations and set standards taking into account the issue of sustainable development. During this decade, the United Nations adopted the 21 Agenda and the Kyoto Protocol, the United Nations Framework Convention on Climate Change (UNFCCC) (1992) was signed and the European Environment Agency was created in 1990. These international events have indirectly set certain standards for corporations (Agudelo, et al, 2019). During this decade, the CSR concept started to draw more attention and important contributions are brought by Donna J. Wood (1991). Wood generated a unified theoretical concept building on the models of Carroll (1979) and Wartick and Cochran (1984). She formulated three dimensions to draw a model for Corporate Social Performance. Other important contributions during the 1990's come from Carroll's Pyramid (1991)
with the purpose to provide a balanced approach for the businesses in their social endeavors, keeping in mind their main purpose at the base of the pyramid- profit creation with the philanthropic responsibilities at the top (this approach will be discussed in a next section of this report). Going forward, Burke and Logsdon (1996) introduce the concept of strategic CSR with the purpose of creating a direct proportional relation between financial performance and CSR. They identify five dimensions of strategic CSR that will be further approached in this paper.

Starting with the year 2000 and the following decade, CSR receives even more recognition, expansion and implementation, building momentum for a strategic approach of the CSR provided by the academic publications (Smith, 2011; Lantos, 2001; Kramer, 2006; Marrewijk, 2003; Werther and Chandler, 2005; Husted and Allen, 2007). In the 2010's in the CSR discourse, the emphasis was placed on the creation of shared value (Porter and Kramer, 2011; Trapp, 2012; Chandler, 2016).

The concept of CSR has been studied from various perspectives since its appearance and a short history and the main milestones take us from the paternalism and philanthropic approach in the Ancient Times through many facets that lead to today's idea of sustainable development as presented in Figure 1. As discussed previously in this paper, the approaches are connected and mostly determined by the international climate and events and it is always tending to stabilize a concept that supports ethical, balanced sustainable value from different standing points.

Progressing on the trodden road of the CSR concept through all the stages that outline today's approach to CSR and sustainable development -yet incorporating all the milestones as important pieces of the puzzle- when faced with the global turbulent environment, deeper meanings can be associated. Therefore, nowadays especially in the context of the global pandemic, taking into consideration that risks are growing in times of economic uncertainty and that protecting existing contracts impose more risks (Coase, 1960) we can also detect a certain amount of new opportunities that arise on the other hand because social capital can be built through CSR incentives previous to the crisis period. These incentives will reduce the contracting costs due to existing trust and loyalty created through sustained long-term relationships with the external stakeholders (Chang et al, 2014).

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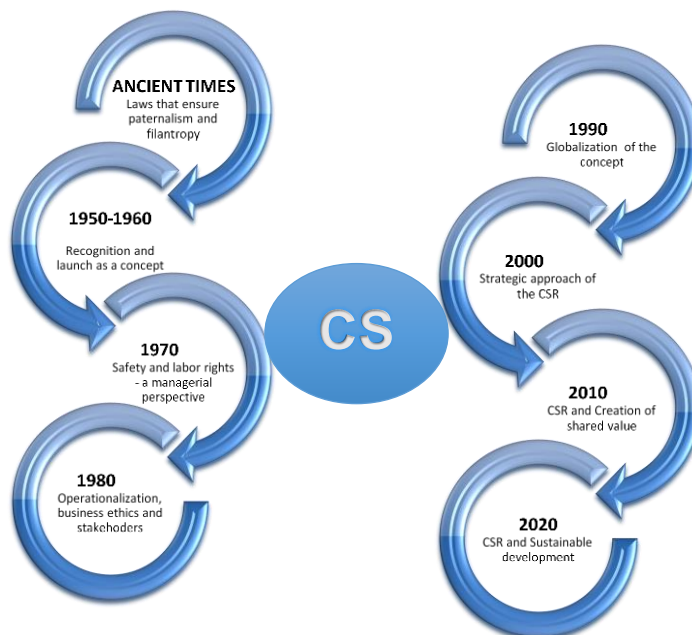
Figure 1: Milestones in the CSR concept development
Source: Author Representation after Agudelo et al., 2019

While the concept of CSR has been discussed and defined by numerous authors, one of the first authors to define it was Howard R. Bowen (1953) as "a commitment of entrepreneurs to seek strategies to make such decisions or carry out such activities which are desirable in terms of goals and values to our society" (Bowen, 1953, p 6, apud Carroll, 1999 p. 270). Taking into account a more recent definition given by Holme and Watts (2000), CSR is "the commitment of business to contribute to sustainable economic development, working with employees, their families, the local community and society at large to improve their quality of life". All things considered and each of the definitions we would cite here would deliver us the conclusion that CSR has decisive impact areas consisting of economy, society and the environment. As far as the economic area is concerned, businesses focus should be on improving the processes that pursue economic development and minimize the economic impacts and in regards to the societal point of view, they should be aiming on improving the quality of life (Radoslav, 2017).

There have been contradictory opinions in the literature regarding the role of business in society and Friedman (1970) argues that the only responsibility of the business is to create profit as long as it stays within the rules, referring to CSR as "a fundamentally subversive doctrine". However, practice evidence and research studies have proved that CSR activities benefit both the society and the company, adding value in times of economic growth but also adding substantially more value in times of uncertainty.

There is a lot of confusion and controversy around the CSR concept due to the wide and diverse approaches on one hand even if encompasses and builds itself on several theoretical established grounds such as stakeholder theory, business ethics, sustainable development and on the other hand also the common ground of these paradigms in itself can generate at times misunderstandings and criticism.

Firstly, the concept developed naturally from ancient times and based its grounds in several other theoretical concepts such as business ethics, sustainable development, stakeholder theory, ethical consumerism and human rights through time. Developing an independent concept at the incidence of these theories should provide more light on the subject but actually it can create more controversy and generate critics because bringing more topics in the discussion can also create more confusion.

3. Corporate Social Responsibility and Corporate Sustainability

Both CSR and corporate sustainability (CS) concepts have been in the spotlight in the last two decades and some researchers even use the terms interchangeably (Montiel, 2014) while others argue that the terms are different: similar, but not the same (Bansal et al., 2017). Bansal and Song (2017) dispute that each concept has a different origin that unravels a distinct pathway but they have both focalized on the same spot, using similar definitions, assumptions, same networks and measurement. The authors recommendation for scholars is that rather than assuming that both constructs are the same, they should explore the differences, the complementarities and the integration of CSR and CS.

More recent research suggests that CSR should be regarded and integrated as a component of CS strategy either as a transitional step or the final one for the business rather than keeping the two concepts on different pathways (Ashrafi et al., 2018).

Even though the concepts are brought lately more together, the common theoretical aspects need more attention and a thorough discussion (Ashrafi et al., 2020).

While the concept of CSR can be traced back to Ancient times and contoured in the 1950's, the CS concept can only be traced to the late 1980s when the concept of sustainable development (SD) was gaining momentum (Schwartz et al., 2008).

Brundtland Commission Report defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs"(World Commission on Environment and Development- Our Common Future, 1987, p.41). This definition was seen as ambiguous and through time scholars tried to redefine SD and by 1992 there were more than 70 different definitions and the number increased to 300 by 2007 and researchers tried since 1990 to incorporate the SD concept and operationalize it to incorporate it into corporations, especially in regards with the environmental dimension (Ashrafi et al., 2020). Hart (1995) tried to underpin the benefits of incorporating environmental aspects into business. Other theoreticians tested several approaches to address and incorporate CS into businesses' decisions using resource based theory, the stakeholder's theory or the institutional theory (Ashrafi et al., 2020).

Through time, SD theory evolved and in 2000s a new and most cited definition was provided for SD by Dyllick and Hockerts (2002). These authors defined CS as "meeting the needs of a firm's direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, and communities), without compromising its ability to meet the needs of future stakeholders as well" (p. 131). The definition and conceptualization of CS is still evolving (Montiel, 2016).

Recent literature stresses the need for a clearer conceptualization of CS that would help businesses to shift to the new paradigm and incorporate it into its practices although theoreticians agree that there is no 'one-size-fits-all' business model that suits the idea of sustainability (Ashrafi et al., 2020). There has to be a conducted research that helps identify the proper factors that will help businesses harness sustainability through pragmatic solutions and initiatives (Landrum, 2017). In order to attain this purpose, there has to take place an investigation regarding the different levels of corporate sustainability sophistication that companies display in connection to their social, economic and environmental

performance, together with balancing the stakeholder's partnerships that benefit the idea of sustainability (Amini, 2014).
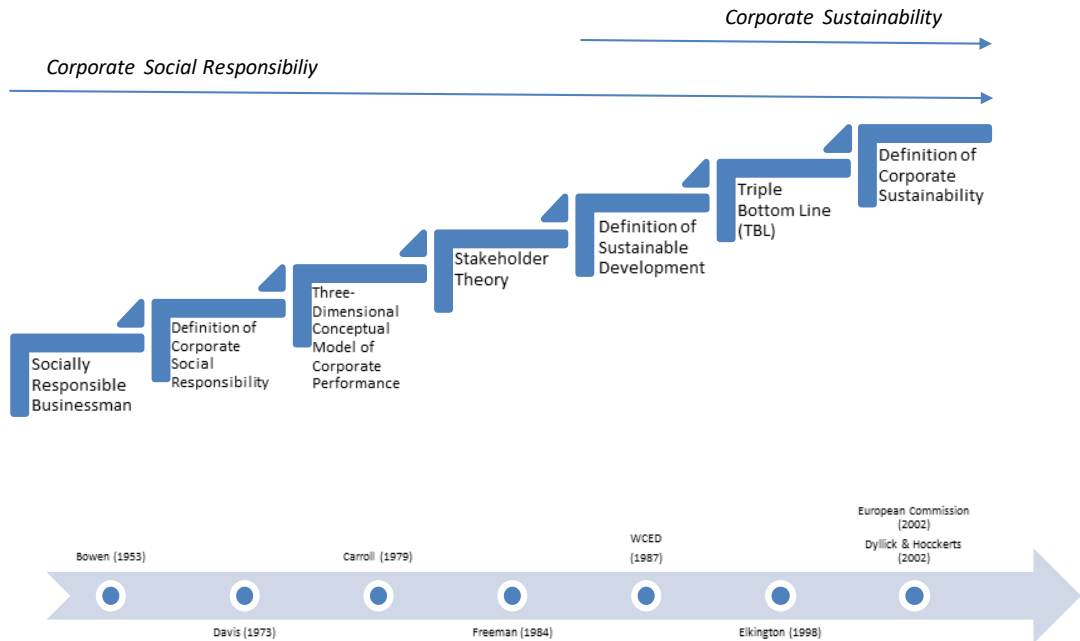
Figure 2: Chronology and theory development of corporate social responsibility and corporate sustainability
Source: Author's interpretation after Ashrafi et al., 2020

Figure 2 is a representation of the implications of the three theories that revolve around the sustainability and CSR concept: the institutional theory, the resource-based theory and the stakeholder theory. It can all be encompassed in an integrative theoretical framework as presented by Ashrafi et al. (2020), arguing that there is a dual force that drives the CSR and SD incentives: internal, referring to the resource-based theory and external, based on the institutional theory, in order to meet the interests of the multistakeholders (both internal and external), constructing on the stakeholder's theory. The authors go further and suggest that the three theories can be used in order to promote identification and operationalization of CSR and CS into the firm's strategy.

3. A bibliometric analysis regarding the number of publications on the topic

Corporate social responsibility has gained an increased attention during the last decades and the international pressure applied by stakeholders on the companies can be observed especially after numerous 'scandals' were reported regarding important firms such as banks, energy or telecom companies and others (Wagner 2006; Peters and Roess 2010; Mallen 2012).

As a response, the academic field shifted interest on the study of CSR and the raise in the number of publications can be observed in Table 1 and Figure 3. Together with the raise in the number of research publications on the topic of CSR, also practitioners started to leverage their position and enhance stakeholder management. The evolutions can be observed by analyzing the actions of several organizations that have important influence worldwide that have been mentioned before in this study (OECD 2001; WBCSD 2002; UN Global Compact 1999; International Business Leaders Forum 2010a; International Organization for Standardization 2010, p. 4).

Table 1: Number of Publications on Corporate Social Responsibility

Year	Web of Science	Science Direct	PRO Quest
2000	34	575	808
2001	44	601	1132
2002	51	617	1559
2003	87	615	2154
2004	126	682	2753
2005	164	733	2956
2006	201	893	3263
2007	273	847	4429
2008	430	939	4084
2009	602	1031	5781
2010	732	1109	7980
2011	930	1454	8658
2012	939	2012	11.749
2013	1181	2023	11.974
2014	1296	2834	16.520
2015	2134	3335	16.663
2016	2417	2750	18.769
2017	2797	2638	15.213

Source: Author's own work, data gathered from Web of Science, Science Direct and Pro Quest databases

Table 1 contains data gathered from Web of Science, Science Direct and Pro Quest databases for the number of publications in the last two decades. There was a spark in the international interest toward CSR starting with 1990, therefore in the first decade an ascending trend is expected and the interest was in this research to analyze the evolution after the first decade after the globalization of the term. The search in the databases was conducted using the term "corporate social responsibility". The numbers are resulted by using the following categories for each database:
For Science Direct, the numbers reflect the advanced search in the following categories:
- Review articles.
- Research articles.
- Case reports.
- Data articles.
- Editorials.
- Replication studies.

For Pro Quest database, the search was conducted for the articles in following categories:
- Source type: reports, conference papers and proceedings, working papers, standards and practice guidelines.
- Document type: all.

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    ■   Language: all.

For Web of Science Database, the numbers reflect the advanced search in the themes and titles of the publications using the following categories:

    ■   Language: all.
    ■   Document type: articles; editorials; data study; case reports; data papers.

The numbers gathered in Table 1 can be artificially increased due to the fact that some of the publications could be encountered in more than one of the databases. Furthermore, regarding the qualitative perspective of this bibliometric analysis, it is relevant to mention that the Web of Science database usually gathers some of the most reputational and cited publications.
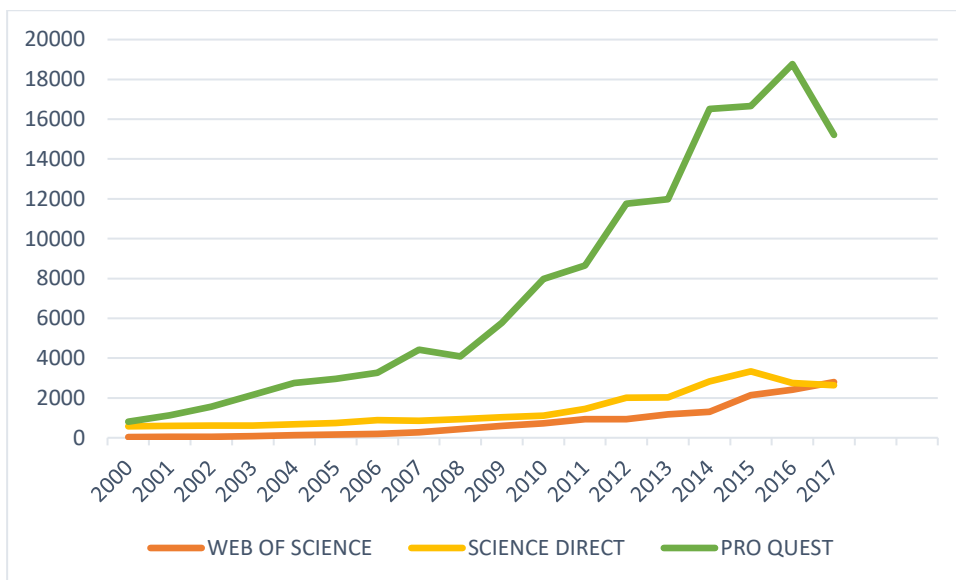
Figure 3: Evolution of the number of publications on "corporate social responsibility"
Source: Author's development, data gathered from Web of Science, Science Direct and Pro Quest databases

Figure 3 pictures the time evolution of the number of publications containing the term "corporate social responsibility" for a better sight of the evolution. The findings bring us to the conclusion that there is a growing opportunity in terms of conceptualization and operationalization of the CSR especially because of the growing importance in the business field due to the strategic potential of shared value (Chandler, 2016). At the same time, in the scholarly literature the number of publications increased notably from 1109 in 2010 – Science Direct to 3335 in 2015 and from 7980 in 2010 for Pro Quest to 16.663 in 2015 and 18.769 in 2016. It is interesting to observe that for the Pro Quest database, the number of publications had a slight drop in 2017 after being doubled in 2014 compared to 2011. The trend for Web of Science and for Science Direct publications on the topic of CSR are however following an ascending trend, underlining the idea that the topic is still in the spotlight and it gathers increased attention in the academic field.

Keeping the sight still at the ProQuest database numbers, the peak in 2016 with 2.35 times increase compared to 2010 can be attributed to the emphasis on the creation of shared value idea in the academic field, which sparked a special interest among researchers and practitioners.

The increase in the number of publications shows that the concept remains relevant even if the contributions are not necessarily brought in the area of shaping the conceptual construct, but rather around its implementation and on specific areas of performance (Agudelo et al., 2019). Therefore, it cannot be only attributed to the new recommendations and regulations that shaped the international policy after 2010.

4. A bibliometric analysis of the publications regarding CSR in Romania

Considering the data that can be provided by analysing the big picture of the Romanian context, the research has been extended to country reports and academic publications regarding the education and CSR for education in Romania. Therefore, CSR has gained momentum in the 1990s when a great number of NGOs (non-profit organizations) were funded especially focused on humanitarian goals.

In the search of more data on the topic, it can be easily observed that nowadays, the concept in Romania still needs clarification because the meaning of CSR in somehow blurred and perceived by companies mostly just as philanthropic acts transposed from a concept introduced by corporations. Therefore, the case of Romanian companies involved in CSR is simply reduced to imitating foreign practices (Obrad, 2011). Despite the growing interest in the area, social responsibility programs and incentives are still at early stages of development (Baleanu et al., 2011) and CSR strategy is especially targeted at gaining reputational capital (Zait et al, 2015) without a consequent strategy and mostly circumstantial and subjective. The pathway for development and coordination to the European way is influenced by specific cultural factors and perceptions. In most of the cases CSR in Romania is still perceived as part of Marketing and PR and seen merely as philanthropy with an important inclination towards donations, sponsorships and public relations (Chersan, 2019). Although there are shy endeavours in the area of CSR in Romania, Popa (2015) highlighted that CSR activities in Romanian companies focus especially on areas relating to education, environment and community support.

Table 2: Number of Publications on Corporate Social Responsibility Concerning Romania

Year	Web of Science	Science Direct	PRO Quest
2000	0	10	55
2001	0	8	64
2002	0	14	86
2003	0	7	91
2004	0	7	139
2005	0	14	179
2006	0	21	226
2007	1	25	341
2008	7	13	329
2009	14	26	691
2010	5	24	857
2011	23	42	964
2012	9	117	1190
2013	12	94	1285
2014	27	216	1654
2015	30	251	1715
Year	Web of Science	Science Direct	PRO Quest
2016	16	88	1951
2017	16	83	1506

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Source: Author's own work, data gathered from Web of Science, Science Direct and Pro Quest databases

In the international context where the number of publications concerning CSR grew exponentially in the last two decades and the presumption is that the same trends were followed in Romania, therefore the search was conducted precisely using the same indicator.

There was a spark also in the Romanian academic research interest toward CSR starting with 1990 when the concept became familiar to the domestic environment after the fall of the communism when corporations started to gain interest in the Romanian economy, bringing the new-then concepts of social responsibility and therefore in the first decade an ascending trend is expected and the interest was in this research to analyse the evolution after the first decade after the globalization of the term. The search in the databases was conducted using the term "corporate social responsibility" and "Romania". The numbers are resulted by using the previously mentioned categories for each database as in the search conducted for the international area.

The data contained in Table 2 is gathered from Web of Science, Science Direct and Pro Quest databases for the number of publications in the last two decades keeping the same parameters as in the search conducted for Table 1 but in the search the word „Romania" was added in order to refine the analysis for the publications concerning the country. The numbers can be artificially increased also in this search due to the fact that a number of publications may be in more than one of the researched databases. Romanian literature for CSR is as expected significantly lower compared to the international numbers but as it can be observed in Figure 4., they are following the same ascending trends.
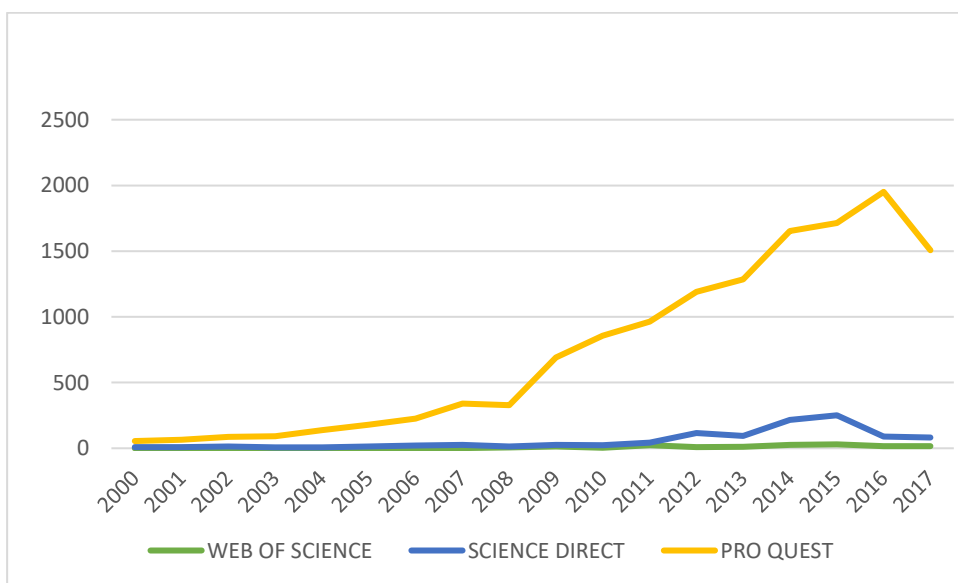
Figure 4: Evolution of the number of publications on "corporate social responsibility" concerning Romania
Source: Author's development, data gathered from Web of Science, Science Direct and Pro Quest databases

As depicted in Table 2, the publications for CSR regarding the Romanian context published on the Web of Science database started timidly with only one publication in 2007, reaching the peak in 2015 with 30 publications. The peak is however reached in 2015-2016 following

the international trend even though at a lower level but the growth is exponential, displaying the flourishing raise in interest regarding the topic. This trend can be observed in Figure 4. Considering the data provided by this search, even if the numbers are not high, the peak still consists of the year 2016 and the growing rate is notable in the case of Romania, from 2000 to 2016. The growing interest can be attributed to the international trends but also to the growing number of corporations that relocated to Romania during these past years, bringing with them their corporate and CSR culture.

If we were to compare the peaks, there were 18.769 publications regarding CSR internationally and only 1951 Romanian studies on the topic in 2016, almost 10 times less. The difference is considerable and leads us to the conclusion that the subject is insufficiently researched in Romania.

5. Conclusion

As far as the concept of CSR is concerned, it was firstly defined as a concept the by Howard R. Bowen in 1953. The evolution of the concept was not smoothly agreed by theoreticians and several approaches were tested throughout the time and it drew several critics toward it, regarding the role of business in society and its objectives. After 1990, CSR drew a lot of attention in the academic and business field and the trend remained ascending even in the next two decades. Paradigms revolve around the business ethics theory, stakeholder management theory and sustainable development. These theories were analysed in the paper and a conceptualization of the often-confused terms "corporate social responsibility" and "corporate sustainability" was discussed. The two concepts are often used with the same meaning by some scholars and highly criticized as being two distinct concepts by others.

The rationale for engaging in CSR activities is argued by a vast literature regarding the empirical relationship of CSR and firm value and also by the fact that prosper societies provide the fertile ground for companies to develop.

The bibliometric analysis regarding the number of publications on CSR and CSR in Romania shows a similar ascendent trend in the last two decades worldwide and in Romania, with a peak in 2016 due to the intensive research regarding the strategic managerial approach during the period and also as a consequence of the new international regulations and treaties.

The findings gathered in this study lead to the conclusion that further research in the area of CSR is necessary and that especially studies for the Romanian context are needed due to the newness of the concept in the area and also due to the fact that the term is still under a lot of confusion.

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EXAMINATION OF DIGITALIZATION IN HUNGARIAN AND ROMANIAN COMPANIES

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Abstract: *2020 posed a series of unforeseen challenges for economic actors. Digitalization, one of the most critical drivers of innovation, provided a lifeline for organizations who anticipated the opportunity and ramifications of a global pandemic. Digitalization offered alternative solutions for contacting partners, serving customer needs, retaining customers, and creating the possibility of online administration. The present study seeks to answer the question - using a database of ongoing research - to what extent are Hungarian and Romanian businesses able to discover the characteristics of the digital transformation, where and to what extent digital technology plays a role in the supply chain, and whether they have started digitization. The developed quantitative database was analyzed and processed utilizing SPSS 25 statistical software. Descriptive statistics and frequency analysis were run, followed by an analysis of variance to explore the existing relationships. For the multiple mean comparison test, the Tamhane test was used to analyze for differences in groups. As a result of the evaluation, the authors found statistical support that managers opinions on Internet Platforms creating more accessible business agreements is dependent on firm size with larger firms placing more emphasis on the benefits of Internet Platforms than smaller firms. The organizations recognize the potential of digital developments, but these developments are accompanied by a high degree of mistrust. Digital technology is typically used only to conduct processes during production or service activities and not as commonly conducted for increasing market share or expansion. Based on the authors' proposal, the broadest possible application of digital technology within a company can provide its user a long-term survival, competitive advantage, and further development opportunities.*

Keywords: *digitalization; innovation; platform business model; platform-based businesses*

JEL Classification: *M21; L1; D4*

1. Background

Platform-based businesses are the "consequences" of the digital revolution that began a few decades ago. According to a McKinsey survey in 2018, by 2025, more than 30% ($ 60 trillion) of global economic activity will be streamed by digital platforms (McKinsey, 2018). In the same year, PwC assessed the pace of digitalization of companies by comparing companies in the Asia-Pacific region, the Americas, and EMEA (Europe, Middle East, and Africa). Their research has yielded less favourable results for companies in the EMEA region, as they "are unable to combine their strategic, operational, technological and human capabilities and rarely involve their partners in their business models in order to create value for their customers" (PwC, 2018: 7). The European Commission has measured the trend of digital technology corporate integration (DESI index) in the European Union's member states every year since 2016. As of 2020, Hungary's commitment to digital technologies only exceeded Romania and Bulgaria's commitment. (European Commission, 2020). At the EU level, the

integration of digitalization processes has been more common in large companies. The majority of small and medium-sized enterprises (SMEs) are not using digital technologies at a system level.

However, the past year has left few viable alternatives for businesses. Due to the Covid 19 measures, 2020 was the year of the digital transformation (Némethi, 2021). In the present study, the authors are looking for answers to three key questions 1) to what extent can characteristics of the digital transformation can be discovered in the business enterprises in Hungary and Romania, 2) which and to what extent resources play the most prominent role in businesses and 3) to what extent have businesses initiated new digitization and networking policies in their business activities?

2. Literature background

A platform is a business model that creates value by facilitating exchanges between two or more interdependent groups, usually consumers and producers. To make these exchanges happen smoothly, platforms harness and create large, scalable networks of users and resources that can be accessed on-demand (Figure 1).
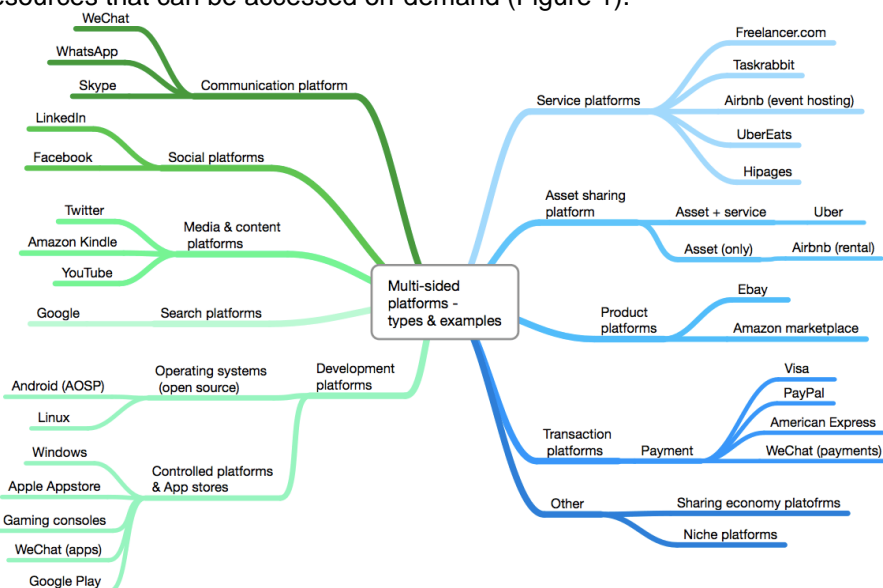
Figure 1: Types and examples of platform businesses
Source: (Uenlue, 2017)

The digital revolution gained momentum in the 1990's on how business relationships are implemented. As competition changes, businesses are undergoing a paradigm shift due to digital innovation (Jacobides, 2019; Watts, 2020). Competition is gravitating towards finding new relationships and working together and less towards finding alternative value propositions. Digital platform-based businesses have the following characteristics:

- allows interaction between two or more different user groups (usually sellers and buyers) (Hagiu and Wright, 2015; Rochet and Tirole, 2003; Rysman, 2009; Evans, 2003);
- creates interdependence between participants due to indirect and positive network effects (Hagiu and Wright, 2015);
- provides the ability to track interaction events between parties (Parker et al., 2016).

The essence of the platform-based operation is that manufacturers and service providers are interconnected in separate ecosystems. Platform-based organizations can more effectively reach users than traditional business actors (buyers and sellers) due to the indirect network effect, resulting in higher value in this non-linear value chain (Varga, 2018) Applying a mobile application, creating a website, or setting up a web store is not the same as platform-based operation, as a platform is not just a piece of software used. In this case, the company continues to operate on a value chain basis; the value creation process does not significantly change since the value remains the product or service created. Firms limiting themselves to traditional websites only create an alternative interface to address their partners for dialogue or sales. A platform-based business model is a holistic approach to the platform business that focuses on building relationships and expanding the network, facilitating interaction between two or more participants. The platform's role is matchmaking through matching demand with appropriate supply alternatives, providing techniques to facilitate transactions, establishing a governance structure, setting rules and standards to increase trust, maintaining quality and achieving the desired indirect network impact. (Hermans, 2015).

There are two phases to value creation for platform-based companies: networking and creating transactional opportunities. The platform aims to maximize the number and value of transactions and achieve through indirect network impact. To do this, firms apply digital enhancements that increase network efficiency (Van Alstyne et al., 2016; Hagiu, 2013).

3. Materials and methods

The present study is based on the results of a questionnaire survey. With the questionnaire, the authors assess the practical implementation of corporate strategy-making and the use of the opportunities offered by digital developments in companies. Entrepreneurs were contacted in person (telephone and e-mail) and asked to forward the questionnaire to their business community if possible. To date, 90 entrepreneurs from Hungary and Romania have completed the questionnaire.

The developed quantitative database was processed using SPSS 25 statistical software. Descriptive statistics and frequency analyses were performed, and an analysis of variance was run to determine if any significant differences in managers reporting Internet Platforms make business agreements more assessable were present based on firm size. After determining a significant F test on ANOVA, Tamhane's T2 test was run to determine where the differences between groups were. The selection of methods and the evaluation of the results were based on the literature recommendations of Sajtos and Mitev, (2007) and Huzsvai and Vincze, (2012).

4. Results and discussion

In the first part of the questionnaire, information on the main characteristics of companies was surveyed.

Based on the answers, it was determined that 65.6% of enterprises operate as limited liability companies (LLCs), followed by self-employed persons (21.1%). The respondents include six public limited-liability companies (PLCs) (6.7%), four limited partnerships, and two other community-owned organizations.

70% of the responder companies were based in Romania, with the remaining 30% located in Hungary. The companies are mostly privately owned (92%). There is an equal distribution of the level at which they carry out their activities: local, regional, national, and global. Around

68% of enterprises operate in the service (tertiary) sector, 21% in the secondary sector, and the remaining 10% are almost equally divided between the primary and quaternary sectors. In terms of the size of the enterprise (Figure 2), 68% of the participants operate as micro-enterprises, i.e. they employ fewer than ten people permanently, and their turnover or balance sheet total does not exceed EUR 2 million. 20% were small enterprises, 8% were medium-sized, and four large enterprises were among them. Of the four large companies, three operate as PLCs and one as an LLC.
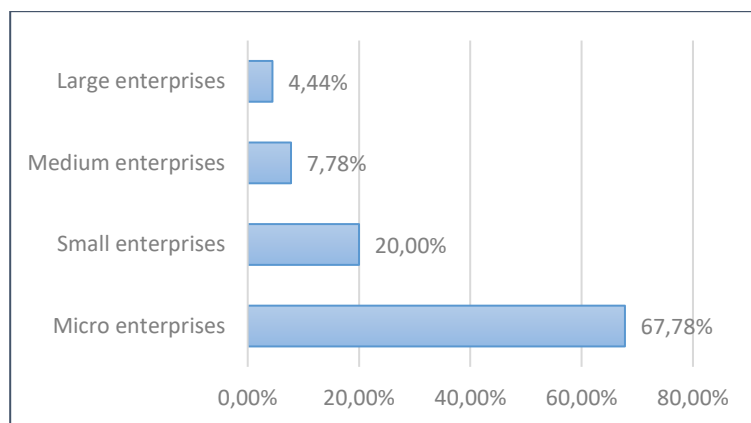
Figure 2: Size distribution of enterprises (n = 90)
Source: own research and editing, 2021

In terms of the scope of activities, the enterprises are quite diverse, but Sector C (manufacturing), G (trade, repair of motor vehicles), and M (professional, scientific, and technical activities) are the most represented, accounting for more than 50% of the organizations. Approximately 48% of businesses operate on a B2C (business-to-consumer) business model, so the business sells its products or services to individuals as end-users, and 37% operate in a B2B (business-to-business) business structure.

Nearly 56% of the managers surveyed believe that the industry they operate and compete in is characterized by moderate growth, 32% say the industry is stagnant, 8% are declining, and only 4% rate it showing a dynamically increasing trend.

Just over half of businesses (52%) have a website, but only 14% of respondents have a web store. Most businesses with a web store (70%) operate on a B2C business model, selling their products directly to end-users.

Nearly 75% of the companies prepare a formal plan of some capacity (be it a financial plan, a strategic plan, or a business plan); typically (55%) means planning for one year. The planning period of 3 years or more is typical for only 20% of the companies preparing the plan. A quarter of the companies stated that they did not generate a plan to guide its operation, explore its development opportunities or point out their limitations. The planning task is typically the owner's responsibility; almost 80% chose this from the options offered.

Regarding assessing the market position vis-à-vis competitors, 48% considered the firms to be in a better position (40%) or significantly better (8%) than its competitors, and 39% considered it similar. According to the respondents, the quality of the product or service offered, the ownership and management approach and the financial resources contribute the most to their company's performance. Of the ten factors listed, respondents indicated they believe R&D contributes the least to current business performance.

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5. Digital technologies in respondent companies

Half of the respondents do not have a website, and 85% do not have a web store, i.e., only 15% of the respondents' products or services can be found on the internet. 70% are targeted at the end-user in this way. 60% of the companies surveyed use some form of the integrated corporate governance system. Most often, process support systems, followed by communication support systems, and decision support systems were mentioned in third place. 10% of businesses believe that sharing economy type businesses are present in their industry in the following areas: shipping, online shopping, online sales, professional services, personal services through the app, and online content. Only 33% of respondents indicated that platform-based businesses posed a threat to their operations. To avoid this danger, they should consider the following responses:

- developing a web store
- developing an online contact option (supplier and buyer)
- introducing online marketing
- improving the quality of customer service through data mining and data analysis

Respondents consider the essential resource to be the partnerships they possess and the knowledge that their human resources possess. As an essential resource for growth, the information held is only the third of the listed options, digital data analysis, which would make the market opportunities recognizable, although hardly typical.

In research, we assumed that there is no correlation between firm size and the use of digital technology, and the following hypothesis was developed:

H0: There will be no difference in managers' perceived importance of Internet Platforms making business agreements more accessible based on firm size.

To determine statistical significance if respondents working for larger firms consider internet platforms to produce more accessible business agreements, an ANOVA was run yielding an F of 2.14, which corresponds to a significance level of 0.08 based on our sample size of 90, allowing rejection of the null hypothesis. Table 1 below used Tamhane's T2 test to determine group differences since it is unknown where the differences between the groups are.

Table 1: Tamhane's T2 test (multiple comparative test) (n = 90)

Multiple Comparisons						
Dependent Variable:	Company size					
Tamhane						
					95% Confidence Interval	
(I) Internet platforms make more accessible business agreements		Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
None	Slightly	-0,77	0,281	0,166	-1,73	0,19
	On average	-,77*	0,218	0,019	-1,45	-0,09
	Above average	-,44*	0,130	0,024	-0,84	-0,04
	Entirely	-0,23	0,128	0,580	-0,62	0,16

Source: own research, 2021

With this method, we were able to show where the significant relationship between company size (1 – micro-enterprises, 2 – small enterprises, 3 – medium enterprises, 4 – large enterprises) and the degree to which Internet platforms make more accessible business agreements (used variables: 1 - none, 2 - slightly, 3 - on average, 4 - above average and 5 - entirely) are located. The resulting post hoc test revealed respondents selecting on average and above-average were from larger sized firms than respondents selecting none were statistically significant.

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6. Conclusions

The development and spread of platform-based operations are monitored by many organizations, both domestically and internationally. Its importance and significance have been emphasized long before the epidemic situation, which was made even more apparent by the pandemic that fundamentally dominated last year. In addition to economic considerations, societal expectations, such as environment protection, the long-term conservation of natural resources, or promoting education, are playing an increasingly dominant role. The platform-based sharing economy also strives to meet these aspirations, although its awareness and popularity among entrepreneurs in our region are very narrow. Our results indicate that managers of larger firms are aware of the importance of digital platforms, but there was no statistically significant relationship indicating managers of smaller firms feel digital platforms are essential to their businesses. Nevertheless, the use of digital platforms will become unavoidable, even for smaller firms, to keep their market position, as several market research companies and organizations have already pointed out. However, running companies on a platform basis or connecting them to existing platforms requires structural changes in the production process, developing the value chain, and restructuring the business model.

The organization's strengths and weaknesses help define the role of the enterprise in the platform economy, which can be an orchestrator, a partner or a contributor. The size and the age of the company, the culture and traditions of the business, the resources and skills possessed can help the business owners decide how their business wants to connect to digital platforms.

In the coming years, the rise of digital platforms will be significant, so transparent and reduce uncertainty systems must be put in place, in the authors' opinion. The presentation of digital opportunities and introducing their functions to the business sector is also essential for its spread, contributing to increasing competitiveness moving forward.

7. Acknowledgements

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E-LEARNING AND M-LEARNING CONTENT GENERATION AS LEARNING SUPPORT IN ECONOMIC EDUCATION

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Abstract: The knowledge-based economy and the digital world are steadily transforming the teaching of younger generations but also the role and involvement of the teacher in the educational act. Accepting the essential role of economic education in the development of students' mentalities and abilities, we implicitly recognize the central role played by teachers and teaching methods, as a considerable challenge to transform education, focus on active learning, providing students with new experiences inside and outside the classroom, involving modern methods of learning and experimentation. Generating digital educational content, as well as designing instructional tools that allow easy access to students of this content requires an effort of adaptation by educators for new educational realities. Digital literacy of teachers is necessary, as the first condition, and then it is necessary to form skills that allow the generation of content with characteristics adapted to educational needs, respecting quality criteria and ethical criteria. In this paper, the author also aims to present the ASQ platform as a space where teachers can create digital content, which can be shared nationally with other educators and which can be used successfully in specific economics classrooms.

Keywords: *e-learning; economic education; ASQ platform; learning content; instructional tool*

JEL Classification: *A20; l25;D83.*

1. E-learning, m-learning - the new educational reality

The permanent appeal to education of an individual, can be beneficial for him at any time in his life, taking into account contemporary economic and technological trends, labor market needs, opportunities to adapt, or even succeed, in several professional fields (Csintalan & Badulescu, 2015). Resuming some of the ideas mentioned in the key acts of EU strategies in the field of growth and education, Csintalan & Badulescu (2015) insisted that education and skills are elements that increase economic growth; better educational levels are associated with increasing employability of individuals and employment's rate at regional and national level, directly contributing to poverty reduction. Last but not least, we must recognize and promote the idea of an active learning process, based on values of solidarity, equality, inclusion and cooperation (European Commission, 2010), (Csintalan & Badulescu, 2015). In a survey-based research involving teachers from economic high-schools, Badulescu et al (2020) find that they are fully aware that economic disciplines, financial education and entrepreneurship, provide practical learning opportunities, support students in participating in real situations and extracurricular activities. Finally, a good economic education offers a competitive advantage to the student and additionally arms him/her for life, regardless of the chosen occupation. Moreover, Neck and Greene (2011) argue that education and the teaching of economics must stimulate students to think, and then to act,

through a diversity of methods. Methods to do this are diverse, some teachers tending to use case studies and simulations; others use texts, official reports and analyses, and others digital application, in order to structure students' availability and ability to process economic and business information.

The technological development of the last decades has made the traditional form of education more and more obsolete, e-learning, m-learning becoming the new kind of education centered on teaching through an innovative and interactive approach. The term e-learning has been defined as being instructions transmitted using electronic devices in order to support learning (Clark and Mayer, 2016).

E-learning differs from traditional education by some very important aspects. First of all, the learner organizes his own training during the working time. The educator, on the other hand, can adapt the pedagogical path of each student, depending on the situation. The activity in e-learning can be continuous, it is not a punctual one, still, having some well-established landmarks in time. The content takes into account individual needs and interactions between participants and the tutor. The contents taught are constantly changing, through the contribution of users, by the experiences along the way of the unique practices used by educators.

Subsequently, the m-learning has emerged as a superior form of e-learning. The term has been introduced by Crompton (2005), in a period of development of global interconnection through World Wide Web (www). The most important aspect that differentiates m-learning from other pedagogical approaches is the possibility for students to carry out learning activities without being tied to a specific fixed location, by using mobile devices to access and communicate information, using wireless technology (Kukulska-Hulme, 2005). This model of distance education, through the use of mobile devices, is very favorable and advantageous to students, who thus have the opportunity to educate regardless of the time and place (Koruku and Alkan, 2011). These teaching methods have become dominant, especially in the current context, when there has been a shift in many education systems to online education.

2. Generating e-learning and m-learning content and designing the means of transmitting them

Modern education has to be grounded on promoting a diversity of cognitive approaches, related to a diversity of economic motivations, to take into account a wide range of desired outcomes or definitions of success. Economic education should avoid the idea that results are obtained in a linear and predictable way. Although the use of verified methods can reduce the failure of teaching and learning, many voices argue that this is similar to avoiding innovation and openness to new teaching methods.

Digital education is achieved through forms that differ greatly from traditional communication, being an environment that can generate knowledge, accessibility to new content, interaction for the exchange of ideas, knowledge, the exercise of skills, etc. However, this aspect does not deny the importance of the acquisition by educators, first of all, of the classical tools of human learning and socialization. Cucoş (2020) says that "learning only from the virtual environment, fetishizing it, making this landmark your main way of culturalization, leaving aside what we need until then, is too little, it is simplistic, even dangerous".

The delivery in the virtual environment of some contents, through computer-mediated learning supports, supposes the observance of some standards and quality criteria specific to both virtual learning and traditional education. The digitalization of education has led to the transition from textbooks distributed to students, to new forms of content delivery, which involve the collaboration of the teacher (specialist and pedagogue) with the software creator,

web designer, possibly psychologist. Another important aspect is related to the compliance of ethics in the generation of these contents or learning supports.

Digital education also involves the development of educators' digital skills. The 21st century digital skills needed by employees in any field are those that ensure the competitive and innovative capacity of organizations (van Larr and van Deursen, 2017). There is a rich literature that addresses the topic of digital competence, introducing several terms that refer to the digital skills needed in the new social and technological environment. Some of these terms are digital skills, digital literacy, or e-skills. Mitrovic (2010) explains e-skills as "the ability to develop and use ICT, to participate in a way as adapted as possible to an environment increasingly dominated by electronically accessed information, as well as the ability to synthesize this information into - an effective and relevant knowledge". One cannot imagine education today without developing these competencies among educators. An official document drafted in 2017 at the level of the European Union, refers strictly to the digital competences of educators, being called "European Framework for the Digital Competences for Educators: DigCompEdu" (Redecker, 2017). The areas of manifestation of digital skills for teachers are presented, which focus on different aspects of their professional activity: the use of digital technologies for communication, collaboration and professional development, attracting, creating and sharing digital resources, teaching and learning through the use of digital technologies, evaluation improved through the use of digital technologies and strategies, etc.

An important aspect to be mentioned when it comes to designing e-learning content, m-learning is that the means used to transmit knowledge is not just a simple way, but is an ingredient of the content, having the role of strengthening the basic idea, to describe and supplement it. On the other hand, it must be understood that the means used to convey the content is no more important than what is actually intended to be transmitted to the learners.

2.1. Characteristics of e-learning and m-learning contents and tools

The new curricular approaches in economic education are related to the increased autonomy of the learner, asynchronous teaching-learning and the relocation of training. Starting with these elements, the instructional contents of e-learning, m-learning and their transmission tools must have some important characteristics (Cucoș, 2020) as detailed below.

Thus, the knowledge conveyed must be *sequential*, the contents must be divided into several independent units, which students gradually go through in order to comprehend the entire content. In this way, students come to understand various complex economic phenomena.

Another important aspect is related to ensuring *a global articulation of the content elements*, because the economic phenomena and processes are interdependent, each influencing the others. The students' understanding of a phenomenon being related to the approach and understanding of other phenomena, in a coherence specific to the economy.

It is also necessary to *individualize the contents according to the particularities of the learners*, which will make the topics presented to be differentiated during the training course from one student to another, so that each individual to identify in the proposed material the elements that he is interest in and those he understands.

Ensuring particular rhythms of access and comprehension, which means that it is accepted that not all learners are able to understand everything, not everyone can go through and understand all the instructional content such as e-learning, m-learning and then they should be encouraged to progress at its own pace, recognizing that those contents that have not been fully understood will be addressed and understood in other contents anyway, as the economic phenomena and processes described are interdependent.

The introduction of methodological elements that accompany the knowledge path of learners in courses with economic content involves the use of methodological indicators of understanding, those elements that help learners in identifying new meanings and additional understanding of content, phenomena and economic processes; thus, not only knowledge

about these elements is transmitted, but learners are challenged to interpret this knowledge in the context of the real economy and to try to understand it, to look for answers and new ways of understanding.

2.2. Quality criteria in the generation of e-learning and m-learning contents and tools

Adherence to quality criteria in content generation and design of instructional tools such as e-learning, m-learning, achieving a proper design to ensure a positive training experience, must be provided by educators and economic education institutions in a responsible way, with special attention and dedication (Markova et al., 2016). These quality criteria are diverse and refer to aspects related to content, design, aesthetics, level of employment and motivation. Thus, it is very important to have a permanent verification and updating of the contents, so that the information presented is current and relevant. Also, this content must be logical, and the instructional tool must have an attractive and ergonomic design.

The contents and the instructional instrument must allow a certain interactivity, which is achieved by involving the users in their own training, by fulfilling some simple or more complex tasks, conditions in the succession of the educational course. They must also ensure ease of content navigation.

The quality of the contents and instructional tools depends very much on the way in which the educators are motivated to access or use them. For this it is necessary to include several elements of motivational support, such as interesting examples in the form of text or video, place elements, surprise elements or individual research tasks.

The use of multimedia techniques also leads to an increase in the quality of the contents, the use of images, sound and video effects, animations being very useful. This ensures an aesthetic of the instructional content; the users go through the contents without accumulating frustrations and desires to abandon in different phases of it.

Last but not least, a very important qualitative criterion is the adaptability of the contents and instructional tools, they must suit the students to whom they are addressed, to be adequate for them.

2.3. Respecting ethics in creating e-learning, m-learning contents and learning supports

Another issue related to the creation and use of e-learning and m-learning content is given by the use of technology in education. The ethic of technology is being analyzed nowadays. The moral norms of mankind were formed and transformed along its evolution from ancient times, still the ethic of technology on the other hand appeared more recently, as computers, tablets, smartphones are relatively recent technological achievements. The first references to the ethics of computer use were made by Norbert Wiener (1950), introducing computer ethics as a branch of philosophy. Moor (1985) says that computer ethics is the analysis of the nature and social impact of computer technology, as well as the formulation and motivation of policies for the ethical use of this technology. Peterson (2017) attempted an adaptation of these ethical principles of technology in education, focusing on the following aspects: the cost-benefit principle, the precautionary principle, the sustainability principle, the autonomy principle, the fairness principle.

The *cost-benefit principle* says that the use of technology in education is moral only if the net surplus of benefits over costs for students, educators, institutions is relevant. The *precautionary principle* applies to ensure that all measures are taken to protect learners from any threat. The *principle of sustainability* stipulates that the use of technology in education is moral only if it does not lead to the depletion of the financial resources of educational institutions through costly investments in technology. The *principle of autonomy* says that the use of technology in education is moral because the autonomy of both educators and learners is ensured, on the principle of anytime-anywhere. The *principle of fairness* states

that the use of technology in education is moral only if it ensures equal access of the learners to resources and teachers, avoiding the inequalities that occur frequently.

When debating the ethical issues related to the digitization process that economic education is undergoing today, there are some important issues. Thus, the problem of plagiarism is very important. It is a phenomenon that manifests itself on the part of both educators and learners. Creating plagiarised content is a serious violation, which is mostly due to the lack of ethics courses in how to produce and publish the content, as well as limited access to quality sources, which are generally not free (Gasparyan et al., 2017).

Another issue is related to "big data", i.e. obtaining consent on how data is collected, data protection, ownership of information. The ethical dilemma is related not only to the degree of consent that students can have regarding the collection and use of this data, but also to the way in which they can access, hold or control their own personal data, i.e. the control of the "digital fingerprint" as well as by correctly assessing the type of data that are considered relevant and useful to support learning and educational decision-making (Facer, 2011).

However, probably the biggest ethical issue is related to evaluation and how the education system will be able to make a correct evaluation through new pedagogical practices, for example online identity management, real or assumed. It also raises the question of how to assess more affective skills or attributes and whether these personal characteristics should be assessed and how the resulting information should be protected (Timmis et al., 2015).

Also, the generation of e-learning content, m-learning involves the collection and analysis of data on learners in order to understand and optimize learning and the environments in which it takes place. However, this learning analytical activity raises problems related to the way in which data about learners are collected and capitalized, most without their acceptance or information, without finding solutions so far to prevent the appearance of unethical behaviour or the appearance of unintended consequences (Willis et al., 2016).

2.4. Content creation and instructional tool using the ASQ platform

The aim of this research is to investigate the effectiveness of the use of e-learning content and their use using instructional tools created on an e-learning platform called ASQ.

The ASQ (Another Smart Question) platform is a free educational platform created by a group of enthusiastic Romanian teachers and programmers, who believe that technology can be used creatively in education. This platform is an alternative teaching method, adapted to the current education system, being suitable for all educational disciplines and all years of study. This platform is an example that proves the usefulness of m-learning and highlights the advantages of this learning environment, the application being available on mobile devices to students and teachers, thus ensuring their mobility. The aim of the platform is to offer students learning experiences that are as attractive, dynamic and interactive as possible. It offers the possibility to use different instructional tools, such as lessons with video explanations interspersed with feedback requests, games and competitions between colleagues based on the content already learned, tests and self-assessment functions. For teachers, the major advantage is that an assessment can be made quite efficient by the fact that the platform has tools that allow them to see exactly, at any time, what is the level of knowledge of each student in the class, to identify the shortcomings and to design an individualized route.

3. Research design

The analysis that we present here is a quantitative one, based on results obtained from a number of 54 students who worked on the ASQ platform. The control group was composed of 29 students. At the end, a questionnaire was also applied to get feedback from students on the activity.

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3.1. Data collection tool
A survey form, consisting of 5 statements, was applied to the experimental group. The purpose was to find out the opinions of the students about the activity on the ASQ platform. Quantitative data were obtained using a Likert-scale with the following options: "Strongly Disagree", "Disagree", "Neither agree nor disagree", "Agree", "Strongly Agree".

3.2. Study group
The participants from the experimental group consisted of 54 students from an economical high school, participating at the course of *Business Administration*. All participants were informed about the nature of the study before the research and participated voluntarily.
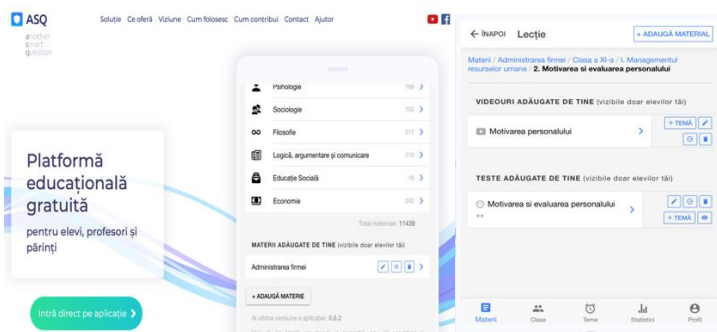
Figure 1. Creating the subject (own archive)   Figure 2. Content creation
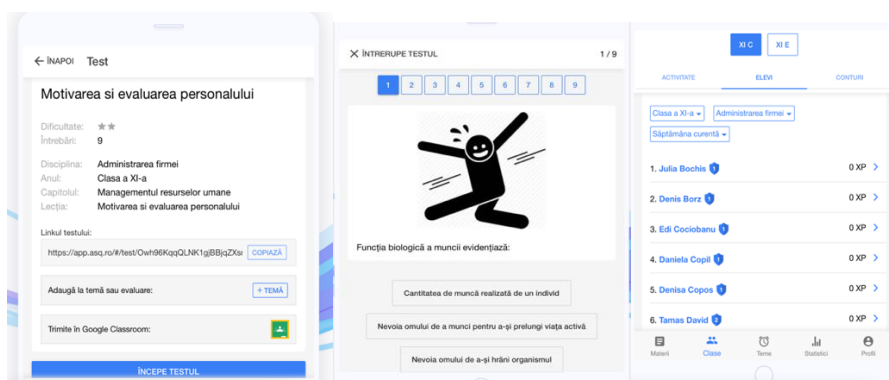
Fig.3. Students survey   Fig. 4. Test solving   Fig. 5. Results output

We used the ASQ platform, on which instructional content was created, which was then applied in the form of a test to two 11th grade classes, as an instructional tool.
Thus, the discipline of *Business Administration* was created on the ASQ platform, which is taught in the 11th grade, Technological profile. The discipline created in this way can be accessed only by students registered by the teacher, or be it make be made available to any user of the platform, on the principle of collaborative activities. Two classed were associated with this discipline, with a total of 54 students. They received uploaded materials from the *Human Resources Management Content Unit*, respectively *Personal Rights and Obligations* and *Personal Motivation and Evaluation*. A test was subsequently applied which consisted of 9 questions (each question worth 1 point), the students having subsequent access to feedback, thus making self-assessment possible.

To compare the results of the two groups, the same test was applied, but in a traditional format to another class. The resulting scores in Table 1.

Table 1. Results for the scores

Type of evaluation	Number of students	Grades below 5	Grades 5-6,99	Grades 7- 8,99	Grades 9-10	Average Score
ASQ Test 1st class	28	1	3	12	12	8,10
ASQ Test 2nd class	26	1	2	10	13	8,42
Traditional test	29	2	4	15	8	7,41

We can conclude that the better results obtained by the experimental group were due to the ways in which the knowledge testing was performed. If, for the experimental group we have used the ASQ platform as testing instrument, in the control group the classical testing was performed. The experimental group was more motivated to answer correctly, more competitive, the evaluation element after each answer contributing to the increase of concentration to generate further correct answers.

4. Findings

The results of the survey are as follows:
Q1 "ASQ testing motivates me to respond better"
Students responded in percentage of 26% Strongly Agree and 31% Agree, which indicates that students resonate with new assessment methods, which involve technology, being more motivated to solve tasks due to the novelty element.
Q2 "ASQ testing does not cause me anxiety about evaluation"
Students responded in percentage of 42% Strongly Agree and 28% Agree, which shows that students do not experience test anxiety being familiar with this online environment, online testing is already used by them in other non-formal, extracurricular contexts.
Q3 "Testing on ASQ seems fun and enjoyable"
Students answered in percentage of 13% Strongly Disagree, which shows us again that students prefer online activity, using tools they are familiar with and which they prefer to the classic paper test (phone, tablet, etc.).
Q4 "ASQ testing makes me competitive"
Students answered 41% Strongly Agree and 34% Agree, which shows that students become more competitive in ASQ testing, due to the display of the score after each question, as well as the results board on the class.
Q5 "ASQ testing makes me involved in solving the test"
Students responded in percentages of 23% Strongly Agree and 31% Agree which shows us that students become more involved in ASQ testing, due to the novelty in assessment, their preferences for activities that involve the use of technology.

5. Conclusions

In economic education, teaching methods such as e-learning, m-learning have become the normality and not the exception. In that regard, educators must be digitally literate, be able to browse, search and filter data, information and digital content, manage digital content, i.e. organize and store it. Educators must also be able to communicate and collaborate digitally, share content through digital technologies, but most importantly develop digital content and

integrate digital content into traditional one to create new, original, relevant content. Generating content and learning support such as e-learning, m-learning also involves the design of quality instructional tools through which this content can reach learners. These educational contents must respect certain characteristics and meet quality criteria in order to lead to the achievement of educational objectives together with the instructional tools. An important aspect is the one of ethics in the realization of these contents and in the use of instructional tools, plagiarism being for example a phenomenon that is not yet efficiently stopped.

In economics classrooms, the ASQ platform can be used successfully to generate educational content, being made available to the teacher various instructional tools to transmit knowledge or for assessment. Also, the contents can be shared publicly, with other educators, realizing a collaborative teaching and learning. The results obtained by the students show an increased interest in online ASQ testing compared to the classic one, and in the survey the students showed a positive attitude towards their activity on the platform. However, we mention that more studies are needed on content creation and instructional tools, including on the ASQ platform.

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ENTREPRENEURSHIP IN THE INDUSTRY OF TOURISM

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"All human beings are inherently entrepreneurial, that is, entrepreneurial potential is in all of us, in the same sense that all humans are innately musical, linguistic and morally reflective." (World Economic Forum)

Abstract: *In the economic field, entrepreneurship is important because it brings a contribution to the economic and social development; it is also mentioned in certain scientific works within the field, thus constituting a generator of innovation and of the capacity of coping with competition. Entrepreneurship may represent the engine of an economy, by bringing along a particular dynamism in economy. The current entrepreneurial reason may be categorised as the most negative period of its history. Tourism represents a system of interests through which a person may occupy their free time, comprising various journeys to different far-away destinations. This industry was founded in order to meet the asset and service demands of tourists once they get to their destination, at certain standards of quality. The size and evolution of national tourism may be influenced by certain relations on the international tourist market, by the orientation of diverse tourist flows, and by a certain degree of worldwide competition.*

1. Introduction

Most of the times, "promoting youth entrepreneurship is considered a way to combat the effects of the recent financial crisis and to create new jobs" (Anton, 2018: 9). Entrepreneurs may represent "individuals who think and act in order to transform the ideas into commercial opportunities and to create value" (Leach, 2012: 7) and they may be those persons (business owners) seeking to generate value by creating or extending an economic activity, by identifying and exploiting new products, processes or markets (OECD, 2009: 6). According to Professor Howard Stevenson, entrepreneurship may be considered "the pursuit of opportunity beyond resources controlled" (Stevenson et al.,1990). Entrepreneurship may also represent "an activity that involves the discovery, evaluation and exploitation of opportunities to introduce new goods and services, ways of organizing, markets, processes" (Shane,2000:217-226). A challenge faced by any entrepreneur is related to the management of the entrepreneurial process, with the main core in terms of management of innovation (Bădulescu, 2014:24). In order to build a successful business, it takes a great deal of courage and patience; few people have such qualities. For success in the entrepreneurial endeavour, an entrepreneur must – first of all – be intelligent and committed. Entrepreneurs also need a very good management team and, not least, an excellent outlet.

Entrepreneurship emerged from time immemorial: entrepreneurs are those who – by innovation and by their activity of business development – transform the static circular stream of economic flows into a dynamic one (Ghenea,2011).

Due to the two tourism sectors – accommodation and meal – we are made aware that the hospitality industry may be more prone to risk than other industries.

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2. Touristic financing

The pandemic has really challenged the European tourist market; given all the restrictions, it stopped in the first months of the year 2020, at both European and global level. OECD argues that the decline of activities reaches around 70%, largely depending on the health crisis and its resolution. Most tourist enterprises have had to deal with a severe cash crisis; according to estimates, losses in the European Union for hotels, tour operators and railway raises to 85%; for airlines to 90%. Reservations made for tourism in the EU decreased by 90% compared to the previous years. The crises hit the SMEs hard; they fought to avoid bankruptcy and turning their employees into unemployed persons; due to the lack of funding, they may end up in this situation. The crisis may have a negative impact in Europe, with the loss of around six million jobs, without any support for the labour force. Some states have adopted aiding measures, by providing various grants (up to EUR 800,000), loans, and various damages paid to enterprises for most losses suffered because of this pandemic. The European Union, in order to help most SMEs – mostly those within the tourism sector – unlocked a fund of around 1 billion EUR, accounting for a guarantee for the so-called European Investment Fund, by mobilizing a guarantee for the loan of 8 billion EUR, an amount necessary for the economic relaunch. The SMEs in the field of tourism may cover varus costs concerning labour force, diverse stocks and expenses within the funding of circulating capital. The cohesion policy within territorial strategies should help the most affected areas by the crisis, by developing various objectives for supporting the various tourist enterprises and by relaunching operations through more accessible funding, this combining it with different measures of digitisation and investments in competences, through various regional European funds, by promoting sustainable and mobility tourism. Those strategies must focus the cohesion funds towards various investments in order to restore the tourists' feeling of security (i.e., safe management of health protocols and management of green areas).

Most creditors argue that the various accommodation and meal practices do not highlight a general risk concerning the tourist activities. The industry of tourism comprises several sectors, covering a small part of certain ongoing businesses.

Tourism is an income source for most areas, thus contributing to an economic diversification and to the consolidation of certain companies carrying out their activity in their respective field. Financing from the European Union structural funds may be of great assistance to the smaller tourist enterprises, bringing them a certain degree of modernisation, renovation, and extension of the accommodation spaces. Hence, they may become more qualitative, which makes them more profitable and reliable. The participation in certain marketing courses for entrepreneurs may be very useful, thus adding value to the tourist field.

Tourism may become an important part of the global economy, thus supporting economic growth in certain countries, generating jobs. The tax and foreign currency income may lead to an improvement of people's quality of life.

Tourist consumption may entail various expenses made by tourists, thus representing tourist demand in order to provide various tourist motivational services (Lanquar,1987:30). Certain policies in the marketing field may be influenced by the synchronism between production and consumption.

The field of tourism may also be a services sector; a feature specific to it is thus that "the volume of consumption equates with the volume of production, which means that one can only produce what one consumes" (Cosmescu, 1998: 100).

A volume in what concerns tourist consumption may be staged, depending on the price of certain tourist products, and from the perspective of the consumers' income. Professor Krapf (1964) stated at the beginnings of tourism development: "Tourism is a typical example of satisfying needs that correspond to the views formulated regarding the closest lifestyle to the standing of each individual. Hence, it is not derived exclusively from utilitarian reasons,

but it also contains – to a high extent – extra-economic thus irrational elements" (Kraph, 1964: 63).

There are several important theories of tourism development that analyze the evolution of tourism and are based on the life cycle of travel (Butler, 1980) (Butler & Miossec, 1993). These theories describe the development of tourism in a cyclical pattern. According to these theories, changes in the tourism market take place not for economic or social reasons, but because of the changing nature of the tourism market and the constantly changing tourism motivations. Some authors characterize the development of tourism through the stages of increasing the number of tourists. Thus, according to evolutionary theories of tourism development, the development of rural tourism can be seen as a natural process of change. A correct understanding of this process provides a better understanding of the dynamism of rural tourism development and allows the identification of the main factors that have an impact on changes in rural tourism, as well as for the selection of appropriate methods for their identification and evaluation.

Turner (2005) identified three stages of tourism development in a given area: finding the right area for tourism development; the rapid development of tourism in this area; strengthening tourism in the area. Initially, tourism is developing slowly. When the right location is discovered and popularized, tourists begin to invade this area, and the local community refuses other economic activities and begins to build infrastructure for tourists and provide the required services. If tourism continues to evolve, it reaches the last stage of tourism development and becomes fully mature. It becomes a formal activity, which is based on local resources, facilities and attractive services. The promotion of tourism development is carried out by tourism companies. When tourism becomes a regulated activity, significant changes in the social, cultural and natural environment become inevitable. The model developed by Turner can be applied in a completely new area for the development of tourist infrastructure. The disadvantage of this model is the focus on changes in the territory, and the motivations of tourists and local communities are not assessed (Turner, 2005).

Lopa and Marecki (1999) propose to characterize the development of tourism by using the following relevant periods: the period in which the number of tourists is constantly growing; the period in which the number of tourists reaches a maximum; the period in which the number of tourists stabilizes; the period in which the number of visitors decreases. This cycle of tourism development can be described as the impact of the number of tourists on the result. When tourism development is not yet at a high level, the area usually attracts low-income tourists, who tend to spend less and stay in cheap accommodation or tents. These tourists are mainly interested in the attractiveness of the area, but are not interested in tourist services. As the tourism industry grows and service offerings expand, higher-income tourists come to the area using more expensive tourism services and products. Such tourists need high quality services and modern hotels to be built. These needs of tourists lead to the need for investment in the area. High-income tourists are gradually replacing those who are not attracted to the variety of entertainment and tourist infrastructure. Mass tourism promotes the integration of transport infrastructure, airports, high quality roads, railways, water transport. Over a period of time, mass tourism has gradually replaced high-income tourists with middle-income and low-income tourists. It is possible to distinguish the following groups of tourism consumers: fascinated individual tourists, high-income and demanding tourists, representatives of mass tourism. It should be noted that in some tourist regions, the development of tourism may not have all the stages and may be irregular. The expansion of tourism and various marketing tools aimed at promoting all user groups in the area is a complex process, with no clearly predictable results (La Lopa & Marecki, 1999).

The most well-known and widely accepted cyclical theory of tourism development was developed by Butler. Butler's cyclic model includes 4 stages: exploration, involvement, development and in the fourth stage, saturation is reached and four variants of evolution are possible: decline, invigoration, stagnation or consolidation.

(1) Exploration. The town is discovered by people who appreciate its beauty and culture. Tourists arrive in small numbers and bear all the shortcomings: few facilities, low accessibility.

(2) Involvement. The number of tourists is small, but growing, the flow of tourists tends to occur. Tourists encourage local companies to start offering tourist services and selling goods to travelers. The destination is becoming more and more known, increasing its accessibility and promotion.

(3) Development. The period of dynamic growth. The flow of tourists is growing rapidly. The additional investments reduce the services in close connection with the natural elements of the business.

(4) In the fourth stage, saturation is reached and four variants of evolution are possible: decline, invigoration, stagnation or consolidation. (4.1) Decline. If the destination does not respond to social, economic, political or environmental problems, the number of tourists begins to decline sharply, because they prefer more attractive locations. The cycle can enter the regeneration phase if there have been significant changes in the resources used. (4.2) Regeneration. In this phase of the cyclical model, the number of tourists is constantly increasing, but may increase or decrease rapidly. At this stage, an opportunity arises to move on to the next cycle. (4.3) Stagnation. The number of tourists arriving is stabilizing. This results in economic, social, political and environmental problems. The development of the tourism industry significantly affects the qualitative characteristics of the area, which were considered as the main factors of attraction and exclusivity at the beginning of the tourist cycle. This stage can take a short or very long time. (4.4) Consolidation. The number of tourists is constantly growing. Marketing tools are used to extend the tourist season to attract more tourists (Butler, 1980).

The theories of tourism development developed by Butler, Miossec, Turner, Lopa, Marecki are based on the stages of tourism development. Theories of tourism development have largely focused on the needs and behavior of tourists. The behavior of tourists remains among the most researched areas in marketing and tourism (Cohen, Prayag, & Moital, 2014). There are a number of studies that try to determine the difference in perception depending on the characteristics of the consumer. Research by Li, Li and Hudson (2013) has shown that different generations have different preferences when choosing tourist destinations, when choosing activities to travel and when choosing sources of travel information, but important similarities have also been highlighted. Both Baby Boomers and Generation X consider online sources of travel information more important than Generation Y. At the same time, the Baby Boomers generation relies heavily on online sources of information that support the work of Beldona et al. (2009), which found that the use of the Internet has increased substantially for the Baby Boomers generation compared to other generations. (Li, Li, & Hudson, 2013). Research by Serban Pelau, & Chinie (2017) has also shown that the biggest differences in age dependence are in the choice of leisure activities and the use of modern electronic equipment. (Serban, Pelau, & Chinie, 2017). A number of researchers (Fyall, Leask, Barron, & Ladkin, 2017; Losada, Alen, Dominquez, & Nicolau, 2016) have also shown that differences between generations also play an important role in the choice of tourism products. The influence of the gender of the consumer of tourist services and the behavior of the tourist has also been shown by a number of researchers (Pelau & Chinie, 2018; Legoherel, Hsu, & Dauce, 2015; Tkaczynski, Rundle-Thiele, & Beaumont, 2009; Nistoreanu, Pelau, Ene, & Lazăr, 2018). Research conducted by Eusebio and others has shown the link between motivations for tourism and the profile of the rural tourism consumer, as well as its influence on the choice of activities during travel in a rural area (Eusebio et al., 2017). The results of research conducted by Park and Yoon (2009) suggest that consumers of tourism can be divided into four segments based on the motivations of tourists. The profiles of these four segments showed significant differences in socio-economic characteristics, holiday behavior and activity preferences (Park & Yoon,

2009). Knowing this information can help tourism companies develop products and services in accordance with consumer wishes.

The tourist ecosystem of the entire Europe may cover a wide array of various activities such as accommodation, travels, recreation, culture, etc, thus contributing by 10% to the GDP of the European Union, which makes it one of the main tourist destinations worldwide, it recorded approximately 563 million arrivals and about 30% of the global incomes in 2018 (UNWTO).

Tourism may represent for most Member-States of the European Union a major contribution to the economic and social system, thus providing both jobs and gratifying incomes, but the ecosystem in question is seriously affected. Therefore, World Tourism Organisation (UNWTO) predicts a dramatic drop of international tourism, even by 80%, thus accounting for losses up to 1,100 billion Euros, in terms of global exports. Actually, most residents of the European Union take 385 million trips, thus spending around 190 billion Euros (Eurostat, 2019). European tourism depends for the most part on the European residents having free access to the entire territory of the European Union. Artificial intelligence and robotics may bring their contribution to the monitoring of social distancing - pursuant to data protection legislation – and to the disinfection of the places periodically visited by tourists.

3. Conclusion

The end of restrictions may provide Europeans with vast opportunities to travel nationally and internationally, thus discovering new experiences. Many European cities focused on cultural tourism. Regions and cities may be sometimes responsible from the perspective of tourism and transportation policy; if they are applied without previous coordination, they may neutralise or obstruct one another. Europe must remain the top destination in international tourism, being characterised by innovation sustainability and value. Digital transition may be an important battle won for tourism, because it may provide new method for managing tourist flows and opportunities. Digital tools may consolidate people's trust that they can rely on their travel. This entails investments in cybernetic security, digital innovation and connection of tourist businesses.

The European Commission may support most local businesses from this branch of tourism, through certain digital innovation centres, thus helping them get through the tourist season successfully, with the use of cleaning robots, of population management, of an intelligent booking system, (a "hackathon" for certain digital technologies within the industry of tourism).

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INDONESIA – A GOLDMINE OF DARK TOURISM DESTINATIONS

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Abstract: *Known for its significant potential in the tourism industry, Indonesia fails to promote dark tourism destinations as one of their main pillars of national tourism. As some countries were bold enough to create tourist attractions out of the catastrophes that hit them during their history, Indonesia holds one of the most death obsessed culture in the world, but it is not a strong dark tourism destination. The purpose of this paper is to analyze the potential of dark tourism destinations Indonesia has, the motivation of "dark tourists" consumers and the approach of Indonesians towards dark tourism.*

Keywords*: dark tourism, macabre tourism, zombie tourism*

JEL classification*: Z30*

1. Introduction

Dark tourism involves traveling to places that have encountered, or are associated with, death, disaster, depravity, misfortune, and the macabre as Lennon and Foley (1999) defined it. The "dark tourism" term was first pointed out by Foley and Lennon (1996b) as a "tourist interested in recent death, disaster and atrocity" borne of a "fundamental shift in a way in which death, disaster and atrocity are being handled by those who offer associated tourism products". However, they were not the first to refer to death related destinations. Rojek (1993) called this concept of visiting death related site as "black-spots", or "the commercial developments of grave sites and sites in which celebrities or large numbers of people have met with sudden and violent death".

The purpose of this paper is to analyze the potential of dark tourism destinations Indonesia has, the motivation of "dark tourists" consumers and the approach of Indonesians towards dark tourism.

2. Dark tourism and travel motivation

Dark tourism creates a unique yet controversial concept as it offers an uncommon feeling and atmosphere that are grief, sadness, and guilt in contrast to other kind of tourism sites (beaches, mountains, metropolitan, etc.) which presents joyful feelings to the tourist as Bittner (2011) states. Dark tourism in Indonesia might have a huge potential. The potentiality of dark tourism is not only accelerating recovery process in post disaster context, in which case community reinforces its resiliency to adversity, but by recycling obliterated cities into a more profitable spectacle has been widely studied by specialists from different angles (Seaton, 1996; Foley&Lennon, 2000; Strage & Kempa, 2003; Korstanje & Ivanov, 2012). There might be an unwillingness to tolerate the intrusion of the new and based of that unwillingness, the host population might be against opening up some dark tourism sites. Indonesian government tends to focus on "white" tourism of Indonesia as beaches and metropolitan areas such as Jakarta, Bali or Batam.

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2.1. Travel motivation
People are more attracted to those beautiful and relaxing destinations than to dark tourism destinations. When traveling, people are trying to fulfill their needs. As Van Vuuren & Slabbert (2012) mention, tourist motivation has been an important aspect to be researched in the tourism industry. It is used to predict the travel behaviour and destination choice. Motivation can be seen as an internal urge, as a process of leading people to behave the way they do.

Yuill (2003) tried to conceptualize the idea of Push and Pull factors of dark tourists' motivations:

Table 1: Push and Pull factors

No.	Push Factor	Definition
1	Heritage	A special or individual possesion with the site
2	History	Experiential learning
3	Guilt	Intentions to honor or commemorate victims
4	Curiosity	Embracing variant motives to fulfill fascination for macabre and unique sites
5	Death and dying	Intention to cope with a personal question regarding death, dying and tragedy
6	Nostalgia	To undergo a regretful, nostalgic or wistful mood from the past
	Pull factor	Definition
1	Education	Interested in understanding the history behind
2	Remembrance	To direct or take an interest in respectful action, to venerate the past so people and society can prevent past mistakes
3	Artifacts	To see the evidence of culture or history
4	Sight sacralization	The process of assigning cultural identity

Source: Bigley et al (2010)

According to Isaac and Cakmak (2013) self-understanding, curiosity, exclusiveness and conscience are also motivations to visit dark tourism sites. Self-understanding is a motive to see more insights of a certain site and to feel the symphaty towards the victim, whereas curiosity is exactly the opposite, you're curious to see the place and to answer to the questions "why?", "how?".

3. Dark tourism destinations in Indonesia
South Sulawesi is a province of Indonesia, and it is located in the Sulawesi Island. This region is inhibited by Torajan people. Most of them are Christians, due to the Dutch missionaries in the early 1900s, but there are Muslims as well and the animist religion, a religion of those people, also called "the way". The tourists that are eager to have a firsthand fun and fright touristic encounter with the "undead" are taking part in many festivals that are held in some indigenous communities along Indonesia.

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3.1 Ma Nene festival
As stated before, the Indonesian culture is a death oriented one. One of the main attractions of dark tourism sites is the Ma Nene festival which is held every year in August, and it is a ritual that consists in cleaning the corpses which is held in Tana Toraja, During this ritual the dead are exhumed to be groomed, washed and to get a new change of clothes. After the grooming ritual is finished, the new dressed bodies of the deceased are walked around the village while new coffins are prepared for them to return to their graves.
Stating from this ritual and together with tourist fascination with the cadavers and a zombie manie of the people, a new term has been born for dark tourism, which is zombie tourism. Although mummies can be found in Egypt as well, this term of zombie tourism is located in Indonesia due to this Ma Nene festival, where the relatives of the dead "walks" him/her around year after it's funeral.

3.2. The Torajan burial methods
The Torajans have multiple way of celebrating the death of a person. After the actual death, the body is wrapped and covered in many layers and kept by the family at home. Sometimes the period between the death and the funeral can extend to several years, until the family is able to gather enough money to organize an extravagant funeral ceremony. During the waiting period between the death and the burial, the ceremony asks for buffaloes and pigs to be slaughter.
One of the burial methods used in Tana Toraja is the stone-carved cliff graves. The family dig a cave inside a rocky cliff and the corps is places in a gravestone.
A second method used for burial is hanging carved graves. The corps is left exposed and hanging on a cliff in a wooden casket. The result of this method is that eventually the casket will fall and the body inside the casket will become just bones that will scattered over the ground.
Another method is dedicated for the children, and it is called baby tree graves. The tree is seen as a symbol of life in their culture and the babies and children are too young to have such a complicated and long funeral ceremony as those two described above. So, for the children and infants, they pick a hollow tree that symbolize "the new mother" of the dead child and the corpse is put inside the tree.

3.3 Other dark tourism destinations
Not all dark tourism destinations in Indonesia are funeral related and in the middle of the jungle, some of them are in the metropolitan area and are warfare destinations such as ex-Vietnam's refugee camp in Batam, Lubang Buaya in Jakarta, Mandor killing fields in West Kalimantan, Trunyan Basket Burial site in Bali or Lawang Sewu in Semarang.

4. Conclusions
Indonesia has a rich and unique heritage and history, which gives many destinations of almost any kind of tourism. Their death-oriented culture holds a strong word in Indonesia being a dark tourism destination. Although the Western civilization is more orientated to dark tourism sites, the Asian population will become, in time, attracted to this tourism niche.
Even though the main purpose of visiting Indonesia might not be dark tourism for more than half of their tourists, they became dark tourism consumers thanks to many day trips organized by the local travel agencies. As it might be easy to travel to some famous site, it might be hard to get all the information from the locals, especially the ones that are living in the jungle and are not touch by the globalization and increasing tourism activity.

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TOURISTS' MOTIVATIONS FOR VISITING DARK TOURISM SITES. CASE OF ROMANIA

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Abstract: *Nowadays, tourism plays an essential role in economic growth and development in many countries. Tourists have different travelling motivations and behavioural manifestations, helping tour operators decide suitable for them. Developing a dark tourism niche concept is a necessary step for correct use of it in theory and practice. Dark tourism is an important concept studied in the past twenty years in worldwide literature. This empirical paper aimed to determine the tourists' motivations for travelling to Romania's dark tourism destinations and establishing them. A quantitative research method was applied based on a survey using a non-probabilistic technique based on convenience sampling. Secondary, it was studied the relationship between motivational determinants and tourists' attitude-behaviour in visiting dark tourism sites (Theory of Planned Behaviour, TPB). The survey conducted online was primarily made of 40 items evaluated on the Likert scale. It has been used a sample based on 475 Romanian respondents: 72.3% who had already visited a dark tourism destination in Romania, and 27.8% who stated they planned to visit one. The theoretical framework has analysed five constructs as motivational determinants in the relationships with behavioural construct attitude (TPB). The results show support for two of five research hypotheses (H1 and H4). Dark experience (H1) and Unique learning experience (H4) have a significant and positive effect on Attitude. We did not find any significant effect of Engaging entertainment, Casual interest, and Emotional recreation on Attitude. Hence, H2, H3 and H5 are not supported. Based on these results, the government can develop tourism economic and marketing policy to develop dark tourism as important post-communist niche tourism. The practitioners can develop and promote tourism packages and products by applying the correct use of dark tourism sense. The present scientific paper's originality is given by the lack of literature review studies based on empirical research on this topic. Limits of the research and future research directions are also pointed out in the conclusion part.*

Keywords: *dark tourism; sites; motivations; attitude; Theory of Planned Behaviour*

JEL Classification: M31; L83; Z31.

2. Literature review

The worldwide literature is published in over 171 research study (Light D., 2017), and points of view regarding dark tourism term developed more than two decades ago. Scholars and practitioners worked since the mid-1990s to explain "this fascination with the macabre and morbid" (Hartmann, R. et al., 2018). Thus, studies on motivations for visiting dark tourism sites still represents an "under-researched topic" (Sharpley R. and Stone, 2009). People are getting more and more fascinated and attracted by death, willing and curious to visit places

where have been disasters, atrocities, violence, paranormal phenomenon, legends, myths, and macabre activities. Knowing precisely why people visit dark tourism sites and places can help develop tourism products, implement marketing strategies to attract tourists and raise awareness of the importance of this type of tourism for the country heritage.

Romania is an Eastern European country with a rich communist history, "communist heritage" (Light D., 2000) and events associated with death, sufferance, violence, sites that can become part of dark tourism destinations. After the revolution, both the visitor's mentality and the tourism area's offer changed, appearing dark tourism niche. People are willing to travel to these sites to see the impact of the communist period, experience "direct and ancestral memories of the brutalities", the 'dark myth' Banaszkiewicz M. et al. (2017), and also helping the local economy. Romania so far does not have a national strategic plan according to develop and promote this type of tourism regarding communist heritage (Master Tourism Plan 2007-2026).

During the times also Dracula's legend attracted the attention of many tourists and academic researchers. Bran Castle and Merry Cemetery from Săpânța are the most known sites for dark tourism at the international level. Therefore, it is only necessary to identify and promote them properly.

In the national academic literature, few studies contribute to the knowledge of this type of tourism niche. Most of them at theoretically and exploratory level such us: emphasis on Dracula's myth from Transylvania (Light D., 2017; Drule M. et al., 2014; Stoleriu O., 2014), communist decline" most violent revolution" (Light D., 2000:161), Romanian heritage for dark tourism (Gabor M.R. and Oltean F.D., 2014), the potential for developing a niche segment (Patrichi I., 2013,), focus on a new form of tourism (Robantu C. and Vasile M., 2014), dark tourism as the regional brand for Transilvania (Ghetau, L. And Esanu, L., 2010). Thus it is a vacuum of empirical researches, especially on motives related to tourists behaviour which are visiting dark sites.

2.1 Dark tourism definition and typology

The dark tourism concept was presented for the first time in 1996 by Foley and Lennon (1996:196) in the International Journal of Heritage Studies edition. It was defined as "*the presentation and consumption (by visitors) of real and commodified death and disaster sites*". At the same time was introduced the term thanatourism by Seaton (1996:240) defined as "*travel to a location wholly, or partially, motivated by the desire for actual or symbolic encounters with death, particularly, but not exclusively, violent death*".

Fonseca A. et al. (2016:1) mention that during the years, dark tourism phenomenon was described such as: "morbid tourism", "thanatourism", "atrocity tourism", and "black spot".

According to the tourists' motivation, dark tourism has six typologies: *"*War/Battlefield Tourism, Disaster Tourism, Prison Tourism, Cemetery Tourism, Ghost Tourism, and Holocaust Tourism" (Fonseca A. et al. 2016). Further, the author Fonseca A. listed and analysed 31 dark tourism sites worldwide, including Bran Castle from the Transylvania region, Romania. She concluded that dark tourism has the power to bring from the past up to present events, is *"sharing information and causing emotions, expanding the discussion of the darker side of history and humanity.*" Seaton (1999) pointed out that death tourism according with the reason for travelling can be: for watching death, to see sites after death has occurred, visiting graves, monuments, "travel to re-enactments" (in Muzdzanani T., 2014).

All in all, dark tourism refers to visiting places (sites, destinations, tourist attractions) that are associated with death, tragedy, suffering, resulting from: natural disasters, revolutions, battles, communist prisons, anthropogenic disasters, crimes, sacrifices, genocide, atrocities, paranormal events, legends, myths. This approach was applied in this research study.

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2.2 Motivational determinants and Theory of Planned Behaviour (TPB)

Tourist motivation is an important determinant factor in the decision-making process for travelling. Tarlow (2005) mentioned, *"*four basic emotions which interact on a dark tourist's psychological state: insecurity, gratitude, humility and superiority" (cited in Niemelä T., 2010:20). Different motivations conduct tourist behaviour for visiting dark sites: for engaging with post-disaster places (this remains a motive still under-researched, Biran, A. et al., 2014), for curiosity (Foley, 2000), for heritage and history events (Smith, 1996), event validation, education (Hyde and Harman, 2011).

The theory of pull-push factors (psychological - cultural one) is important to be taken into consideration when we try to understand tourists travel motivation and decision (Biran, A. et al., 2014).

Motivational determinants (motives) construct is made of five dimensions: "Dark Experience, Engaging Entertainment, Unique Learning Experience, Casual Interest, Emotional Recreation" (Allman H.R., 2017). The attitude construct is part of the Theory of Planned Behaviour (TPB). This theory is applied *"*to predict behaviours that are not under complete volitional control" (Ajzen, 1988). A study in China using TPB showed that *"*attitude, perceived behavioural control, and past behaviours were directly related to the survey participants' travel intentions (Lam and Hsu, 2004)."

These constructs are described below, adapted from Allman H., (2017) and literature, and are included in this research framework (hypothesis).

Dark Experience refers to visiting destinations related to death, suffering, satisfying personal curiosity, fascination with abnormal and bizarre events, and reconnecting to the past's dark events. *Engaging Entertainment* refers to entertainment value, emotional connection to the location they visit to try something new and something out of the ordinary. *Unique Learning Experience* focuses on learning, increasing knowledge, and experiencing a part of cultural heritage, history. *Casual Interest* refers to the individual's opportunity to have an enjoyable time with family/friends, personal safety, natural scenery. *Emotional Recreation* refers to the chance to meet people with similar interests and to be emotionally refreshed.

Attitude's approach measurement in the actual study is made of attribute regarding dark tourist's behavioural intentions: morbid, interesting, unusual, educational, depressing, emotional, enjoyable, original, sophisticated, useful.

3. Research methodology

The empirical paper aimed to study the relationship between motivational determinants and tourists' attitude-behaviour in visiting Romania's dark tourism sites. Secondary, it was essential to find out the most visited dark tourism destination and sites from the country and for what reason.

3.1 Theoretical framework and research hypotheses
The theoretical framework is based on a comprehensive literature review used in the previous research studies (Heather Renee Allman 2017, Biran et al. 2014, Bissel 2009) to measure the significant relationship between motivational determinants' primary constructs and the Theory of Planned Behaviour (TPB).

Were developed five hypotheses' statements to study the relationships between the constructs as follows:
Hypothesis 1: Dark Experience has a positive relationship with Attitudes.
Hypothesis 2: Engaging Entertainment has a positive relationship with Attitudes.
Hypothesis 3: Unique Learning Experience has a positive relationship with Attitudes.
Hypothesis 4: Casual Interest has a positive relationship with Attitudes.

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Hypothesis 4: Emotional Recreation has a positive relationship with Attitudes.
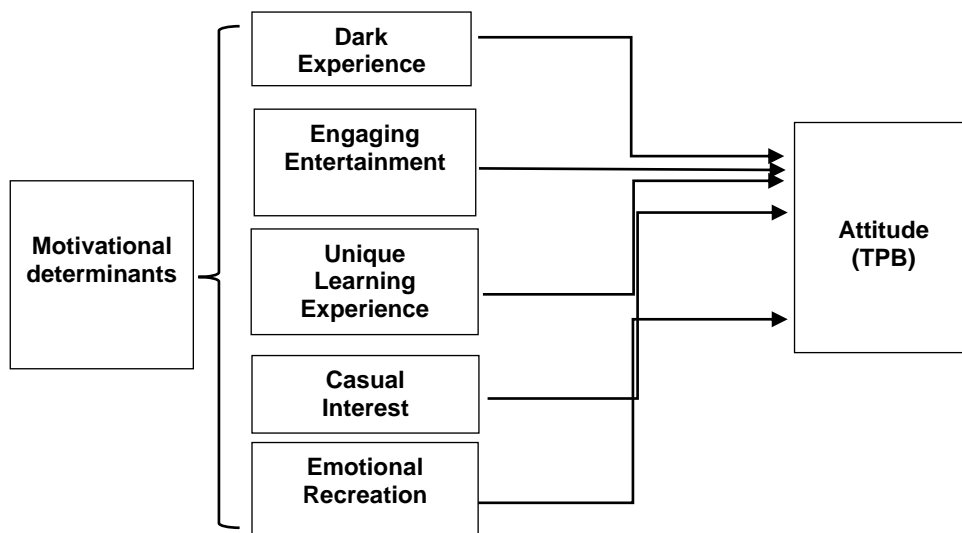
Figure 1. Conceptual research framework adapted from Allman H.R. (2017)

3.2 Survey instrument and sampling

In the study were developed two surveys instruments based on the theoretical framework used. One survey was completed by the tourists who have been visited a dark tourism destination or site. The other one was completed by the tourists who have been not visited yet, do not reject the action and intent to visit it. A quantitative research method was applied based on a survey using a non-probabilistic technique based on convenience sampling.

The surveys were conducted online with the support of the website www.isondaje.ro, in May-July 2019, from 475 non-rejectors respondents of dark tourism activities, from the West and Central region of the country. Each of the 20 scale items of the first five motivational Dark tourism constructs was developed on a Likert scale questions (1 representing unimportant and five representing important). Each of the ten scale items of construct Attitude was designed on a Likert scale questions (1 representing totally disagree and five representing totally agreed).

Items of Dark tourism construct and Attitude – behaviour construct measurement was adapted from Allman H.R. (2017) research and are listed in Table 2 and Table 3 after the statistical analysis.

An additional question was developed to find out from the respondents the dark tourism destination visited so far or plan to visit it from Romania and analyse it according to its motives.

To increase the research's validity, a pilot test was conducted to check if the questions are correctly made and provide feedback to improve the questionnaires. Ten persons were involved (academics and non-academics). We received attentions to be more specific in the question 9 sentence related to analysing the dark tourism sites visited or intended to. The respondents had word issues understanding often with those ten motives listed. We revised them by making short propositions.

4. Results

4.1 Sample Structure

We interviewed a total sample of 475 non-rejectors of dark tourism activities: 343 (72.3%) who had already visited a dark tourism location in Romania, and 132 (27.8%) who said they planned to visit one (i.e., they do not reject the activity). The two sub-groups are similar in their socio-eco-demographic structure, except respondents who did not visit any dark tourism sites (but plan to visit) are more frequent in the under-25 age category (see Table 1). We consider this to be normal, as they probably did not find the time to visit any dark tourism sites. Therefore, we did not consider this as an influence on our study. Otherwise, the structure of the two groups is similar. All data were analysed using SPSS 23 statistics software.

Table 1 Sample Structure

Sample structure		Total sample		Visited dark tourism site			
				Yes		Plan to visit	
		N	%	N	%	N	%
Total sample		475	100.0%	343	100.0%	132	100.0%
Age	<25 years old	136	28.6%	81	23.6%	55	41.7%
	26 - 35 years old	170	35.8%	131	38.2%	39	29.5%
	36 - 45 years old	92	19.4%	70	20.4%	22	16.7%
	46 - 55 years old	51	10.7%	38	11.1%	13	9.8%
	56 - 65 years old	21	4.4%	19	5.5%	2	1.5%
	65+ years old	5	1.1%	4	1.2%	1	0.8%
Gender	Female	101	21.3%	70	20.4%	31	23.5%
	Male	374	78.7%	273	79.6%	101	76.5%
Income	Less than 1000 lei	66	13.9%	45	13.1%	21	15.9%
	Between 1001 and 2500 lei	133	28.0%	98	28.6%	35	26.5%
	Between 2501 and 3000 lei	104	21.9%	74	21.6%	30	22.7%
	More than 3500 lei	172	36.2%	126	36.7%	46	34.8%
Residence	Urban	383	80.6%	277	80.8%	106	80.3%
	Rural	92	19.4%	66	19.2%	26	19.7%

4.2 Constructs and Hypotheses

To discover the basic structure of the constructs investigated in this study, factor analysis was performed. Both constructs (Dark Tourism and Attitude) were subjected to principal component analysis (PCA) with Varimax rotation using the eigenvalue criterion greater than 1.00. According to Hair et al. (1998), factor loading for each item should be 0.50 or higher. Based on the research conducted by Allman (2017), Dark Tourism includes four dimensions: Dark experience, Engaging entertainment, Unique learning experience and Casual interest. The factor analysis we conducted on the 20 items of this construct (five items for each dimension) revealed five dimensions, appropriately named as Dark experience (1), Engaging entertainment (2), Casual interest (3), Unique learning experience (4) and Emotional recreation (5) (see Table 2).

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Table 2 Factor analysis and reliability of the Dark Tourism construct

Dimension/Items	(1)	(2)	(3)	(4)	(5)
Dark experience (1)					
To satisfy personal curiosity about how the victims died	0.774				
To witness the act of death and dying	0.781				
To satisfy my fascination with abnormal and bizarre events	0.734				
To visit a well-recognised location that is known to be home to dark experiences	0.634				
To reconnect to the dark events	0.597				
Engaging entertainment (2)					
Travel as a hobby		0.733			
To have some fun and entertainment		0.668			
To change pace and get away from routine		0.716			
To try something new		0.635			
To try something out of the ordinary		0.613			
Casual interest (3)					
To have an enjoyable time with family/friends			0.591		
Natural scenery			0.545		
Service quality			0.829		
Personal safety			0.813		
*Reputation and fame**			0.613		
Unique learning experience (4)					
To increase knowledge				0.802	
To experience a part of my heritage				0.849	
*To experience a place(s) many people have not been to or wish to visit***					
Emotional recreation (5)					
To meet people with similar interests					0.809
To be emotionally refreshed					0.749
Eigenvalue	7.367	2.194	1.556	1.270	1.004
% of Variance	36.828	10.971	7.782	6.352	5.020
Cronbach's alpha	0.818	0.843	0.822	0.813	0.721
Bartlett's Test of Sphericity	0.000				
Kaiser-Meyer-Olkin (KMO)	0.886				

* This item was deleted during the scale purification
** This item was deleted because factor loading is lower than 0.50

As Table 2 shows, one item was deleted during the factor analysis procedure due to its factor loading being lower than the accepted value of 0.50 (Hair et al., 1998). All remaining items had a factor loading greater than 0.50, ranging between 0.545 and 0.849. The eigenvalue for all five factors (dimensions) of the Dark tourism construct ranged between 7.367 and 1.004. The five factors cumulatively explained 66.95% of the data's variance with a KMO value of 0.886 and significant Bartlett's Test of Sphericity. Furthermore, when testing internal consistency for each dimension of the Dark tourism construct, the reliability analysis revealed that all five dimensions had Cronbach's alpha scores higher than 0.700 (see Table 2). According to Nunnally (1978), a measurement scale is reliable if the value of Cronbach's alpha coefficient is equal to or higher than 0.700.

Only one dimension was extracted from 10 items measuring the Attitude since the solution cannot be rotated. The eigenvalue extracted was 2.455 and captured 49.11 % of the data's variance with a KMO value of 0.756 and significant Bartlett's Test of Sphericity. Five items were deleted during the scale purification (Morbid, Unusual, Depressing, Fun and Sophisticated), final Cronbach alpha score is 0.734.

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Table 3 Discriminant validity assessment

Construct/Items	(1)	(2)	(3)	(4)	(5)	(6)
Dark experience (1)						
To satisfy personal curiosity about how the victims died	**0.773**	0.321	0.179	0.212	0.295	0.363
To witness the act of death and dying	**0.812**	0.208	0.195	0.229	0.351	0.369
To satisfy my fascination of abnormal and bizarre events	**0.761**	0.479	0.256	0.166	0.370	0.300
To visit well-recognized location that are known to be home to dark experiences	**0.739**	0.462	0.340	0.355	0.310	0.422
To reconnect to the dark events	**0.722**	0.273	0.257	0.396	0.358	0.482
Engaging entertainment (2)						
Travel as a hobby	0.206	**0.677**	0.397	0.362	0.226	0.202
To have some fun and entertainment	0.252	**0.748**	0.449	0.152	0.417	0.279
To change pace and get away from routine	0.260	**0.814**	0.520	0.315	0.470	0.449
To try something new	0.500	**0.849**	0.513	0.436	0.459	0.416
To try something out of the ordinary	0.529	**0.822**	0.458	0.347	0.481	0.363
Casual interest (3)						
To have an enjoyable time with family/friends	0.127	0.454	**0.759**	0.275	0.354	0.219
Natural scenery	0.311	0.574	**0.789**	0.461	0.328	0.399
Service quality	0.298	0.476	**0.849**	0.310	0.334	0.326
Personal safety	0.291	0.436	**0.838**	0.319	0.354	0.290
Unique learning experience (4)						
To increase knowledge	0.365	0.424	0.389	**0.918**	0.278	0.529
To experience a part of my own heritage	0.284	0.334	0.383	**0.918**	0.236	0.502
Emotional recreation (5)						
To meet people with similar interests	0.370	0.449	0.330	0.203	**0.884**	0.272
To be emotionally refreshed	0.412	0.489	0.417	0.292	**0.884**	0.330
Attitude (6)						
Interesting	0.418	0.366	0.273	0.382	0.176	**0.748**
Educational	0.294	0.189	0.164	0.488	0.158	**0.761**
Emotional	0.358	0.185	0.171	0.284	0.245	**0.546**
Original	0.369	0.501	0.469	0.345	0.306	**0.666**
Useful	0.348	0.233		0.444	0.322	**0.759**

To assess convergent and discriminant validity, we used Pearson's correlation coefficient. Results revealed that the items used to measure each construct are correlated two by two; the significance level is lower than the accepted limit of 0.05 (Bagozzi et al., 1991). Furthermore, each scale's items used to measure a construct are most strongly correlated with that construct. For each measurement scale, Pearson's correlation coefficient recorded the highest values in the construct measured by it (see Table 3). Hence, convergent and discriminant validity was achieved.

Table 4 Standardised coefficients (β) for the research model

Research Hypothesis	Standardised coefficients (β)	Significance level (p)	Hypothesis testing result
Dark experience → Attitude (H1)	0.302	0.000	Supported
Engaging entertainment → Attitude (H2)	0.059	0.228	Not supported
Casual interest → Attitude (H3)	0.070	0.120	Not supported

Unique learning experience → Attitude (H4)	0.391	0.000	Supported
Emotional recreation → Attitude (H5)	0.036	0.402	Not supported

Multiple regression analysis was performed to test the research hypotheses, namely the relationship between the dependent variable (Attitude) and independent variables (Dark experience, Engaging entertainment, Casual interest, Unique learning experience and Emotional recreation) (Hair et al., 1998).

Table 4 presents the standardised coefficients (β) and their significance levels for each hypothesis. As shown in Table 4, we found support for two of five research hypotheses (H1 and H4) at a significance level lower than 0.05. Dark experience and Unique learning experience have a significant and positive effect on Attitude (β=0.302, p=0.000; β=0.391, p=0.000). We did not find any significant effect of Engaging entertainment, Casual interest, and Emotional recreation on Attitude (p=0.228, p=0.120 and p=0.402). Hence, H2, H3 and H5 are not supported.

Table 5 presents the Average scores calculated to determine the most desired dark tourism sites visited or plan to visit from Romania. It has been listed 20 sites where the respondents visited or intended to. Below are presented average scores only for the most listed dark tourism destinations with the motives named.

Table 5 Average scores of the most desired dark tourism sites visited or planned to

Motives for visiting or plan to visit a dark tourism site from Romania	The Merry Cemetery from Săpânța N=177	Bran Castle N=130	Sighet Memorial Museum N=71	Victory Square, Timișoara N=28	Revolution Memorial Timișoara N=28
To believe, I have to see	3.07	3.12	2.72	2.86	2.98
My interest in such a site	3.49	3.69	3.68	3.50	3.64
The notoriety of the site	**4.06**	3.82	3.55	3.57	3.32
Empathy with the victims	2.88	2.74	3.87	3.57	3.64
So I can tell more about the others	3.43	3.24	3.51	3.21	3.46
I'm learning more from what happened	3.67	3.75	**4.30**	3.68	**4.04**
Emotional experience	3.58	3.31	3.83	3.29	3.79
Curiosity	**4.36**	**4.31**	**4.01**	**4.00**	3.96
Contemplation of life and death	3.49	2.97	3.44	2.71	3.64
To have a correct picture of what happened	3.72	3.75	**4.44**	3.89	**4.07**

These results are discussed in the following section, together with research implications. Also, the limitations and future research directions of this research are presented.

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5. Conclusions and Discussions

The dark tourism niche becomes more and more attractive for many people because of the opportunity to learn, satisfy curiosity, discover the heritage, history related to death events, catastrophic events, paranormal activities, mystery, and bloody legends.

The first significant result of the empirical research was given by the Dark experience construct that has a significant and positive effect on Attitude. This result is not surprising because it was founded in previous research by Bissell (2009) and Allman H.R. (2017). This indicates that the tourist is curious about and want this thematic experience (see Table 5).

The second significant result is that the Unique Learning Experience construct has a substantial and positive effect on Attitude. This means that respondents are travelling for educational purposes. This being also mentioned when they had to give motives for their answer about the destination named (see Table 5).

The third significant study result pointed out the most listed motives by the respondents who visited or planned to visit Romania's dark tourism site. Motives scored with an average of more than four are *Curiosity*; *To have a correct picture of what happened; I'm learning more from what happened; The notoriety of the sites* (see Tabel 5).

According to these motives, the dark destinations listed by the respondents are The Merry Cemetery from Săpânța (listed by 177 respondents*),* Bran Castle (listed by 130 respondents), Sighet Memorial Museum (listed by 71 respondents), Victory Square, Timișoara (listed by 28 respondents), Revolution Memorial Timișoara (listed by 28 respondents) and others sites like Forest Hoia-Baciu, Union Square Timișoara, Liberty Square Timișoara, Corvinilor Castle, Prison Doftana, Fortress Poenari, Aiud Pain Memorial, Mine Anina, Transfăgărășan, Prison Jilava, Mărășești Mausoleum, Pitești Prison, Fortress Sarmizegetusa Communist prison Râmnicu-Sărat, Black Church Brașov, Jewish cemetery (listed by 41 respondents). Empathy with the victims is an influential motivational factor when visiting museum and locations related to the dead, suffering, revolution.

These results can help travel tourism agencies develop travel packages to encourage people to visit these dark tourist destinations. The destination management (local authorities, museums) can also develop marketing and tourism policy and strategies to attract tourists in this dark tourism direction niche.

The historical sites where people died or suffered are the most listed dark tourism destination. We must consider that 38.2% of respondents are youngers up to 35 years old, and most of them chose Bran Castle as a dark tourism destination due to Dracula's legend.

The anti-communist revolution makes Timisoara an authentic, ongoing dark tourism destination. Estimated numbers showed, before COVID-19 restrictions, that in 2021 Timisoara will have 1.5 mil visitors annually, and about 30 mil people from Europe have heard of TM2021 – Cultural Capital of Europe (postponed by 2023).

A limit of the research was given by the restricted region allocated to the data collection. Extend study in the other regions from Romania. A probabilistic method can help develop a national strategy on dark tourism destinations and pin Romania on the world's dark tourism map niche. Future directions regard the Theory Planned Behaviour constructs (Behavioural Intentions, Subjective Norm, Perceived Behavioural Control). If the study is replicated, considering this construct will raise the knowledge of tourist's motivational behaviour in visiting dark destinations. Also, to investigate the link between the motivations and post-communist country desire to visit a dark destination and sites.

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BOOKING TRAVEL THROUGH THE AIRBNB PLATFORM DURING THE COVID 19 PANDEMIC

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Abstract: *The collaborative economy, even if it has moulded well in the tourism market and has developed surprisingly, has been a controversial field from the very beginning, especially as it does not take place within a very well regulated legislative framework. The outbreak of the COVID 19 pandemic severely destabilized all industries, but among the most vulnerable to it was tourism. Not much is known yet about the impact of COVID 19 on traditional sectors, let alone studies or analyses of how the pandemic has affected non-traditional peer-to-peer accommodation. This article attempts a brief analysis of how people have booked or canceled their trips through the Airbnb platform since the beginning of the pandemic. The results show that the sharpest decline was recorded in April 2020 when the number of bookings fell by 72%, compared to the same period in 2019. In the summer months, when most people plan their vacation, the bookings were not numerous, but they kept a certain stability. Compared to June-September 2019, bookings in 2020, during the same period, decreased by 20%. The pandemic has hit this sector hard, especially as all pre-pandemic forecasts showed significant increases in peer-to-peer accommodation between 2020 and 2025 and therefore increases in overall revenue as a result of bookings. This study shows that peer-to-peer accommodation is just as vulnerable to such a pandemic as traditional accommodation. Providers need to rethink their offer in order to reduce financial losses and at the same time protect their employees and provide them with job stability. It can be seen that the cancellations and alterations of the services booked through Airbnb increased exponentially after the outbreak of the COVID 19 pandemic because people could no longer travel from one place to another and even if certain journeys were allowed, people were afraid or felt uncomfortable taking trips.*

Keywords: *Airbnb; COVID 19; collaborative economy.*

JEL classification: *O35*

1. Theoretical framework

There are a number of studies that show that the collaborative economy has destabilized the field of tourism, through its originality, thus becoming an important element in the tourism industry. The collaborative economy offers tourists the opportunity to 'have resources and […] organize among themselves or mingle with the closely related residential consumer species and act like producers' (Gretzel, Werthner, Koo, & Lamsfus, 2015). Among the many consequences that the collaborative economy has had on tourism has been the possibility of accommodating tourists in high-demand destinations where accommodation at certain times of the year was almost impossible. Thus, thanks to the services offered by the collaborative economy, the accommodation offer has increased and tourists can find a place to stay. At the same time, choosing such an accommodation increases the trust in person-to-person (P2P) accommodation services (Bardhi and Eckhardt, 2012). The collaborative economy has the potential to create new jobs, thus reducing unemployment in the area, by involving local communities in promoting tourist destinations and providing tourist services. The first area of tourism to be disrupted by the emergence of the collaborative economy was hospitality, where traditional accommodation is in direct competition with P2P

accommodation. Due to this situation many traditional accommodations had to adjust their offer and reorient themselves (Juul, 2015). The expansion of collaborative consumption in tourism has led many platforms, such as Airbnb, to offer tours and experiences to tourists once they arrive at their destination, via websites and mobile apps. An important role in the implementation and development of collaborative tourism in a destination is played by locals willing to get involved and tour guides, who can turn an ordinary holiday into an authentic, original and memorable tourist experience (Badulescu and Badulescu, 2016). The services offered by the collaborative economy are directly linked to the availability and use of internet-based technologies and collaborative platforms.

The latter are important both from the perspective of those managing the platforms and from the perspective of their users (Caldieraro et al, 2018). Thus, the proper functioning of the platforms requires an adequate IT 'infrastructure'. A well-developed infrastructure facilitates access to these services, makes them more popular and leads to increased use of collaborative services. Thus, it can be said that the intention to use collaborative services depends not only on financial and social motivation, but on an interaction of several factors, such as the spread of the Internet, the cultural influence of the place or the demographic factor, which determine people's participation in such services. At the same time, the motivations of the parties involved in the collaborative tourism service, i.e. providers and customers, are different (Benoit et al., 2017). Investigating particular features of entrepreneurs in different sectors would be an important point to further policies to fostering entrepreneurship in the collaborative economy (Badulescu and Badulescu, 2014).

The collaborative economy could also benefit from turning to ecotourism, getting the conservation-oriented and community-based ecotourism to the mainstream through efficient marketing and reservation systems, and increasing customer acceptance of products with basic quality standards (Badulescu and Bac, 2009).

The emergence of COVID 19 is one of the most tragic changes in recent history. Shortly after the first case was identified, the way of life we had been used to has changed radically. Governments around the world have taken various decisions to prevent the global spread of COVID 19, such as travel bans for certain periods, containment measures, etc. The measures taken globally to prevent the spread of the disease have had an immediate impact on tourism activities. The World Tourism Organization has stated that the tourism industry is one of the hardest hit by the pandemic outbreak, with bilateral effects on both the supply and demand.

Airbnb has become one of today's leading platforms for travelers looking to book a unique place or tourist experience. Regardless of their motivation for accessing a collaborative tourism service, most studies have shown that the trend is growing and that people are increasingly open to such services. However, the COVID 19 pandemic has changed this trend, greatly reducing demand.

2. Evolution of AIRBNB bookings in the first months of the COVID 19 pandemic

The collaborative economy is not developed in the same way in all the areas in which it is present or the geographical areas it covers, although in Europe and the US this concept is well known. According to a study by Barnes and Mattson, global revenues from the collaborative economy are expected to grow to $335 billion by 2025 (Barnes and Mattsson, 2016).

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Table 1. Monthly nights and experiences booked on Airbnb

	2019			**2020**								
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
					(in millions, except percentages)							
Gross nights and experiences booked	30.5	28.3	28.4	38.3	32.8	19.0	8.7	16.4	26.0	28.3	26.0	23.9
% Year-over-Year Change	31%	30%	35%	25%	17%	-42%	-72%	-50%	-21%	-19%	-21%	-23%
Cancellations and alterations	3.9	3.6	3.9	5.0	4.9	23.1	9.4	7.2	6.5	6.6	5.4	4.4
Cancellations and alterations as a % of gross nights and experiences booked	13%	13%	14%	13%	15%	122%	108%	44%	25%	23%	21%	18%
Nights and Experiences Booked (as net of cancellations and alterations)	26.6	24.7	24.5	33.3	27.9	-4.1	-0.7	9.2	19.5	21.7	20.6	19.5
% Year-over-Year Change	31%	30%	35%	22%	12%	-114%	-103%	-68%	-31%	-28%	-28%	-28%

Source: Statista Airbnb https://www.statista.com/, accessed 14.04.2021

While by the winter of 2020 all studies showed an increase in accommodation bookings via the Aibnb platform, with the emergence and global spread of the COVID 19 pandemic, this has taken an entirely different direction. This study aims to assess the extent to which the COVID 19 pandemic has reduced global bookings and therefore global revenue from this service.

It can be seen that bookings were significantly reduced in 2020 compared to 2019, therefore in April 2020 there was a 72% decrease in bookings compared to the same period of the previous year. Although the COVID 19 pandemic made its presence felt in China in January 2020, Airbnb accommodation bookings did not decrease, but instead increased from 28.4 million in December 2019 to 38.3 million in January 2020, which means about 10 million more bookings. Even though in February 2020 the notion of COVID 19 was beginning to take shape at European level, tourists did not seem very worried about this, as evidenced by the fact that global bookings on Airbnb in February 2020 were 32.8 million. It is indeed a decrease compared to the previous month, but not a very dramatic one. It was only in March that bookings began to take a turn for the worse, dropping significantly to 19 million bookings on the platform. The direction to follow in the coming months is not encouraging, especially as April comes with the lowest value of bookings of only 8.7 million. Despite an upward trend in May compared to April, bookings are not very numerous (16.4 million). The period June-August sees a slight increase and a stabilization of the number of bookings, due to better knowledge of the virus and the beginning of the holiday season but compared to 2019, it is still down by about 20%. September again brings a slight decrease compared to August, which may also have been influenced by the forecast of wave 2 of the COVID 19 pandemic. It can also be seen that in the first two months of 2020, although the corona virus disease was known, Airbnb recorded increases of 25% in January and 17% in February, compared to the same months last year. This is largely due to the fact that people have not yet become aware of the severity of the situation. Therefore in March when the COVID 19 pandemic

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began to spread globally and claim numerous victims, bookings in the Airbnb system were down 42% compared to March 2019, and in April 2020 the drop was even higher (72%). During May-September the number of bookings decreased, but the decrease was relatively linear.

Regarding cancellations and alterations of services booked through Airbnb, we can say that they increased exponentially after the outbreak of the COVID 19 pandemic because people could no longer travel from one place to another and even if certain journeys were allowed, people were afraid or felt uncomfortable taking trips.

In January and February 2020 the number of cancellations and alterations increased compared to the previous months, while in March and April, as the COVID 19 pandemic intensified, the number of cancellations and alterations increased by 122% and 108% respectively, compared to the same period of the previous year. The following months maintain a high number of cancellations and changes, until September when it returns to a relatively normal level.

3. The Airbnb's flexibility in the context of COVID 19

In principle, the COVID 19 pandemic has significantly affected the collaborative accommodation sector, namely Airbnb, but the chances of a comeback are high, given the operating principle of Airbnb. Whereas in traditional accommodation, meeting other people is unavoidable, using Airbnb you can book your accommodation and buy it online and at your destination you'll have your own apartment or room waiting for you, without having to meet other people if you don't want to. In this respect, Airbnb accommodation could benefit in the context of this pandemic. In addition, COVID 19 has prompted hosts to adjust their offer to mitigate losses, to adopt safety measures for tourists, to shift their focus to domestic tourists rather than foreign ones as before, or to rent for longer periods of time.

Opinions on the Airbnb travel system in the context of COVID 19 are divided. Dolnicar and Zare, consider on the one hand that the pandemic is a super-shock (Dolnicar and Zare, 2020). Although shocks are nothing new for tourism, which is constantly subject to disruptive factors such as natural disasters, economic crises, etc., the pandemic has affected tourism in a different way. The reduction or even banning of travel is causing fundamental changes in the field of tourism. On the other hand they consider that the COVID 19 pandemic brings with it changes in the behaviour of collaborative accommodation providers, decreasing their flexibility and motivations to stay on platforms (Dolnicar and Zare, 2020). Therefore, the possibility of tourism as an economic sector, to reorganize and recover on relatively the same premises is seriously compromised, and even less the return to the situation of a real lifestyle of touristic operators (Badulescu and Badulescu, 2014).

Other researchers see Airbnb as a winner. Like the traditional tourism industry, online travel platforms have also faced the COVID 19 crisis. Airbnb has reacted promptly and managed this situation quite well considering that the regulatory framework is not very well defined in this area. Taulli says that Airbnb "has weathered the pandemic relatively well compared to other major travel operators, whether hotel chains or online marketplaces" (Taulli, 2020). On a different note, "the involvement of local authorities and private entities in identifying and exploiting Euroregion's touristic potential, in improving the quality and specificity of cross-border tourism product" (Badulescu, Badulescu and Borma, 2014).

4. Conclusions

The COVID 19 pandemic is certainly the most disruptive factor to tourism activities in recent history. This paper analysed the evolution of bookings, alterations and cancellations on Airbnb, the largest collaborative accommodation platform. Following the data presented above, it can be seen that the drop in the number of bookings was very large and was directly

related to the events that happened since the beginning of the pandemic (the initial shock of blocking the Wuhan region), to the decisions that governments around the world took (blocking or even banning travel).As the table above shows, Airbnb booking cancellations have been numerous and managing and addressing them may be a new research topic.

At the same time, the COVID 19 pandemic has somewhat forced hosts to be more responsible when it comes to renting accommodation. There are many directions of research that can be explored that have been generated by the pandemic context. For example, one can look at the different elements of anxiety generated by the pandemic or how the Airbnb industry can survive and what opportunities it has in this period. As the effort to share property is not the same in different countries or cultures, this idea deserves further discussion in future studies, especially in the current global health context.

Most of the data shows that the consequences of the COVID 19 pandemic have had a strong negative impact on P2P rentals, in particular on the providers of such services, leaving them without customers and therefore without a significant part of their revenues.

Despite the fact that the research is brief, it provides some insight into how people have been booking since the outbreak of the pandemic and also provides a basis for more complex future research.

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FINANCE, BANKING, ACCOUNTING AND AUDIT

CASE STUDY OF THE ORIGIN AND THE EVOLUTION OF ACCOUNTING SYSTEMS REGARDING TO THE HARMONIZATION OF INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS) IN JORDAN AND ROMANIA

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Abstract: *It is valuable to take note that the majority of financial reporting pundits are in agreement that the financial reporting system of a country depends on several factors that include the legal, economic, and cultural background; The development of tasks performed by accounting is persistently inspired by needs of practice. It is clear of that accounting schemes play an essential role in the market economy, particularly in face of globalization of capital markets, where increasing need for comparable, transparent financial statements for the companies. Rather, it is proposed to present information that is used in making reasoned options amongst alternative uses of limited resources in the conduct of business and economic activities. The present paper discusses the possibilities to improve the accounting policies and procedures in Jordan and other Middle East countries in accordance with commitment of the International Financial Reporting Standards (IFRS). Throughout this study we used a qualitative approach, to outline an overview of the history of financial reporting and its evolution from the origin, to the growth and development of accounting systems by studying a considerable amount of bibliographic material, using different textbooks and journals on accounting theories but also public information presented by the accounting organisations and the government of the two analysed countries. Furthermore, the paper reviewed the achievements made in the convergence of International Financial Reporting Standards (IFRS), in the Middle East countries, in Jordanian context and in the European Union, specifically the case of Romania. International financial reporting standard (IFRS) implementation in Jordan has departed through several transitional phases wile in our previous work we noticed that Romania can be considered a benchmark of high degree convergence to IFRS.*

Keywords: *International Financial Reporting Standards (IFRS); Convergence; Procedures; Policies; Financial reporting quality;*

1. Introduction

Accounting has emerged from the need of people to know the amount of work they use, the wealth, the results of their work. Accounting is "the earliest of all management-disciplines, accounting is ancient it-self, accounting relates have the vocation to keep a certain number of events with economic consequences". The beginnings of accounting and its very essence in older times are in some studies confused with the beginning of the economic activity of the first human collectivities. The evolution of the accounting system is envisaged as driven by the political, economic and social conditions within the country. These include in particular a stringent need of attracting foreign investment and by this the requirement to

harmonize the accounting practices with the EU Directives and the IAS. Accounting-sources can be drawn to earliest times and are directly associated to the development of numeration and counting (Brown, 2006). With the development of trade and the founding of states, some form of organization and keeping accounts has emerged. One of the initial branded law codes, the code of Hammurabi, established by the Babylonian king Hammurabi (1792-1750 B.C.), revealed at Susa in 1901, surrounds a numeral of trade account observance guidelines. The process of accounting harmonization in Europe can be traced back to the times of Pacioli while his effort "Summa-de-Arithmetica, Geometria, Proportioni et Proportionalità" has extended all over Europe influencing the accounting practices on the entire continent. The first official effort that we found during our research, towards the harmonization of accounting in Europe has been made in 1978 with the implementation of the Fourth Council Directive 78/660/EEC of 25 July 1978 regarding the annual accounts of limited liability companies.

The objective of accounting statements is manly to give data about the financial position and its changes and the performance of an entity, which is valuable to a wide scope of clients in deciding on monetary and speculatory choices. The application of IFRS has the possibility to decrease earnings treatment and get better stock market efficiency. The importance and the role of financial reporting in this context is that it provides input into control instruments. Brüggemann et al. (2013) argued that in IFRS there is a specific focus on the information's role of financial statements. This is related to the main objective of the IAS regulation for a high degree of transparency and comparability of financial statements to improve the efficient function of capital markets.

In our previous studies (Dănescu and Botoș, 2016) we have reached the conclusion that there are very few states that have similar accounting systems and the ones who do are in principle very close geographically and related in history and/or culture, but in other cases where the geographical area is larger and the culture diverse, the differences found are more fundamental. Another conclusion from the same studies was that the harmonization process is not uniform, with some states opting for a gradual and long-delayed harmonization since the arrival of IFRS, others opting for partial harmonization with the exclusion of certain elements.

2. Research methodology

To approach the theme of this article, a theoretical and qualitative approach was adopted. The main aim of the research is to study the improvement of accounting policies and procedures in Romania and Middle East countries in particular the case of Jordan, for this the following objectives were framed for the present study:

- To analyse the procedure of convergence of IFRS within the universal accounting scheme;
- To observe the Financial reporting Quality in terms of qualitative characteristics;
- To propose some recommendations for better practices in the convergence of IFRS in Middle East countries specifically Jordan.

This study is based on the secondary information and existing research in the public domain. To reach the objectives of this study, this article espouses a qualitative approach, based on a process of documentation, critical analysis of information and selection and on creating a review of the history of financial reporting and its evolution. We derived the origin, growth and development processes of accounting by studying a considerable amount of bibliographic material. Furthermore, the paper reviewed the achievements made in the convergence of IFRS, in the Middle East countries, in Jordanian context and in the European Union, specifically the case of Romania.

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In our previous work (Dănescu and Botoș, 2016) we noticed that Romania can be considered a benchmark of high degree convergence to IFRS. A high degree does not mean the lack of divergences but that the divergences reported can be considered additions that bring a clearer picture of the information in the financial statements and performance, such as the divergence on standard issues of the balance sheet shape. There are also situations in which IFRSs are only partially taken over as in the case of classifying expenses in the income statement. However, other divergences are totally opposite to IFRS, such as those reported in the presentation of current and long-term debt in the balance sheet.

3. Financial reporting Quality

There are dynamics affecting the transformation of financial reporting like: the historical development of institutional forms; influences of socio-economic environment; political and governmental influences that have shaped the evolution of capitalist economies; financial markets and accounting practice. With the evolution of capitalism and the development of other factors, financial accounting has adopted different forms that respond to social and digital requirements, political and legal pressures and at the same time are shaped by transformations in the international political economy. Competing for capital in international markets increases the pressure for international convergence and mitigation of accounting disparities.

The effect of international and national accounting standards and especially the convergence level between the two, should also be taken into account when considering the quality of financial statements. Barth et al. (2008) highlight the importance of IAS standards for better quality financial information (a higher association of accounting results with share prices and returns, in addition to earlier mentioned factors); they contend that there are two motives which may deteriorate the optimistic force of accounting standards. Firstly, they state that IAS could be to some extent of lower quality than national standards for example when standards reduce management discretion resulting in accounting measurements which do not reflect performance and financial position as well as domestic standards. Secondly, Barth et al. note that quality improvements arising from IAS could be offset by the characteristics of financial reporting system other than standards.

The quality of financial statements is affected by many factors among others the incentives of managers and auditors, company characteristics and the quality of accounting standards comprising GAAP, to analyse the content of financial statements in more detail, their significance to the stakeholders should also be considered. When listed companies own one or more subsidiaries, they are required to prepare consolidated financial statements for the group. However, they are also obligated to present a parent company financial statement.

4. The quality of financial reporting in terms of the qualitative characteristics

Qualities of accounting data embrace: materiality, understandability and timeliness. Data cannot be functional to a someone who cannot recognize it. Information cannot be helpful to a person who cannot understand the information and, therefore, the purpose of financial reporting cannot be fulfilled without the concept of understandability (Beest and Braam, 2006). Only material information is included in the financial statement. Information is material if its omission will affect or influence the economic decision of the users. Information must be available when users need it.

Accounting information that makes data provided useful to users in making economic decisions must possess the following qualities: relevance, reliability, comparability, understandability, timeliness and neutrality. Relevance and reliability are the prime standard of superior accounting data. Information has the quality of relevance when it is capable of

making a difference in the fiscal choices of users by assisting them to appraise precedent and nearby occasions or confirming or correcting.

5. International Accounting standards in the Middle East countries specifically Jordan

The Arab countries were affected by the global economic mobility and the developments in which accounting practices were witnessed similar to the rest of the world, but this effect was in varying degrees due to the nature of the economic entities and to the disparities in the economic and social environment (Guerreiro et al., 2008). The detailed development of the accounting environment and the compatibility of the standards applied with international financial reporting standards are detailed in all Arab countries.

The adoption of international financial reporting standard (IFRS) by Middle East countries that seemed different from each country depending on the regulatory structure and development environment. However, as shown from the analysis presented in Table (1) below for the selected Middle East countries (Jordan, Iraq, Palestine, Saudi Arabia, UAE, Qatar) have implemented IFRS in the preparation of the financial statements of listed companies (IFRS, 2020); While Egypt the IFRS Standards are not required for domestic public companies. In addition, IFRS Standards are required for listings by foreign companies

Table (1)

Country	IFRS Standards are required for domestic public companies	IFRS Standards are required or permitted for listings by foreign companies
Jordan	YES	YES
Egypt	NO	YES
Iraq	YES	YES
PALESTINE	YES	YES
SaudiArabia	YES	NO
UAE	YES	YES
QATAR	YES	NO

Source: IFRS org. https://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/; accessed on 20 /03/2020.

for the following countries (Jordan, Egypt, Iraq, Palestine, and UAE), While not required in Qatar and Saudi Arabia.

International financial reporting standard (IFRS) implementation in Jordan has departed through several transitional phases. It started with a decision Nr. 45 on March 1989, by the Association of Jordanian Certified Auditors to follow International Accounting Standards (IFRS). In the second phase Jordan It issued the securities law Nr. 23 for 1997 to restructure capital market. According to this law, it formed the securities commission, Amman Bourse, and Securities Depository Centre as three independent institutions (instead of one institution, Amman stock Exchange since 1978) (Zandah, 2006). Based on articles 9 and 53 of securities law Nr. 23, the securities commission issued instruction Nr. 1 for 1998 entitled "Disclosure instruction and accounting and auditing standards and qualifications of auditors of organizations subject to commission's control. In this instruction the commission required, from listed companies, the adoption of IFRS on the condition it does not contradict local laws and required companies to disclose the impact of IFRS on Financial Statements. The third phase was the issuance of corporate law Nr.40 for 2002 which required the use

of IFRS (article 195 of the law). Followed by the temporary law Nr.73 of 2003 entitled "Regulating the legal accounting profession" which did not name which accounting standards should be used. The period from 2003 until now may be called the governmental organization of the accounting profession.

In 2004 the Jordan Securities Commission updated its disclosure instruction Nr.1 of 1998 adding to its several important disclosure items in the annual reports as follows: 1. Description of all important risks the company subject to. 2. Any contracts signed with the chairman or any management board member or the CEO or any employee of the company or their relatives with any subsidiary or affiliate company 3. An acknowledgement by the chairman of the board, the CEO and finance director that accounting information in the company's reports are true, accurate, and complete 4. The credit rating of the company and any change in it 5. The purchase of treasury stock and the disposal of it 6. Stipulating a period not to exceed one week for filing with the commission a detailed report on any substantial corporate matter with a copy of the public disclosure made.

6. International Accounting standards in Romania

The case of general accounting standards in the EU also shows that once the Decision to adopt IASB standards has been made, the implementation of these standards Into EU regulation is pressured by the multi-point governance character of the EU and the assignment of standard setting to an independent private international organization.

Powerful national and transnational economic actors managed to force the Commission to leave aside several debatable necessities of an (I.A.S.B) standard (IAS 39) in arrange for the latter to be applicable in the EU by January 2005. This "Europeanization" of IASB standards might run the risk of undermining the (continental European) member states' ultimate goal of restoring the global competitiveness of their capital markets (Patrick Leblond, 2005).

In the case of accounting standards, it means that investors should favour supranational rules that are in closes as potential to the public statutes with which they are mainly familiar. This is because investors want to minimize the cost of learning the new, common standards. As for companies, those whose shares or bonds are listed in only one country should also favour financial reporting standards that are as close as possible to the national ones they are most familiar with.

Development of accounting in Romania can be traced to the influence of two larger and interrelated historical forces, the first force, is Romania dependency on other great power and the consistent presence of external shocks, in middle ages the territories that later became Romania contended first with the kingdom of Hungary and later with the ottoman empire, second forces, and Austrian empire and the Austro-Hungarian empire also exercised hegemony over Romania, it was not until the treaty of San Stefano (Hentea,2007), signed in 1878 after the defeat the Ottoman Empire in the russo-turkish. The era of Romanian autonomy was not long-lasted; after the second world war, Romanian was occupied by the Soviet Union, which propped up the communist regime of Nicolae Ceausescu. Regarding the evolution of accounting and of the Romanian accounting system, The Stage of "Socialist Realism" (1947-1989), a stage characterized by: 'operating' in the absence of the real and effective price mechanisms. The purpose of the scheme was to document direct consequences of the actions of the state enterprises in monetary terms but deriving from the pre-determined prices. As costs were managed and arranged evidences created by the scheme shortage and fiscal substance. Obsessed by the communist beliefs, it was proposed to distribute accounting data impracticable for guiding economic performance. In result, accounting was counterbalanced. Accounting proofs were much extra imperative than financial declarations. The Romanian accounting-scheme with its

German and French origins was overlay by a version of the Soviet based system. The Chart of Accounts were issued for different economic sectors (industry, agriculture, services) by the Ministry of Finance, mutually with especially fine described positions of regulations concerning the listing and dealing of data, and financial reporting.

After the 1989 revolution (MATIS, 2004). In 1991 were subjected Accounting rule no. 82 and the guidelines for the realization of accounting regulation GO 704 by which was introduced of market driven accounting principles. In this period Romania has started the beginning of transition to the market economy. The conversion procedures, from the consolidated economy to the market-based economy symbolize locate of compound modifications of which the input issue involves privatization, labour market reform. Renovation procedures require to be sustained with precise determines, comprising the growth of suitable institutional framework, education of the accounting professionals, legal enforcement. (MARIUS, 2013). In 1994 a system of accounting, based on the French system and incorporating a revised "chart of accounts" was introduced. The Romanian accounting system is codified and rules driven, being based to a large extent on the French model, with a chart of accounts consisting of some 100 obligatory accounts, each with its account name and number defined by law. For each new activity (see the case of leasing, merger, and provisions) the Ministry of Public Finances issued a methodological guideline, with accounts, accounts correspondence and registration flows, obligatory to follow. In 1999 the Romanian Accounting Standards were modified, with the beginning of Ministry of Finance Order no. 403 (1999) regarding the introduction of a national GAAP harmonized with the EU 4th accounting directive and the International Accounting Standards. The latest Romanian (GAAP) has been realistic initial through the financial reports for the year 1999. In 2001, the Ministry of Finance Order no. 403 (1999) was supplanted by the categorize number 94 of the Ministry of Public Finance (2001) considering the realization of accounting-harmonized by the E.U fourth accounting dictate and the International Accounting Standards. The new order stated that a number of 72 enterprises traded on Bucharest Stock exchange market, 20 national enterprises and 105 listed on the secondary stock market RASDAQ were supposed to use the international accounting standards for their financial reports for the year 2000. In 2006 the entities whose shares were listed on a regulated market and were preparing consolidated financial statements were required to use IFRSs for their financial reports from 2007 onward as stipulated in Romanian Ministry of Public Finance order no. 1121 (2006). Public interest entities are still allowed to use IFRSs for their individual and consolidated financial reports as an option for additional disclosure purposes (their legal requirements were to prepare financial reports according to RAS/ EU 4th directive). The Order no. 881 of the Romanian Ministry of Public Finance (2012) introduces the requirement for the entities whose shares are traded on a regulated market to prepare their individual financial statements according to the IFRS Financial institutions are also required to prepare their financial statements according to IFRSs. These entities are no longer required to prepare financial reports according to RAS and are compulsory to keep on applying I.F.R.S yet later than their shares are no longer operated on a regulated market.

The Ministry of Public Finance issued - Order 1286/2012, for the approval of the accounting rules accommodating with the International-Financial-Reporting-Standards, related to the enterprises whose securities are listed on a regulated market, NICOLAE BOBIŢAN et al. (2012).

In the case of financial reporting, there may be sustained efforts to apply IFRS, but the level of convergence is different, depending on the jurisdiction, due to certain economic, social and administrative elements that may accelerate or slow down the convergence process. In Romania as well as in other European countries such as the Czech Republic and Poland, the harmonization of national standards to IFRS has been largely achieved with exceptions which, in our opinion, are meant to protect certain interests of the national entities of these states (Dănescu and Botoș, 2016).

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5. Conclusions

The International Financial Reporting Standards IAS/IFRS rely on a principles-based system to set accounting standards. This structure, in revolve, offers suppleness to leave potential the universal receiving of the standards. Mandating the use of IFRS, even if they require superior accounting practices and expanded disclosures, may not make corporate reporting more comparable or more informative. In Jordan and Romania, most economic entities are small and medium-sized enterprises. Yet, in together states, the (IAS/IFRS) request is compulsory the particular those enterprises that are listed in the stock market. The objective of this paper is to examine the improve of accounting policies and procedures in Romania and Middle East countries in particular in case of Jordan. However, as it was mentioned in this paper for the financial reporting Quality and affecting the transformation of that ambiguous the historical development of institutional forms and influences of socio-economic.

Therefore, the results of this study are of interest to the current discussion on the mandatory of IFRS adoption. However, the results can be extended to other emerging countries as the Jordan accounting system is similar to the systems in Middle East countries, as well as other countries applying globalization of accounting standards measurement, recognition and presentation rules for financial reporting.

6. Acknowledgements

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THE IMPACT OF ACCOUNTING INFORMATION SYSTEMS ON UNDERSTANDING BUSINESS PROCESSES

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Abstract: *The business environment has evolved over time, so that it has become a dynamic and hyper-competitive environment. The business environment presents many risks. The purpose of the risks is to highlight the success or failure in the business, because some risks are inevitable and some risks can be controlled by companies. For a company to succeed and survive in a dynamic and hyper-competitive business environment, they must find and introduce radical and incremental innovations simultaneously.*
Over time, many small, medium and big companies have succeeded in implementing accounting information systems, in order to make their activity more efficient. Investing in accounting systems has a positive impact on the company because they improve the efficiency and effectiveness of the organization, as well as increase the performance. Increasing efficiency and effectiveness means better management and dissemination of information within the company, so that employees have easier access to information and based on them to take the best decisions.
The research method used was quantitative using the questionnaire based on which we identified the main advantages and disadvantages of using accounting information systems, as well as the influence of these systems on the organization and the criteria underlying the choice of these systems. The most relevant results we obtained through our research were: accounting information systems offer both advantages and disadvantages, these systems improve the performance of the organization, and the criteria for choosing these systems depends most on the speed of implementation of the systems.

Keywords: *efficiency, performance, information system, decision, business process, environment*
JEL Classification: *M15, M19, M41*

1. Introduction

The business environment in the case of economic transactions is a complex concept that takes into account all the relations and internal and external factors of the companies. This environment has 2 components: an internal component (presents the way of organizing and managing the resources of a company to optimize the business according to the strategic mission and objectives of the company, but also for the most efficient use of resources) and an external component (the relations that are established between the company and the economic operators participating in different commercial transactions and other structural components of the national economy).

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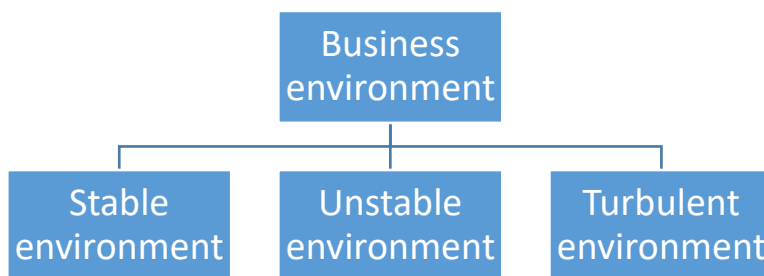
Figure 1: The three forms of business environment
Source: Author's own creation

Business processes are dynamic and constantly changing. According to Meiryani (2015), business processes are the main activities of a company, as a result of which information is processed that will appear in various reports that substantiate the decision-making process. For some companies, this environment can be considered simple or complex, stable, unstable or turbulent (see figure 1). The stability and complexity of the business environment affect the structure, the managerial style, but also the organizational culture.

Most of the time, companies are unprepared to meet the risks. The main risks to which companies are exposed are risks of a political nature (legislative changes) that can influence the activity of the company. For a company to succeed and survive in a dynamic and hyper-competitive business environment, they must find and introduce radical and incremental innovations simultaneously. This is where the investment in accounting information systems comes in, to help companies to manage and organize their activity as efficiently as possible. The article is structured as follows: a short presentation of the literature review where we presented the main concepts of the article refers on accounting information systems and business environment, a short presentation of the research methodology used in this article, analysis of the main results obtained based on the questionnaire and a short conclusion of the article.

2. Literature review

At the beginning of the last century, IT technologies began to be used in economic activities. Information systems could be used in the field of accounting, as this is the main source of economic information of a company.

The computerization of the accounting information system was tempered by the internal control, being guided by the internal audit and guided by the financial audit. The use of solutions based on information technology in the activity of companies has evolved from the option stage to the necessity stage. Initially, this system was used only for bookkeeping repetitive economic transactions, but this system has developed over time due to the accelerated evolution of technology, becoming an information system for internal and external users.

Innovation is the element that leads to better performance of companies and the reduction of financial and organizational obstacles, making it possible to access capital markets.

"Accounting Information Systems (AIS) are a tool which, when incorporated into the field of Information and Technology systems (IT), were designed to help in the management and control of topics related to firms' economic-financial area." (Grande et. al, 2011)

The Accounting Information System is considered to be one of the most important systems of any organization because it can be identified in three components, namely the information system, the "business language" and the source of financial information (Wouters & Verdaasdonk, 2002). After processing the financial-accounting information, decisions can be taken and the legal obligations can be fulfilled.

The purpose of Accounting Information System (AIS) is to automatically process the underlying accounting information. Facilitates the communication of financial information both inside and outside the organization. "The effectiveness of the AIS is measured by its ability to provide essential service, such as customer billing and payroll, and to meet the informational needs of its users and must provide accurate, trustworthy information to its users in a time frame, and in a form, that are relevant to their needs. It must include suitable internal control to protect the integrity of the information, to protect the resources of the enterprise" (Saeidi & Prasad, 2014:57).

Accounting information is useful for the decision-making process. Accounting allows managers to explain decisions made in a language common to all information users. After the implementation of the accounting systems in the companies, there was an improvement of the decision-making process, of the internal controls and of the quality of the financial reports, thus facilitating the process of the company's transactions (figure 2).

The information systems have a role in the companies supporting the organizational efficiency and encourages the innovation and the change of the business model. The information system can influence the competitiveness of a company as follows:

- sustaining operational efficiency
- innovation of the business environment and change of the business process.

Figure 2: Using AIS
Source: Author's own creation

According to Fitriati and Mulyani (2015:170), AIS is an essential tool for an organization "to provide added value" and to provide "competitive advantages for the organization". The functions of these AIS provide important information that substantiates the decision-making process, thus ensuring better planning, management and control over the activity. Bodnar and Hopwood (2004, cited by Fitriati and Mulyani, 2015) consider AIS to be "a collection of

data, processes and procedures" that provide essential information for users of financial-accounting information.

Grande et al. (2011) state that there is a positive relationship between AIS and performance, as they increase productivity and provide flexibility.

3. Research methodology

In this article I used quantitative research using a questionnaire in order to analyze the impact of the use of accounting information systems on business processes. This type of research is used on explaining human behavior and the factors that determine it. The questionnaire consists of a set of ten questions structured in a section containing demographic questions and a section containing questions specific to the research topic of the article, to which answered by 14% males and 86% females, with age between 20 and 27 years. The sample of respondents consisted of students from Bucharest University of Economic Studies and employees in the economic field.

The main research questions were:

Q1: What is the most significant influence regarding the use of accounting information systems within an organization?

Q2: What are the criteria used to choose an accounting information system?

Q3: What type of company do you think should implement accounting information systems?

In the next section we will analyze the answers obtained based on the questionnaire.

4. Findings

Following the research conducted based on the questionnaire, we obtained the following results for the demographic questions that are represented in figure 3:
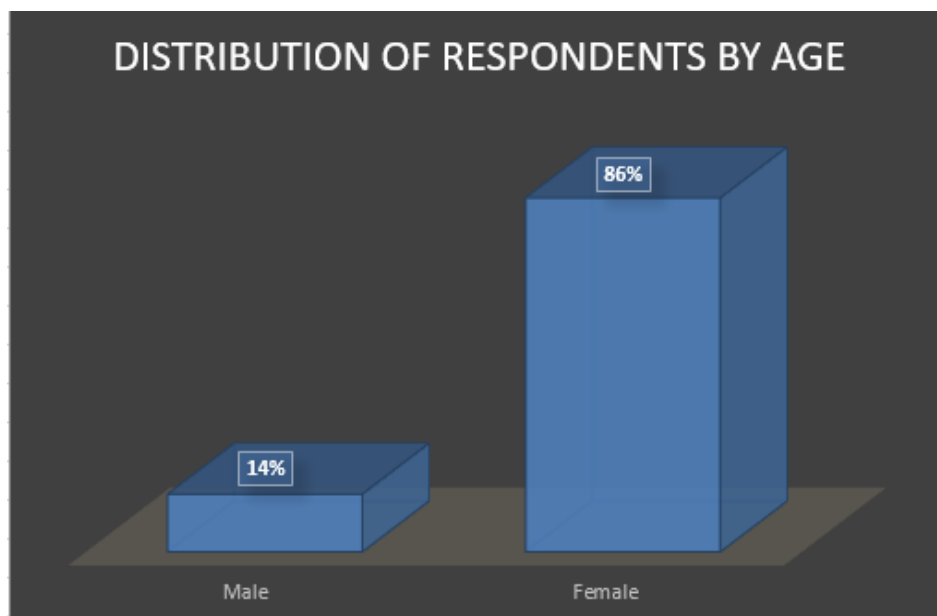
Figure 3: Distribution of respondents by age
Source: Author's own creation

According to the figure 3, most respondents are female, as most students and employees in economics are female according to a study conducted by ANS in 2020.

To the questions specific to the research topic of the article, we identified that 44.4% of the respondents have an experience in using accounting systems of less than 6 months, the rest of the respondents having an experience between 1 and 5 years.

Q1: What is the most significant influence regarding the use of accounting information systems within an organization?

Accounting information systems have the main role of influencing the performance of the organization because the processed data are much more reliable, accurate and provide managers with a much more accurate information on the situation of the organization. Through the information generated by these systems, managers make the best decisions regarding the company.

Employee involvement is a very important component in improving the organization's performance. If they are responsible for the continuous improvement of the results and the services offered to the clients then the performance will improve significantly.

Q2: What are the criteria used to choose an accounting information system?

The criteria on the basis of which an accounting information system is chosen are: the speed with which the system is implemented, design friendly, the possibilities of personalizing the system according to the specifics of the clients that the organization has in its portfolio, the cost of the accounting and installation system. in operation, as well as whether this system provides templates to guide users of financial accounting information in the use of the systems.

According to Senior Software (2021), the implementation duration of an accounting information system depends on the size of the company, the number of users, the number and complexity of modules and the level of changes made to the program (customizations). Before starting the implementation of the system, the company must ensure that it has a well-structured IT infrastructure so that the implementation can be done as quickly as possible.

Q3: What type of company do you think should implement accounting information systems?

According to the results obtained based on the questionnaire, large companies should implement these accounting information systems. A large company has more resources to cover the costs of acquiring and implementing the accounting information system.

The accounting information systems implemented within the organization must be flexible so as to adapt to the volume of transactions and organizational changes within the organization. The costs associated with the effort or financial investment required to modify and maintain the IT infrastructure must be offset by the benefits offered by the company's IT products (Palade & Tanasă, 2016).

Accounting information systems offer the company the opportunity to better organize its business activities by paying "increased attention to the company's main objectives and customer requirements" (Kennedy & Brewer, 2005).

According to the study conducted by Thapayom & Ussahawanitchakit (2015), the mathematical errors created by manual information processing are reduced with the automation of company processes. Thus, financial reports are generated more easily and in a timely manner, and managers make decisions much easier because the information is much clearer and much easier to understand.

According to Elbashir et al. (2008), the added value of the business following the implementation of accounting information systems can be classified on 2 levels:

- The performance of business processes that include the benefits of using these systems
- The performance of the organization that includes characteristics of the strategy established by the company and the way in which the objectives are managed.

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According to Workwise.com (2020), the main benefits of implementing accounting information systems on business processes are:

- data security using various mechanisms to prevent unauthorized access to confidential company data
- increase productivity because it eliminates redundant processes
- streamline because it automates all the processes within the company
- offers mobility and flexibility so that employees can work regardless of location (office, home) or any device (phone, tablet, laptop, PC)
- offers the user the possibility to make forecast reports

Table 1. Advantages and disadvantages of accounting information systems

Advantages	Disadvantage
- easy to use - efficient management of the activity - intuitive - good structuring of modules	- may have resolution issues - high setup costs

Source: Author's own creation

5. Conclusion

Given that the business environment is very dynamic and constantly changing, an organization must implement IT systems to help the organization more easily carry out its planned activities.

Manual activities have been replaced by the use of efficient accounting information systems, so as to provide clear and transparent information.

In conclusion, accounting information systems have a major impact on improving business performance, because they offer benefits to the company and especially the opportunity to grow.

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SERVICE QUALITY IN INSURANCE COMPANIES

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Abstract: *Insurance services are a special category of services, characterized by a high standardization and at the request of customers to protect themselves from a number of financial losses that they may suffer as a result of risks. For this reason, it is very important that insurers provide quality services to customers. Customer satisfaction is paramount for attracting new customers and retaining existing ones, thus achieving a loyal customer base. They will recommend the insurance company and other potential customers if they are satisfied, thus increasing the market share of the insurance company. The quality of insurance services and the relationship between the insurance company and the client have been the subject of many studies over time, most often being followed by the impact that the quality of services has on their behavior. Starting from the identified problem, I set out in this paper to look at how consumers' perceptions of the quality of insurance services influence their perceptions of their relationship with the insurance company and implicitly their behaviour towards it.*
Starting from these approaches, we aimed in this paper to see what is the meaning given by the consumers of the insurance services of the company Allianz Țiriac to the concept of quality of insurance services.
Our study consisted of an extensive process, carried out in several stages of work, namely: elaboration of the questionnaire addressed to the insurance company's clients, establishing the sample, collecting data based on questionnaires, centralizing and processing the data and interpreting the results.
The case study took place over a month, on a sample of 300 people, most of the respondents are between 26 and 45 years old, who work in the private sector and came monthly between 1800-290 lei.
The GAP analysis highlights some aspects of the services offered by Allianz Țiriac. A negative GAP highlights the unfavorable aspects of the services provided by the insurance company and raises an alarm about the situation of the company.

Keywords: *customer, satisfaction, insurance, gap, perception, expectation*

JEL Classification: *G21, M31*

1. Introduction

In the literature there is an approach according to which the quality of services must be conceptualized and operationalized both with the help of perceptions of service performance and with the help of expectations (Parasuraman, Zeithaml and Berry).
Another current of criticism of the above-mentioned approach led by Cronin and Taylor then emerged, suggesting the conceptualization and measurement of service quality similar to the attitude only with the help of perceptions of service performance.
Age has been analyzed in the literature as a determinant of consumer satisfaction (Decker, 1981; Weitzer, Tuch, 2005). Young respondents reported a lower level of satisfaction with Lebanese postal services than older people, especially those in the most productive age group (Dima Jamali, 2007, p.378).

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2. Measuring the quality of services

Most of the methods of measuring and evaluating the quality of services developed and published in specialized papers are based on conceptual models of service quality. From a structural point of view, the methods are similar: a hierarchical structure of service quality characteristics (dimensions and attributes), measurement procedures, formulas and / or algorithms for determining and calculating service quality indicators is proposed. Representative methods include: SERVQUAL (Parasuraman, Zeithaml and Barry, 1988), SERVPERF (Cronin and Taylor, 1992), EP (Teas, 1993), SITEQUAL (You and Donthu, 2001), Webqual / eQUAL (Barnes and Vidgen , 2005), EtailQ (Wolfinbarger and Gilly, 2003), EWAM (Schubert, 2003), e-SERVQUAL (Zeithaml, Parasuraman, Malhotra, 2002), ESQUAL (Parasuraman, A., Zeithaml, VA, Malhotra, 2005) and WebQEM (Olsina, Rossi, 2002).

SERVQUAL was the first method developed and applied to evaluate the quality of services and was the subject of a large number of experiments reported in specialized publications. The method has also been applied and tested in the field of services. It should be noted that all other methods have been developed starting from the SERVQUAL conceptual architecture.

Although widely applied, the SERVQUAL method has received numerous criticisms regarding the number of dimensions, the calculation of indicators, the measurement scale, etc. As a result of the experiments performed, the three specialists came to the conclusion that the quality of a service is influenced by many determining factors, called "dimensions" of service quality.

The 10 dimensions of service quality that the authors (Parasuraman, Zeithaml and Barry) proposed in 1985 are: reliability, receptivity, credibility, kindness, security, competence, accessibility, communication, understanding the client and tangibility.

Reputable American researchers calculate the GAP in the form of the difference between the perceptions and expectations of the beneficiaries regarding the quality of the services. The authors (1988, p. 17) present expectations in the form of consumer desires, which they consider that the service should provide, and perceptions refer to consumers' beliefs about the service provided, but restrict in five dimensions all the previous 10 dimensions.

- tangibility, which includes the existing physical facilities;
- reliability, which refers to the institution's ability to communicate accurately and according to commitments;
- receptivity, which includes the steps of the institution in providing prompt services and providing support to citizens;
- safety, which refers to the competence, respect and honesty of employees;
- empathy, which aims at treating each client with due attention, ease of contact and communication with him.

We considered it important to present in this paper what is the meaning given by the consumers of the insurance services of the company Allianz Țiriac to the concept of quality of insurance services.

We can agree that the service quality is the gap between customer expectations regarding the service and quality and the perception after the use of the service. If the consumer gets a higher perception after using the service than his expectations about it, we can say that is a quality service.

The SERVQUAL model consists in questioning customers through 22 statements about their perception regarding the quality of service, as well as 22 statements about their expectations regarding quality. Respondents are asked to evaluate those statements using a five-step Likert scale. The statements represent the dimensions of service quality based on five

groups of factors that determine customer satisfaction: seriousness, tangibility, promptness, security and empathy.

In the study, the target population targeted people who accessed the insurance services offered by Allianz Țiriac between January and February 2021. This population was chosen because it was the most appropriate to provide answers about the degree of satisfaction felt after accessing the services offered by the insurance company. Due to the fact that the author did not have access to a list of personal data of the insured, it was not possible to use a probabilistic sampling method, using instead a non-probabilistic sampling method, respectively the rational selection method. This is a sampling method by which the population is intentionally selected based on the researcher's judgment.

To test the internal consistency of the questionnaire, the Cronbach's alpha coefficient (α) introduced by the American psychometricist Lee Cronbach in 1951 was calculated. The Cronbach's alpha coefficient is most often used in this regard in the literature. The value of the Cronbach alpha coefficient of at least 0.70 is considered to be the criterion to demonstrate the internal consistency and validity of the research instrument (Nunnally, 1988, p. 96).

The level of the coefficient regarding the dimensions of the insurance services reached values higher than 0.7 except for the empathy dimension where the value was 0.557. Due to the insufficient internal consistency as well as the manifest doubt of the clients in answering, item 23 was abandoned.

After removing this item, both the questionnaire on expectations and the one on citizens' perceptions included 22 items each. The Cronbach's alpha coefficient was calculated separately, on each dimension for both expectations and perceptions.

3. Purpose and objectives of quantitative research

The purpose of this approach was to identify the expectations and perceptions of customers regarding the insurance services offered by Allianz Țiriac.

The main objectives of the research were:

- determining the gap between customers' perceptions and expectations regarding the insurance services offered by Allianz Țiriac.
- determining the aspects that influence customers' perceptions regarding the insurance services offered by Allianz Țiriac
- verifying the influence of the age variable on customer satisfaction with the insurance services provided by Allianz Țiriac

There is a relatively small number of articles in the literature that address the quality of insurance services and the degree of customer satisfaction with the insurance services provided.

In the works of several authors (Dotchin, Oakland, 1994, p.23), it has been shown that there are significant differences in the perceived level of quality of services on the dimensions of SERVQUAL, that there are differences in perception of satisfaction with services provided by questioned (Dimitriades, Maroudas, 2007, p.40), that there are differences in the perception of satisfaction with the services provided depending on occupation, age and environment: urban or rural (Jamali, pp.376-378).

The research hypothesis was established taking into account the state of knowledge regarding the approached subject and the results of the qualitative research undertaken.

H1. There are significant differences across the five dimensions of customer satisfaction (tangibility, reliability, responsiveness, security and empathy) in terms of customer service satisfaction depending on the age of the customer.

4. Determining SERVQUAL score

Determining the SERVQUAL score involved going through the following steps:

The first stage in the evaluation of the quality of the insurance services consisted in calculating the average and the standard deviation for each of the 22 pairs of expectations / perceptions statements;

The second stage involved the calculation of the difference between the perceptions and expectations of the clients regarding the insurance service quality;

The third stage involves the interpretation of the SERVQUAL score.

The values of the SERVQUAL score can be the following:

- positive values that suggest that at the level of the insurance service quality is better than expected;

- negative values, which highlight that at the level of the insurance service quality is weak;

- zero value, which means a satisfactory level of satisfaction.

SERVQUAL score = Perception score - Expectations score

To measure the values of the five dimensions, the scores of all the items within each dimension are summed and divided by the total number of items that make up that dimension.

The calculation of the mean and standard deviation, but also the testing of all hypotheses were performed in SPSS.

It is easy to see from Table 1 that there is an obvious difference between the averages of all dimensions corresponding to customer expectations and their perceptions of insurance services.

The SERVQUAL score is negative, there is a significant negative difference between customers' perceptions and expectations regarding insurance services. This result indicates an inefficient performance of the insurance company.

Table 1. Distribution of the values of the results of customer expectations and perceptions

DIMENSION	Exepectation		Percepţii		GAP
	Average	Std. deviation	Average	Std. deviation	P-E
TANGIBILITY	4,27	0,801	3,34	0,928	-0,93
RELIABILITY	4,65	0,587	3,63	0,941	-1,02
RECEPTIVITY	4,41	0,732	3,87	1,001	-0,54
SAFETY	4,62	0,522	3,84	0,916	-0,78
EMPATHY	4,49	0,567	3,38	1,1078	-1,11
TOTAL	4,38	0,642	3,65	0,978	-0,87

The largest difference between the averages of perceptions and expectations is given by the empathy dimension (-1.11), and the smallest difference occurs in the case of the receptivity dimension (-0.54).

5.Data analysis

Following the application of the questionnaires, the data were analyzed using SPSS version 20.0.

First, the internal consistency was determined for each of the five SERVQUAL dimensions, in order to evaluate the reliability of each dimension to assess whether all items in that dimension actually refer to the same phenomenon, so that there is a correlation between the items of each dimension. This is measured using Cronbach's correlation statistics on a scale of 0 to 1, where 1 denotes a perfect correlation between item scores and zero suggesting that there is no correlation between item scores. Values greater than 0.7 are considered acceptable in terms of fidelity and validity (George, Mallery, 1995, p.226).

To test the internal consistency, the Cronbach's alpha coefficient was calculated for each dimension. The composition of the five dimensions for both perceptions and expectations is as follows:
- tangibility - 4 items;
- reliability - 4 items;
- receptivity - 7 items;
- safety - 4 items;
- empathy - 3 items.

6. In conclusion

In order to achieve the established objective, the expectations and perceptions of the clients were identified in order to determine their satisfaction regarding the insurance services. In this regard, customer questionnaires were applied for direct data collection. The questionnaires were designed following the adaptation of the SERVQUAL scale.

There is no clear consensus in the literature on the number of dimensions of service quality. Analyzing the model proposed by Grönroos (1984), the quality of the service can be seen through the prism of two dimensions, the technical quality (what "offers" the service) and the functional quality (the way in which the service process takes place, its result), and then the measuring instrument developed by Parasuraman and his collaborators in 1985 which contained 10 dimensions which were later grouped in 1988 into five dimensions, it was decided to use the measuring scale containing five dimensions with 22 items.

The SERVQUAL score of -1,077 suggests that the insurance process at Allianz Țiriac requires improvements on all five dimensions, as each of them recorded a negative score. The lowest score is found in the case of the empathy size -1.11, then also below the threshold "- 1" is the reliability dimension with the value -1.02, then the tangibility dimension with an intermediate score of -0.93, the score - 0 , 78 belongs to the safety dimension and the highest score -0.54 is of the receptivity dimension.

Age has been analyzed in the literature as a determinant of consumer satisfaction Following the verification of the hypotheses, it is observed that there is a weak negative link between the age range of the citizens and their satisfaction regarding the insurance services ($r = -0.167$, $p = 0.001$ less than 0.05). The results corresponded to the mentioned studies, the biggest difference in perception of the satisfaction of the insurance services was between the participants aged "18-25 years" and those aged "26-35 years". The lowest level of satisfaction with insurance services is felt by people aged "18-25 years", and the highest level of satisfaction with insurance services is felt by people aged between 26-35 years, and the level of satisfaction will then decrease in proportion to the age range. The older the customers, the lower their satisfaction with communicating with insurance services.

Regarding the results of this research, the age has affected customer satisfaction with insurance services.

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THE IMPACT OF REAL ESTATE INVESTMENTS ON THE PERFORMANCE OF THE ENTITIES LISTED AT THE BVB

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Abstract: *The current paper is part of a wider study which aims at identifying the determining factors of the performances of the entities in the real estate field and the setting up of a composite index of the companies' performances based on a sample of 29 companies listed at the BVB Bucharest (Bucharest Stock Exchange) in the year 2019 using one of the multidimensional data analysis techniques, the principal component analysis. The descriptive analysis, the principal component analysis for setting up the composite index of the companies performances were applied within the study in order to highlight the most important companies from the point of view of the financial performance. The descriptive analysis of the data set highlights the overview within the companies selected for analysis. The study aims at building a synthetic indicator that will show the financial performance of the companies selected based on 9 financial indicators using the principal component analysis PCA. The 9 indicators considered for the analysis were selected based on specialised articles and they are: ROA - return on assets, which reflect the company's capacity of using its assets productively, ROE - return on equity, which measures the efficiency of use of the stockholders' capitals, rotation of total assets, general liquidity ratio, general solvency ratio, general dent-to-equity level, net profit margin, gross return of portfolio.*

Keywords: *Real estate investment, performance, financial indicators, BVB*

JEL classification: M40, C00

1. Introduction

Investments represent the most important factor in the development strategies of domestic economy and in all the fields and sectors of activity. Real estate investments represent an asset that offers the possibility to rationally value a realty in order to reach performance. In order to reach the objectives established by the entity, accounting approaches are necessary, as well as the use of investing strategies in the management activity through the application of scientific techniques and methods.

In the past decade and a half the real estate market underwent interesting evolutions. After a period of sustained growth, the year 2008 brings a major change. Compared to other categories of investment, real estate investments are heterogeneous, indivisible and have high management costs and they pose serious administration issues, such as: rent collection, repair works, re-renting, so that this type of placement becomes quite unattractive for small investors.

Also, another feature of decentralised and inefficient markets, such as the real estate one is that they tend to have higher transaction costs. Also, the transactions can have confidential character which, in many cases, leads to real difficulties in the formation of the price and the assessment. Unlike the stock markets that deal with financial instruments, in the case of a real estate market, there is no centralised market price, so that the price of the last transaction becomes a standard – if it is public – because very often it happens that the price is not known publicly. So, a natural consequence of these features is that the small investors cannot participate actively at the real estate market.

The plurality of financing forms and instruments that can mobilise capital resources make the financial decision a matter of option / choice. Thus, we begin with the identification of

their financing need and the entities must choose the optimal financing variant from the point of view of the risk and the cost.

The returns obtainable as a consequence of the real estate investment can sometimes be higher than other types of investments. The increase of the request on the real estate market brought an increased attractiveness for the real estate investments.

2. Literature Review

Tongknog (2012) analyzes the key factors influencing the decision and speed of capital structure adjustment for Thai listed real estate company and indicates that the factors influencing leverage is industry median leverage, profitability, company size and growth opportunities. The results support the theory that companies with higher profitability tend to have less debt and companies with greater opportunities tend to have higher leverage.

Costea (2012) analyzes the determinants of corporate financial performance and shows that the performance indicator (net profit) has a strong correlation with changes in turnover, company size, portfolio yield and a negative correlation with changes in fixed assets.

According to Nicolescu (2012), financial profitability is positively influenced by turnover and negatively influenced by interest and leverage. Economic profitability is instead positively influenced by turnover, while current asset turnover is negatively correlated with leverage.

Piciu (2012) analyses the correlation between risk and profitability in the construction industry in Romania. He points out that interest rate and leverage have a positive correlation with company performance. In contrast, Ghencea (2008) highlights that leverage and company capitalization rate significantly affect total shareholder return.

Dragota (2008) conducted an analysis into the dynamics of capital structure determinants for the Romanian capital market and finds a positive correlation between leverage and growth opportunities.

Garcia Jara et al. (2011) aim to identify this type of influence by grouping the influence factors to evaluate the quality of the accounting information and ease the financial analysis process carried out by various users. Lannto and Sahlström (2009) also limit themselves at a whole indicators series when analyzing the impact of the evolution of the Finnish norms to IFRS.

Triandafil et al. (2010) analyzes the macroeconomic impact on the Romanian listed companies' profitability, using data between 1997-2007. In order to evaluate the profitability, the indicators taken and used from the financial statements are the company liquidity, solvability and firm's dimension (together with macroeconomic variables). The conclusion of this study was that they discover a significant influence of liquidity, solvability and dimension of the firm on profitability.

An analysis model proposal based on modern performance indicators is also given by Savin (2013), who limits himself to promoting the global result, also considering aspects regarding the social and environment performance.

The advantages of using principal component analysis are emphasized by Armeanu and Neagu (2011), who think that the main advantage of using this method is that it reduces the initial causal space to an equivalent space of less considerable dimensions. The authors rank the analyzed companies according to the registered scores of the principal two components.

The implementation of the principal component analysis is also found at Robu and Istrate (2013) who use the same indicators and the same grouping method, though aiming at emphasizing the impact of the financial crisis started in 2008 on the data reported by the Romanian listed companies.

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3. The analysis of the real estate investment impact on the performances of the companies

3.1. Material and method

For a long period of time, the financial performance was perceived as the ability to earn profits. A company can be seen as performing when it satisfies the interests of stockholders: The managers are interested in making a profit and their work will be paid as such; the owners want to maximise their wellbeing through the increase of the market value of the company, the stockholders perceive the performance as the ability of the company to distribute the dividends for capital investment, the creditors want to be sure that they would retrieve the loans in a timely manner from the company, the employees want a stable workplace, with material benefits, the state wants the company to pay its taxes, to create new workplaces and to be efficient. Briciu (2006) notes that „the result of the tax year does not depend only on the economic and financial performances of the company, but to a certain extent, on its methodological options in terms of assessment.''

The study aims at the identification of the determining factors of the performances of the entities in the real estate field and the setting up of a composite index of the companies' performances based on a sample made of 29 companies listed at the BVB Bucharest in the year 2019, by using one of the multidimensional data analysis techniques - the principal component analysis. The data regarding the companies in the sample were taken from the balance sheet and the profit and loss account. The source of the data is represented by the BVB Bucharest for the year 2019.

1.2. Setting up of the composite index of the companies' performances

The profitability of the assets is one of the main profitability indicators of a company and it measures the efficiency of assets use, from the point of view of the profit obtained. This indicator measures the profitability obtained by a company based on its assets. The higher the value of the indicator, the more profit generated by a certain level of assets.

One of the most important indicators is the profitability of the equities, also called ROE (return on equity). It is calculated as a ratio between the net profit and equities and it shows the efficiency with which the company invested the money of the stockholders.

This indicator measures the profitability obtained by a company based on its equity. A higher value of the indicator means that a small investment of the stockholders was transformed in a high profit.

A company is considered to have good performances if this profitability is significantly higher that the interest of a bank deposit. The investment in the stock of such a company has higher chances to bring good returns, provided it is not already overrated.

A company with a high level of debt-to-equity and a low level of financing from the money of the stockholders will generally have a higher profitability of equities than one which is financed more from the stockholders. The advantage is the obtaining of a higher profit on behalf of the same investment from the stockholders, but the disadvantage is a higher risk given by an increase dependence on debts.

Thus, the following activity (management) indicators were used – rotation of total assets, liquidity indicators, general liquidity ratio, solvency indicators – general solvency ratio and the general debt-to-equity ratio, as well as profitability indicators – net profit margin, ROA, ROE, gross return of portfolio. In addition, the weight of the real estate investments in the turnover as also introduced in the analysis.

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Table 1: *Description of the indicators used*

Used indicator	Calculation formula
DEBT-TO-EQUITY RATIO (FINANCIAL LEVER) (FL) Also known as "lever ratio", it expresses the total debt-to-equity (on short, average and long term) of the enterprise in relation to its equity. The result must be proper value, an improper value meaning an increased debt-to-equity level. A value that exceeds 2,33 expresses a very high debt-to-equity level; the company can be even in the state of imminent bankruptcy if the result exceeds the threshold of 2,33 by a few times.	FL = TD / E TD = total debt E = equity
NET PROFIT MARGIN (NPM) The ratio between the net profit of the year and the net turnover. It expresses the profitability of the entire activity, the profit taken into consideration being influenced by the profit tax, it represents one of the most common and important ratios calculated in the financial analysis. The ratio must not be used in the multi-period and multi-company comparative analysis because it is influenced by taxation.	NPM = NP / TO NP = net profit TO = turnover
PROFITABILITY RATE OF TOTAL ASSETS (ROA) It measures the net performance of the company's assets after the calculation of the profit tax. Since it is burdened by the taxation of the profit it must be analysed carefully in the multi-annual analyses. It can be compared with the ratio obtained by other companies. It must be under continuous growth.	ROA = (NP / TA) x 100 NP = net profit TA = total asset
FINANCIAL PROFITABILITY (OF EQUITIES) (ROE) It measures the net performance of the company's equities, those brought by investors, current profit and uncollected profit (as reserves and undistributed profit). It must cover the current interest rate. A too increased value of the indicator could also mean a low joint stock, an issue which must mobilise the stockholders to adjust the joint stock to the size of the business. The current interest for one-year bank deposits is used as reference threshold. The first and most simple financial investment is to keep your money in the bank and the following in an investment fund. But an investment in another business should exceed the earnings obtained by placing the money in a bank.	ROE = (NP / E) x 100 NP = net profit E = equity
ROTATION OF TOTAL ASSET (RTA) It expresses the number of (theoretical) replacements of the total asset with the turnover. A rotation lower than 2 raises question marks. The ratio must be compared with the average of the industry.	RAT = TO / TA TO = turnover TA = total asset
GLOBAL SOLVENCY (GS) It indicates the possibility of covering the total debt with assets. The ratio is also called "General solvency". In terms of value it is equal to the net accounting asset, respectively equities. The indicator must be improper and as close as possible to 2.	GS = (TA / TD) x 100 TA = total asset TD = total debt
Current liquidity (Current ratio) This ratio expresses circulating assets (assets estimated to be transformed in cash in less than a year) in relation to current debt (debt with a due date shorted than a year). A higher ratio indicates a higher level of liquidity, namely a higher capacity to fulfil short term obligations.	Circulating assets / Current debt (< 1 year)
The yield on gross loan portfolio It indicates the capacity of the gross loan portfolio to create financial incomes from interests, taxes and commissions.	The financial incomes in cash from the loan portfolio / average gross loan portfolio.

The weight of the real estate investments in the TO	Real estate investment / TO * 100

The activity indicators measure the efficiency of a company in performing daily tasks such as the collection of the debt and management of the inventory. These indicators reflect the long term efficiency of the capital and assets management.

The liquidity indicators focus on cash flows and have the purpose to measure the capacity of a company to fulfil its short term obligations. The liquidity measures how fast the assets of a company can be transformed in cash.

The solvency indicators measure the capacity of a company to fulfil its long term obligations.

The profitability indicators offer the analyst an image related to the capacity of the company to create profits from the invested capital and the values of the titles it releases.   It also shows how competitive a company is on the market and the quality of its management.

The descriptive analysis, the principal component analysis will be applied within the study for setting up the composite index of the companies performances and the cluster analysis will be applied in order to highlight the most important companies from the point of view of the financial performance.

The first step of the analysis is represented by the standardization of data through the fact that the various variables have different measurement units. The standardization operation of the values of a variable consists in the substitution of the values of each operation with a new value and it represents the ratio between the centred value of that operation and the standard deviation of that variable.

PCA is a useful technique for the transformation of a high number of variables from a data set in a smaller and more coherent set of uncorrelated (orthogonal) factors, the principal components. The principal components retrieve a great part from the variation of the original variable set. Hence, it is important to select the first principal components (factors), which keep a "greater" amount from the cumulated variation of the original data.

Each component is a linear combination of the initial variables. The components are ordered to that the first component retrieves the greatest amount possible of variation from the original variables.   The second component is completely uncorrelated with the first component and it retrieves a maximum of variation that was not retrieved by the first component.

Thus, the principal component analysis is a multi-varied statistics technique which has a purpose the extraction of a small number of latent factors responsible for the correlations between the original variables that retrieve as much as possible from the total information contained in the original data.

In order to select the component, Kaiser's criterion was used, implying the selection only of the principal improper components, because only the principal components with a higher variation than the one of the standardised original variables (null average and variation equal to 1) should be extracted, according to Kaiser's criterion (Armeanu et al., 2008).

In order to interpret the principal components in the terms of original indicators the Varimax technique was applied; it implies that the principal component be strongly correlated with some of the original variables and poorly correlated with the other ones.

The composite index will be determined by using the weights retrieved by each principal component in the total of the variation of all components and later on this index was scaled to take values between 0 and 100 in order to facilitate the interpretation of the results through the use of the option „rank cases" from SPSS.

Based on the values of this index, the financial performance of the companies during the year 2014 could be assessed. The value of 50 represents as average performance.

The cluster analysis is another tool in the development of the composite indicators in order to group information regarding the companies based on their resemblance in terms of various individual indicators. The analysis of the classification or the "cluster" analysis has as a purpose the grouping of the companies so that the entities that belong to the same class be as similar as possible to one another through the values of their variables (that is to be similar) while the classes built be as different as possible.

4. Empiric results

In order to treat the issue of the different measurement units of individual variables, the data have been standardised. The descriptive statistics of the financial performance indicators are shown in the following table:

Table 2: *Descriptive statistics of the used indicators*

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
rotatia_activului_total	29	.0234	1.5704	.579957	.4209271
rata_lichiditate_generala	29	.0314	17.9695	4.252757	4.6632985
rata_solvabilitate_generala	29	.0129	4.1011	.353538	.7395048
grad_indatorare_generala	29	-131.2547	133.3263	31.656332	47.5383075
Marja_profitului_net	29	-1.2624	.5251	.015612	.3323304
ROE	29	-.7580	.2880	.033869	.1752772
ROA	29	-.5059	.2248	.022269	.1196548
DIVY	28	.000	22.610	4.10429	5.094559
invest_imob_CA	29	.0019	28.6808	1.499727	5.5347631
Valid N (listwise)	28				

Source: Own projection

Table 2 presents descriptive statistics regarding the financial performance variables.
The proper value of the „lever rate" (0.3165) which expresses the total debt-to-equity level (on short, average and long term) of the entity in relation with the equity suggests a debt-to-equity level that is not so high. The net profit margin which expresses the profitability of the entire activity shows a quite low average profitability of the companies. The average value of ROA and ROE shows a quite reduced performance of the asset of the company.
The rate of general solvency shows a quite reduced average solvency. In terms of general liquidity, a higher ratio indicates a higher level of liquidity, namely a higher capacity to fulfil short term obligations.
Table 3 shows the dispersion explained by the initial solution, the components extracted and the rotated components. The „% of variance" column presents the amount of information retrieved by each principal component. In the „Initial Eigenvales" column we identify the four own improper values in descending order, precisely: λ_1 =2.81, λ_2 =1.86, λ_3 = 1.34, λ_4=1.18.

Thus, we can state that if we consider the existence of a single synthetic indicator (it explains 31,30% from the total of variation of the data and accept the existence of two synthetic indicators) we retrieve another 22,75% from the total variant and we obtain a total of 52,07% from the total variation of the variables. If we consider the existence of three principal components, they retrieve 67% from the variation of the original variables and the last principal component brings an extra 13,20% contribution from the variation of the original variables.
In order to interpret the principal components in terms of original variables, we will analyse the correlation coefficients calculated between the two principal components and the indicators. A principal component can be „explained" through that initial variable for which

the correlation coefficient is maximum but, at the same time the initial variable has small correlation coefficients with the other principal component. This way we recommend an „axis rotation" with the purpose of obtaining correlation coefficients as low as possible on one or two principal components. One of the most used rotations is known as the "Varimax technique".

Table 3 : *Own values on components and their weight*

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.819	31.326	31.326	2.819	31.326	31.326	2.155	23.947	23.947
2	1.868	20.750	52.077	1.868	20.750	52.077	1.820	20.219	44.167
3	1.343	14.921	66.998	1.343	14.921	66.998	1.653	18.367	62.534
4	1.188	13.204	80.202	1.188	13.204	80.202	1.590	17.668	80.202
5	.752	8.355	88.557						
6	.539	5.985	94.542						
7	.328	3.640	98.181						
8	.124	1.375	99.556						
9	.040	.444	100.000						

Extraction Method: Principal Component Analysis.

Source: Own projection

Table 4 presents the principal components that are strongly correlated with the original variables.

Table 4: *Empiric results of the rotated matrix of principal components*

Rotated Component Matrix[a]

	Component			
	1	2	3	4
Zscore(rotation_of_total_asset)	.067	.003	.424	.691
Zscore(general_liquidity_rate)	.238	-.137	-.928	.094
Zscore(general_solvency_ratio)	-.538	-.715	.317	.105
Zscore(general_debt-to-equity_level)	.048	.933	.149	.154
Zscore(Net_profit_margin)	.897	.071	-.018	.048
Zscore(ROA)	.774	.542	-.076	.085
Zscore(ROE)	.535	-.332	.681	.148
Zscore(DIVY)	.290	.103	-.070	.616
Zscore(invest_imob_CA)	.167	-.017	.124	-.811

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 17 iterations.

Source: Own projection

The first principal component has positive coefficients (loads) with the profit margin (0,89) and can be defined in terms of profitability indicator. The second principal component can be defined in terms of general debt-to-equity indicator (lever). The third principal component can be defined in terms of general liquidity indicator (0,928). The last principal component is mainly dominated by the weight of real estate investment in the turnover (-0.811).
Therefore we can state that the weight of the real estate investment represents an important factor in the financial performance of the companies.

Following the realization of the graphic representation, after the two principal components we observe a quite compact group of companies which seems to have a similar behaviour in relation to the new indicators, but also 5 companies separating from the group.

As a consequence of the analysis of the main groups of companies after the first two principal components – net profit margin and general debt-to-equity level – which retrieve more than 50% of the variation of the original variables (52.07%) we can distinguish the following groups of entities:

Figure 1: *Distribution of entities in the space of the two principal components*
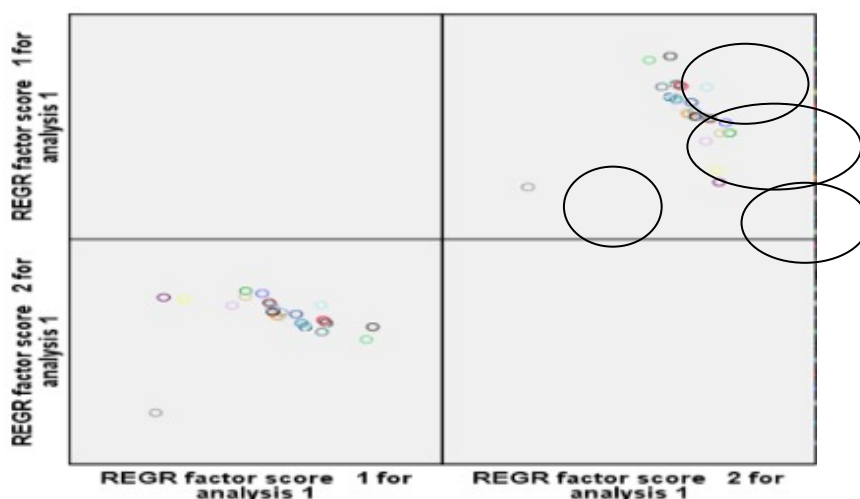
Source: Own projection

Class 1: Includes one company with poor scores on both principal components, the margin of the net profit and the general debt-to-equity level.

Class 2: Includes two companies which have a good score on the second component „general debt-to-equity level" and poor scores on the first component „net profit margin"

Class 3: Includes two companies which have good scores on the first component „net profit margin" and poor scores on the second component „general debt-to-equity level".

Class 4: Includes the companies that have an average score on both components.

The value of the Kaiser-Meyer-Olkin (KMO) statistics which measures the adequacy of the sample of financial performance indicators in the construction of a synthetic indicator and the results of the Bartlett test shows us the fact that the setting up of the composite index makes sense.

Table 5*: The results of the KMO and Bartelett tests*

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.449
Bartlett's Test of Sphericity	Approx. Chi-Square	120.484
	df	36
	Sig.	.000

Source: Own projection

2. Conclusions and limits

The main objective of the study was the identification of the determining factors of the performances of the companies from the real estate field and the setting up of a composite index of the performances of the companies based on a sample made of 29 companies listed at the BVB Bucharest in the year 2019.

For this, we applied multidimensional data analysis method – the principal components analysis and the cluster analysis, with the purpose of identifying the main latent variables with significant impact on the performances of the selected companies.

The results of the study showed that the net profit margin, the level of general debt-to-equity, general liquidity indicator and weight of the real estate investment in the turnover explains the financial performances of the companies listed at the BVB in the year 2019.

As a consequence of grouping the companies according to the first two components which retrieve approximately 52% from the variation of the original variable, two companies stood up with a better score on the component "general debt-to-equity level" two companies showed with good scores on the component "net profit margin".

As limitations of the research we mention that the information was analysed for only one year, namely 2019. As a restriction, we also remark the size of the sample consisting of 29 companies listed at the BVB.

As recommendations for future research we wish to set up a composite index of company performance for the assessment of the performances, but on a 4-year period, through the multi-varied principal component analysis specific to the panel type data and identification of the company groups according to their performances. Later on, we will follow the analysis of the impact of real estate investment on the performance of the companies based on the aggregate index obtained previously though the regression analysis specific to the panel type of data.

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TAX EVASION AND FINANCIAL FRAUD IN THE CURRENT DIGITAL CONTEXT

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Abstract: *Preventing and combating phenomenon of tax evasion is a present concern of national governments due to the magnitude this phenomenon represents and because of the increasingly sophisticated techniques used by the authors in carrying out tax frauds. Evolution of tax evasion phenomenon at international level has acquired a profound technological character due to the increasingly elaborate methods. Illegal behaviour has some specific features that could be recognized easily by artificial intelligence models. They use real data in order to derive characteristics that could be identified in due time so that tax avoidant behaviour be identified and prevented. The use of forecasting models like logistic regression, random forests or decision trees in order to model tax avoidant behaviour shows having a good predictive power. Also, the use of the neural networks allowed scientists to calculate probability of an individual taxpayer that would attempt to evade taxes or commit other types of financial frauds. Scientific literature shows an increasing interest in using neural networks to detect and predict fraudulent behaviour in the fields of tax avoidance and financial domain. Cybercrime, cryptocurrency and blockchain were created in order to facilitate payments and help owner in accumulating wealth. Current landscape of financial frauds shows a different picture. Intracommunity frauds are more and more diversified. European Union and International bodies act together to prevent and combat fraud. Could these new technologies possess a real threat to the financial security of our transactions or encourage fraudulent behaviour? This paper tries to find the answer to this question.*

Keywords: *tax evasion, financial fraud, blockchain, cryptocurrency, cybercrime.*

JEL Classification: *H26, C89.*

1. Introduction

Tax evasion is a global phenomenon that has complex implications in tax litigation as well as in any economic or social field. Seeing the legal perspective, an act or fact that aims to avoid paying taxes or to evade the payment of tax obligations is punished and so the material damage affecting state budget brings upon the legal liability of taxpayer. Tax Authority, through its coercive force, is empowered to collect public funds and in this sense, it is supported by the judicial bodies when identifying fraudulent behaviour that falls under criminal or fiscal law. Public measures entitled for preventing this type of violation of legal norms could be based on a deep and complete understanding of complex nature of human behaviour and its motivations and also of the mechanisms that underly fraud matrix in current digital context. This could help decision-makers build more efficient fiscal policies.

2. What is tax evasion?

The notion of tax evasion has multiple meanings, both legally and financially, economically or even socially. According to national criminal law, tax evasion offenses are regulated by Law no. 241 of July 15/ 2005 which aims to prevent and combat tax evasion. Tax evasion offenses are regulated at art. 9, from lit. (a) to lit. (g) from the same law. They have common

elements but also distinctive features. In economic reality, they often find themselves in competition either with each other or even with other crimes. Perhaps this is due to the fact that the tax fraudster will try to hide his intention to evade tax or even pursue it by multiple means. That is why investigating tax evasion crimes is a complex approach, which requires knowledge from various fields, both economic, financial, legal or technological.

Also, according to Tax Law no. 225/ 2007 and Tax Procedural Law no. 207/ 2005 which currently rule, tax evasion offenses have all in common same features regarding taxpayer conduct in obeying legal norms inside the specific mechanism for collecting and distributing public funds as well as their control and verification. Due to this regulation, any tax avoidant behaviour that is followed by a financial loss to the public budget revenues gets fined or punished.

3. Tax evasion in the digital context

Current digital context created a favourable environment for tax fraudsters into using technologies for collecting and manipulating information present in the virtual environment in order to develop increasingly complex systems for tax fraud mechanisms. Using artificial intelligence for detecting fraudulent behaviour together with robotization of tax audits and evaluating taxpayers' risk could increase the rate of discovering tax frauds (Faúndez-Ugalde et al., 2020). In the same time, using various forms of artificial intelligence like the blockchain technology could offer a potential leverage to Tax Authority in preventing and combating non-complaint behaviour. This in turn could shape the role of State and its institutions in dealing with tax evasion or avoidance, building a powerful architecture based on public needs and values (Ølnes et al., 2017).

Forecasting tax behaviour is a complex process taking into account the non-linear nature existing in real data. Tax avoidance as a social phenomenon is being evaluated and measured based on existing network characteristics in order to be able to build a decision model (Lismont J. et al., (2018). On the other hand, neuronal models have the capacity to analyse and process large quantities of data better than humans do (Roung-Shiunn Wu et al., (2012). MLP model proves higher accuracy in prediction regarding financial or behavioural data (Pérez López C. et al., 2019). One study showed that individuals' behaviour regarding paying taxes is influenced by external and internal factors like audits, penalties, risk aversion by using multi-agent systems and Markov reinforced learning networks (Fayçal and Mohamed, 2018), (Goumagias et al., 2018).

There are studies that reveal the need to adapting neuronal models used according to the type of fraud being analysed so a hybrid intelligent model was tested on tax returns and other financial variables to detect corporate tax evasion by combining MLP, SVM, logistic regression, concluding that MLP outperformed other techniques in the field of tax fraud (Rahimikia et al., 2017), (Zakaryazad and Duman, 2016), (Sharma, 2012), (Ryman-Tubb et al., 2018). In this sense, recent research shows similar results by testing MLP models versus other AI algorithms (Bishop, 2006). In another study, using hybrid machine learning tools for fraud detection, authors make a comprehensive comparison on various detection tools in the literature analysed having found that each specific type of fraud, either financial or any kind, is better identified with a specific type of tool (Hosaka T., 2019).

4. Blockchain and tax evasion in current virtual environment

4.1. What is blockchain?
Blockchain is an algorithm that divides information into several segments called blocks, which it links in a chain, more specifically, is a distributed database. Each block has the cryptographic key of the previous block in its composition, with the exception of the first block

in the chain. Unlike IoT, which uses a centralized approach, blockchain records and stores transactions on a decentralised peer-to-peer network.

4.2. Cryptocurrency trading mechanism

Cryptocurrencies are generated with the signal that a payer shall send a transaction to a beneficiary. This transaction consists of the amount in cryptocurrencies that you want to be transferred and a smart-contracts (Xu, 2016). Smart contracts are algorithms that run when the "contractual clauses" are met, so that the process is as automated and time efficient as possible (Xu, 2016). Smart-contracts is distributed and analysed by all devices on the blockchain network (Xu, 2016). If the "clauses" are met, the devices on the network authorize the transaction and the smart-contract will be saved in a block (Xu, 2016). The devices in the blockchain will distribute the smart-contract, and the amount in cryptocurrencies will be transferred to the recipient (Luke Conway, 2020: Blockchain explained). In conclusion, the blockchain is distributed between all the network devices, updated by them, but it cannot be controlled by anyone.

4.3. Blockchain uses in detecting fraudulent behaviour

The integration of blockchain technology brings many challenges, but also benefits, both to the public and private systems. Blockchain technology can provide currently untapped benefits in the area of e-governance. The main public processes in which blockchain technology could bring significant advantages are: health, evidence of state assets, voting, retention of final judgments handed down by courts, criminal records (tax, judicial), property rights but especially in the efficiency of processes carried out by tax administrations (Ølnes et al., 2017). However, it should be noted that governments need to test on a smaller scale the transformation of processes through blockchain, in order to avoid serious and costly errors and to understand in depth the phenomena that have arisen and to be perfected (Ølnes et al., 2017). Currently, blockchain technology is intended to be integrated into several areas of activity, and in the economic field, this technology will be able to make a significant contribution. At the moment, companies want an evolution, a refinement of blockchain technology and evaluate the benefits of using blockchain in the future, including: lower data storage costs, more accurate records and facilitating the long-term control process (Hima, no date).

4.3.1. Blockchain and tax evasion

The resources of the public budget are made up of taxes, taxes and contributions, hence the financing of public expenditure (public lighting, works, investments). In order for the state to obtain a higher level of public resources, tax increases may occur, leading to increased tax pressure on the population and thus attempts at tax fraud (Faccia and Mosteanu, 2019b). A main task of the tax administration is to identify fraudulent behaviour, but also to provide advice and assistance to the taxpayer in such a way as to reduce and prevent the risk of non-payment of taxes to the public budget. Triple-entry acounting isn't as far as we'd ever imagine. Accounting principles and rules can be integrated into smart-contract, with transactions verified and validated by all devices on the blockchain network, thus enabling errors to be avoided, such as duplicate payments (Faccia and Mosteanu, 2019a). Today, financial and accounting data of the companies are stored both in the company and at the fiscal administration, which implies a waste of resources. In order to achieve greater transparency and to facilitate the access of the tax administration to carry out control procedures, it is necessary to customise the blockchain algorithm so as to allow permanent and unrestricted access by the tax administration and other public institutions in the investigation and sanctioning of tax fraud and criminal offences arising from such fraud (Hima, no date).

The blockchain mechanism can protect economic operators from the serious effects of tax fraud committed by mistake, providing a high degree of security through data encryption and transparency to tax administrations. The tax authorities will also be able to give more confidence to fiscal declarations as they will only be entered into the blockchain after they are verified and validated by all devices in the system, and if a declaration is to be amended, the modified block will need to be revalidated including all the blocks after the modified one (Hima, no date). Integration must be achieved gradually, first through smart-contracts, which could take the place of physical contracts, the processing of clauses and terms and conditions so that their verification and validation is as quickly as possible, but we must not lose sight of the fact that, until a fully functioning blockchain system is in line with the fiscal and economic-financial requirements, some possible high costs will have to be borne (Hima, no date).

Tax administrations collect large sets of high-speed information and an equally large variety, which is called Big Data. Big Data analysis includes data processing, information extraction, analysis of data whith neural models and networks (Faúndez-Ugalde et al., 2020). The OECD supports and urges the tax administrations of the world's states to cooperate at a higher level by facilitating access to information exchange in order to increase tax compliance, overall transparency and reduce tax fraud (Faúndez-Ugalde et al., 2020). The challenge of the authorities will, in fact, be not to integrate blockchain technology, but to harmonise the new technology between the involved structures of the state and economic agents and to protect the confidential data of each economic operator from any other foreign interaction that could endanger the data (Hima, no date). This is cost-effective for the state because human error is eliminated by automating processes, and transparency can live high levels, thus helping to fight tax evasion and fraud (Hima, no date).

4.4. Blockchain and money laundering

The crime of money laundering is part of economic crime, which is a complex and cumbersome process. Money laundering is regulated in Romania by Law no. 219/ 2019 on preventing and combating money laundering and financing terrorism and is framed as a criminal offence, punishable by imprisonment. Money laundering consists of converting money resulting from illegalities through different channels in order to lose illicit origin or any information that might highlight origin. Usually, this money ends up in the global economy, thus affecting its performance, but this step of the money laundering circuit is the most complicated because from here the money can be tracked (Albrecht et al., 2019).

Directive 2005/60/EC of the European Parliament and of the Council indicates the facts to be considered as money laundering offences. Although the European Union urges the recognition of money laundering as a criminal offence, some Member States are postponing the change in legislation to this effect (Leția, 2014).

Criminal groups manage to survive on money from illicit activities. These activities include: thefts, murders, prostitution, drug sales, organ trafficking, protection fees. Currently, moving cash or through banks is a rather difficult process, involving many risks. For this reason, cryptocurrencies are an easier way to trade for criminal groups.

Many criminal and criminal groups use cryptocurrencies on the black market because some are very difficult to track and others almost impossible. Cryptocurrencies are of major importance in the money laundering process due to the anonymity enjoyed by users. Criminals will make the most of all the benefits of cryptocurrencies, especially as they will be able to easily by pass investigations by the authorities.

Bitcoin can be used in money laundering and financing terrorism because it has three key features: the user is not obliged to publish his real identity because he owns a wallet with a pseudo-identity, it is a peer-to-peer platform (excludes banking intermediary and legislative regulations) and transactions are instantaneous and fee-free (Fletcher et al., 2021). The wallet (virtual wallet) is, in fact, the correspondent of the beneficiary's bank account through

which it can trade cryptocurrencies. Unlike fiat currencies (government-issued currencies, but no gold coverage, like dollar, euro (Chen, J. and Anderson, S., 2021: Fiat Money), cryptocurrencies are very easy to transfer from one jurisdiction to another, and for this process only an internet connection is needed (Albrecht et al., 2019).

We can include in cybercrime facts like: hacking and malware attacks, credit card fraud (Tiwari et al., 2020). Turner and Irwin (2018) have been trying to uncover the people behind the bitcoin transactions. Although they were able to track the transaction throughout the blockchain, they were stuck to the fictitious identity of the wallets used in the transaction (Tiwari et al., 2020).

Limitations of blockchain use are found on several levels: environmental impact through the rapid wear and end of video cards and processors that are wasted with a different collection treatment, high electricity consumption (Hima, no date). Also, other risks to which we are subjected through blockchain are: the 51% attack, system hacking, identity theft (Xu, 2016). The 51% attack involves intervention with a higher computing power in the calculations for cryptocurrency mining, so all the benefit resulting from the calculations will be charged by a single user. (Xu, 2016). System hacking involves intervening and taking control of the blockchain system (Xu, 2016). Identity theft can be achieved even by stealing some equipment that makes up the blockchain system.

5. Financial frauds in European Union

Fraudulent intelligence is a dangerous weapon in society. European Union's activity is hampered by the occurrence of fraudulent behaviour, which refers to the violation of the provisions of national Tax Law under Directive 2006/112/EC. The main reasons behind fraudulent behaviour are highlighted in the Triangle of Fraud namely: opportunity, justification, financial pressure or motivation (Cendrowski et al., 2007). The intra-community offender pursues illegal acts in order to obtaining sums of money from the national or European budget (Voicu et al., 2015). In this fraud matrix another element is Triangle of Trust by Dupont and Karpoff (2020) and indicates a perspective of disciplining inappropriate behavior and stimulates creation of trust in economic transactions. The last element is the Leffler and Klein Model on ways to detecting fraud (Klein and Leffler, 1981).

The mechanism of intra-Community fraud is emphasized on modalities of total or partial evasion of payment of some obligations from state budget or their illegal reimbursement. Understanding criminal behaviour of tax evasion in EU and VAT fraud consists in analysing the mechanism of tax fraud. A short typology of frauds at EU level is MTIC followed by illegal VAT deduction or cross-invoicing, fictitious intra-Community delivery, cash and carry fraud and imports using customs procedure (Fisher, 2011).

Fraudulent behaviour also makes its presence felt at the European funding level, committed by obtaining or using European funds and or national public funds for unjustified purposes of a project (UE, 2017). Semeta and Kessler (2011) agree that a main fraudulent thinking of an individual is to influence the procedure of purchasing goods. The fraudulent mechanism based on public funds is related to corruption and this is considered an abuse of power for personal gain (ECA, 2019a). Main frauds regarding financing of European funds are: falsification of the financing request, over-invoicing of project costs, filling in with false data of the non-reimbursable financing applications and others. The financing of a European project can be done by falsifying specific documents, such as: the value indicated in the request for reimbursement is higher than the real value of the good, the eligibility of payment through a forged document or invoice and the allocation of funds and their use for other purposes that have nothing to do with the reason for their allocation (Smolej, 2015). During the 2007-2013 programming period, Member States' cohesion fund fraud was reported in percentages and the highest were in Slovakia 2.13%, Romania 1.10% and Czech Republic

0.88% and the lowest in France, Belgium and Luxembourg below 0.05% (ECA, 2019b). Recovery rate of amounts resulting from financial fraud in 2018 were found in: Slovenia 100%, Sweden 97%, Czech Republic 95%, Finland 93%, Hungary 91%, France 89% and Austria 84%. (UE, 2019). OLAF as an EU representative of combating fraud has entered into a cooperation agreement with the World Bank's Integration Department and with the authorities of the Member States to control, monitor, audit, investigate financial crime and the use of funds received (Vlogaert, 2006).

6. In conclusion

Current context of technological development brought increasingly sophisticated techniques that are used by fraudsters in carrying out tax frauds. Preventing and combating fraudulent tax behaviour is a present concern of national governments all across globe and this in turn could be more efficiently tackled with the help of AI algorithms. The usefulness of computational intelligence in detecting the risk of tax fraud refers to finding an empirical model that can be tested and validated to be able to predict fraudulent behaviour. Cybercrime is a form of criminal activity. Only a computer, network and human interface is needed to enable criminals to steal money. Also, governments and the investigative bodies should keep up with the technological development of tax evasion phenomenon in order to control it and prevent and combat fraud. The European Commission is responsible and makes the necessary checks on external expenditure. OLAF has set up a network that provides assistance to Member States and is called the Anti-Fraud Information System. The establishment of this institution has improved both the anti-fraud management authorities and the Member States. The European Union and the Member States have a common responsibility and both are fighting to combat fraud, irregularities, corruption, tax evasion and any other crime that does not comply with compliant legislation. Regardless of the type, nature or form of the existing fraud, it must be prevented, detected and the correct measures taken.

Notations

Abbreviations
AI - artificial intelligence
MLP – multilayer perceptron
SVM – support vector machines
IoT – Internet of Things
BC – blockchain
EU – European Union
OLAF - European Anti-Fraud Office
MTIC - Missing Trader Intra Community Fraud
OECD - Organisation for Economic Co-operation and Development

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CORRELATIONS BETWEEN FINANCIAL INDICATORS OF COMPANIES AND SUSTAINABLE DEVELOPMENT INDICATORS

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Abstract: _One of the main objectives of sustainable development is to improve living standards and obtain a friendlier business environment, by increasing their competitiveness and performance and the main goal of companies are to achieve a productive activity that ensures their short-term success, but also to pay attention to long-term survival. This analysis was performed to assess the influence of financial indicators of companies and their contribution on the sustainable development of the North-West region of Romania. The research follows the evolution of sustainable development and financial indicators of the sample of 37 companies listed on the BSE, with data collected from 2008-2019, covering the following sectors according to their BSE classification: manufacturing, trade, hotels, construction. In this paper is used both qualitative and quantitative research methods. Among the qualitative research methods used it can be mentioned: observation, comparison and analysis of data. The econometric analysis is based on the estimation of a panel data regression technique and the decision between the random effects model and the fixed effects model was based on the Hausman test. The microeconomic indicators used to analyse the connection with the indicators of sustainable development of the North-West region of Romania are turnover, net profit and the average number of employees used as independent variables and the indicators selected based on information provided by the National Institute of Statistics for the North-West region, called Territorial Sustainable Development Indicators, are the following: Regional Gross Domestic Product, GDP per inhabitant, economically active population, the employment rate of the working age population, the job vacancy rate and the unemployment rate used as dependent variables. The results of the correlation analysis of the parameters showed a weak, insignificant influence between the financial indicators and the sustainable development indicators, the observed data do not allow the identification of a valid linear model._

1.Introduction

In a world in constant motion and transformation, influenced by economic and financial crises, technologies, ideas, businesses, people and even epidemic diseases cross borders with unprecedented speed and intensity, the main goal of companies being to achieve a productive activity that ensure their short-term success, but also pay attention to long-term survival.
The terms sustainable development, sustainability, social responsibility or corporate responsibility are used more and more and are often treated as synonyms. Corporate social responsibility improves the performance of a company's sustainable development through social responsibility activities (Simionescu, 2018).

The key players in sustainable development are local authorities, the business environment through the contributions of all sectors and companies, civil society, but also other stakeholders in the implementation of sustainable development goals.

One of the main objectives of sustainable development is to improve living standards and obtain a friendlier business environment, both for Romanian enterprises in the region and for foreign companies, by increasing their competitiveness and performance.

This analysis was performed in order to assess the influence of financial indicators of companies and their contribution on the sustainable development of the North-West region of Romania. The main indicators of sustainable development, called Territorial Sustainable Development Indicators, are influenced by a variety of factors, the impact of which can be estimated using appropriate models.

2. Literature review

Thi Thu (2020) and his collaborators analysed the relationship between a firm's sustainable development practices and its financial performance, using data from the application of questionnaires to 389 vietnamese textile companies. The research started from three hypotheses, namely: the sustainable development practices of a company will have a positive effect on its financial performance; customer loyalty, employee satisfaction and corporate reputation mediate the positive relationship between sustainable development practices and financial performance; Entrepreneurship has a positive effect on the relationship between sustainable development practices and financial performance. The results show that sustainable development practices positively affect financial performance directly and indirectly through customer loyalty, employee satisfaction and corporate reputation.

Another author who analyses the role and influence of economic development in the region from the perspective of small enterprises is Zvarych (2017). The results of his research established that the functioning of small enterprises significantly influences the sectorial structure of the territory and the level of employment, while the influence on the infrastructure and the ecological status of the region is not significant. The factors that determine the level of efficiency of the operation of small enterprises and also have a significant influence on the level of economic development of the region are: the number of small enterprises; turnover of products sold; the number of employees and the proportion of employees in small enterprises. Based on the research carried out, the author proposes conceptual principles, in order to assess the influence of small businesses on the economic development of the region, which has been the basis for scientific research on the formation of an effective model for sustainable development of the region.

The analysis of the influence of GDP on other microeconomic or macroeconomic variables, but also of them on the GDP has always been a widely debated topic by specialists. For example, Anghelache (2013; 2017) has a series of papers on macroeconomic models used in the structural analysis of GDP. In 2013, it analyzes retail turnover and its influence on GDP and concluded that although total turnover has a positive influence on GDP, taken separately from retail turnover in companies owned mainly by state and turnover in retail in mainly private sector companies influence GDP in a negative way, noting that in the model considered, the influence of leisure, as an image of the factors that were not included in the model, it is significant and causes a significant decrease in the value of GDP. In 2017, it tests again the influence of the turnover of the companies with retail activity on GDP, reaching the conclusion that the turnover coming from the companies with private capital influences the GDP in a positive way, and those with full state capital, in a negative sense.

3.Data and methodology

The study sample consists of 37 companies from the North-West region, using as a selection criterion their listing on the Bucharest Stock Exchange and the most relevant size criteria reported each year in the financial statements: total assets, net turnover and the average number of employees.

In order to analyse the connection between the variables, we used the information provided by the website of the National Institute of Statistics and the Bucharest Stock Exchange, and at the level of each company, we extracted the financial reports for the period 2008–2019.

The financial - accounting indicators used to assess the contribution to the sustainable development of the North-West region of Romania are: turnover, net profit and average number of employees, and the indicators selected based on information provided by the National Institute of Statistics for the North-West region, on sustainable development at territorial level are: Gross Domestic Product at regional level, GDP/inhabitant, economically active population, employment rate of the working age population, vacancy rate and unemployment rate.

The econometric analysis is based on the estimation of a panel-type data regression, based on 444 observations; the number of observations represents the number of listed companies that made up the sample (37) multiplied by the years of study (12). The regression model was used to establish the influence that companies' performance indicators have on the Territorial Sustainable Development Indicators of the North-West Region of Romania.

A regression on panel data differs from a simple cross-sectional regression or one that uses time series in that it has a double index on its variables.

$y_{it} = \alpha_i + x_{it} \times \beta + u_{it}$, where $i = 1,\ldots, 37$; $t = 1,\ldots, 12$; y is the dependent, endogenous, explained variable; x is the independent, exogenous, explanatory variable; α is called the free term (intercept), β is the regression coefficient, it shows how many units the variable y changes, when the variable x increases by one unit; u_{it} is a random error, a residual value. The index i shows the cross-sectional dimension and the index t on the temporal one. Most applications use a model with a single error component, of the form: $u_{it} = \alpha_i + \varepsilon_{it}$.

There are several types of data panel templates. The main distinction is between fixed effects (FE) and random effects (RE) models. In fixed effect models, the α_i error component can be correlated with x_{it} regressors, but the hypothesis that there is no correlation between x_{it} and the ε_{it} random component is still maintained. In RE models, it is assumed that the error α_i is totally random, a stronger hypothesis, which implies its non-correlation with the regressors (Aparaschivei, 2012).

Fixed effects occur when the characteristics are approximately constant between observations and over time (any change that occurs is more or less the same over time). Random effects occur when variables are unpredictable, random (Sabău-Popa, 2020).

Following the estimation of the parameters of the simple regression model, we take into account the following categories of information:

1. Estimated parameters = Coefficient.
2. Significance threshold - $\alpha \varepsilon\ [0,1]$ = Prob.
3. Determination ratio - R^2 = R-squared.
4. Statistics F used to determine the link and the intensity of the link between the variables, at the level of the total population. The Student test (t-statistics) is used to test the parameters of the equation.
5. Corresponding significance threshold = Prob (F-statistic). If the value is greater than 0.05 (0.01), then we reject the null hypothesis. Under these conditions we can say that the explanatory variable is correctly introduced in the regression model (Andrei et all., 2018).

Testing the intensity of the link at the level of the total population is performed based on the test F. Statistical hypotheses: H_0: the correlation ratio does not differ significantly from 0. The independent variable does not have a significant influence on the dependent variable. R-squared is not significant in the total population; H_1: the correlation ratio differs significantly from 0. The independent variable has a significant influence on the dependent variable. R-squared is statistically significant in the total population;

From the point of view of the correlation ratio, if Prob (F-statistic) is below the significance threshold of 5%, we reject hypothesis H_0 and admit as true hypothesis H_1. The interpretation of the values of p is done as follows: if $p < 0.05$, the statistical link is significant, if $p > 0.05$, the statistical link is insignificant.

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4.Empirical results

Among the sustainable development indicators analysed, we first considered the GDP, for which we followed the evolution after the financial crisis from 2008 to 2019. The use of statistical tests implemented using the Eviews software for the GDP data series, in the North-West region, provided the following information:
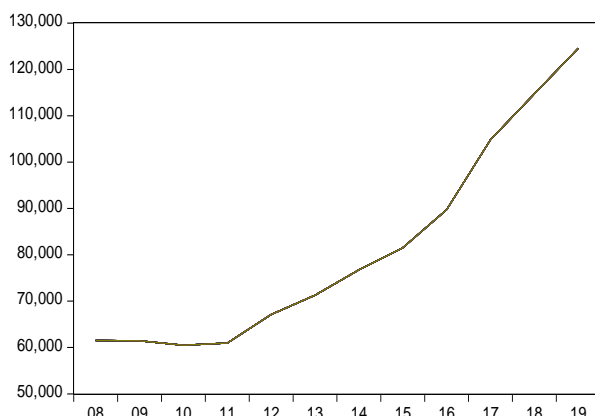
Figure 1: Evolution of GDP in the Northwest in the period 2008-2019
Source: Data processed using the Eviews program

In the period 2008-2019, the GDP at regional level registered an increase of 102.38%, this being achieved in leaps, with positive evolutions, with an average annual growth of 6.74%. We can observe a slight decrease between 2009-2010, the region being affected by the global economic crisis, the decrease being 0.13% in 2009 and 1.6% in 2010. The evolution of GDP in the period 2011-2012, was slightly increasing, in the context in which domestically and internationally the crisis has continued to affect economic growth.
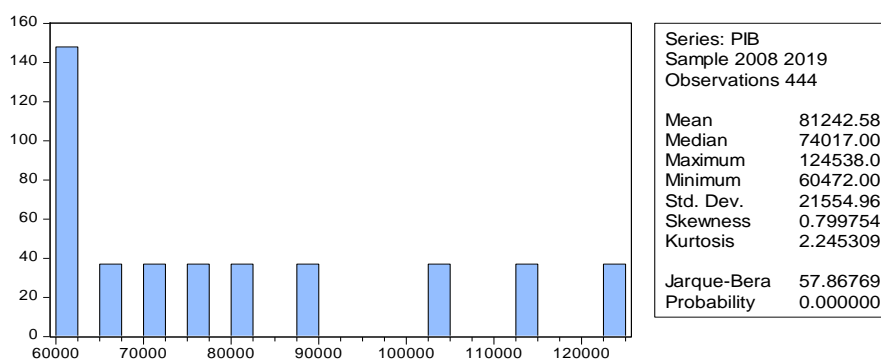
Figure 2: Descriptive statistics on GDP in the Northwest during 2008-2019
Source: Data processed using the Eviews program

The average value of the GDP for the period 2008-2019 is 81,242.58 million lei, with a variation between a minimum of 60,472 million lei and a maximum of 124,538 million lei. The distribution of the values of GDP for the considered interval is not a perfectly symmetrical one (the value of the skewness test is non-zero).

In the literature, a fixed effects model or a random effects model is used to estimate a panel data model. The fixed effects model shows the relationship between the exogenous variable and the endogenous variable, in which each individual component has a significant role in

predicting the outcome in the system. In the case of the random effects model, the variation between entities is assumed to be random and uncorrelated with the exogenous variables included in the model. A first step in the analysis of panel data involves whether or not the differences between the fixed-effect parameter estimator and the random-effect parameter estimator are significant, and the choice of a single method, ie the most appropriate. To determine which model is more suitable for the data series, we used the Hausman test (1978). According to the Hausman test, if the null hypothesis is true, the random effects estimator is effective, and the difference between the estimators must be close to zero. If the null hypothesis is rejected, the fixed effects are tested. (Bădulescu et all., 2018).

According to the results presented in Table 1, the random effects model predominates in most cases, the null hypothesis of the Hausman test is accepted when the probability value> 0.05.

The first three selected indicators of sustainable development: GDP at regional level, GDP/inhabitant and the economically active population were correlated with the indicators of companies at their absolute value, while for the employment rate of the working age population, the vacancy rate and the unemployment rate were used standardized values of the variables, given that the measurement scales are different and the interpretation of the coefficients can distort the image of the importance of independent variables in the model. The analyzed period was 12 years (2008-2019), except for GDP/inhabitant for which the period was 6 years (2012-2017) according to the existing data on the INSSE website. Going through the steps of generating the regression equation, we arrived at the following results:

Table 1: Panel data analysis - company indicators (exogenous variables) and sustainable development indicators, in absolute values

IDDT	Endogenous variable		
	GDP at regional level	*GDP/inhabitant*	*The economically active population*
The influence of Turnover			
Hausman test Chi-Sq. Statistic [Prob.]	0.014064 [0.9056]	0.316538 [0.5737]	0.062419 [0.8027]
Model	Random effects	Random effects	Random effects
Intercept [Prob.]	81296.32 [0.0000]	31701.58 [0.0000]	1209.596 [0.0000]
Turnover [Prob.]	-1.28E-06 [0.9332]	1.10E-06 [0.8770]	5.05E-09 [0.8598]
R-squared	0.000017	0.000130	0.000077
F-statistic [Prob.]	0.007657 [0.930311]	0.028638 [0.865772]	0.033980 [0.853835]
Number of observations	444	222	444
The influence of Net Profit			
Hausman test Chi-Sq. Statistic [Prob.]	0.050468 [0.8223]	0.013647 [0.9070]	0.153965 [0.6948]
Model	Random effects	Random effects	Random effects
Intercept [Prob.]	81197.39 [0.0000]	31732.16 [0.0000]	1209.618[0.0000]
Net Profit [Prob.]	6.94E-05 [0.2383]	6.98E-06 [0.6951]	7.54E-08 **[0.0397]**
R-squared	0.003422	0.000836	0.010364
F-statistic [Prob.]	1.517743 [0.218616]	0.184155 [0.668246]	4.629067 **[0.031976]**
Number of observations	444	222	444
The influence of Average number of employees			
Hausman test Chi-Sq. Statistic [Prob.]	18.988642 [0.0000]	6.314183 [0.0120]	0.172348 [0.6780]
Model	Fixed effects	Fixed effects	Random effects
Intercept [Prob.]	88457.19 [0.0000]	33967.7 [0.0000]	1209.810 [0.0000]

Average number of employees [Prob.]	-32.03957 **[0.0000]**	-11.05729 **[0.0073]**	-0.000637 [0.7742]
R-squared	0.064663	0.038517	0.000203
F-statistic [Prob.]	0.758594 [0.847361]	0.199220 [1.000000]	0.089677 [0.764729]
Number of observations	444	222	444

Source: Data processed using the Eviews program

In order to interpret how the indicators of companies influence the *regional GDP* (dependent variable), we follow the probability of the coefficients of independent variables. The results show that the dependent variable is positively associated only with the net profit, but of the three indicators analyzed, only the probability of the coefficient of the average number of employees is below the 5% threshold, which means that at a 1% increase in the number of employees, the product GDP decreases by 32.03%. However, given the F test and Prob (F-statistic) which is above the 5% significance threshold, it can be said that the three models that have the regional GDP as a dependent variable are not significantly related and cannot be used for the analysis of the dependence between the analyzed variables, and R-Squared is very small.

As in the case of the regional GDP, for the dependent variable *GDP/inhabitant*, the probability of the coefficient of the average number of employees is below the threshold of 5%, and because the regression model has free term and the value of R-square is 0.038517, we can say that 3.85% of the dispersion of the data series of the GDP/inhabitant variable is explained by the variable average number of employees, so that at a 1% increase in the number of employees, the GDP/inhabitant decreases by 11,05%. But the influence of company indicators is insignificant given that the result of Prob (F-statistic) is above the significance threshold of 5% (the value 1 in the case of the average number of employees indicates that there is no link between variables) and R-Squared has a very small value.

For the indicator *The economically active population* (dependent variable), Prob (F-statistic) is above the significance threshold of 5% in the case of turnover and average number of employees, so it can be said that the intensity of the connection is very weak and R-Squared is very small. Even if in the case of net profit, Prob (F-statistic) is below the significance threshold of 5% (0.031976), R-Squared is very small: only 1.04% of the variation of the dependent variable is explained by the model. Analyzing the coefficient of the independent variable, we can say that it is positively associated, which indicates that an increase in net profit by 1%, the active population increases, in this case by a very small percentage, by 0.00000754%.

Table 2: Analysis of panel data - company indicators (exogenous variables) and sustainable development indicators (dependent variables), in relative, standardized values

IDDT	Endogenous variable		
	The employment rate of the working age population	*The vacancy rate*	*The unemployment rate*
The influence of Turnover			
Hausman test Chi-Sq. Statistic [Prob.]	0.021363 [0.8838]	0.266096 [0.6060]	0.090200 [0.7639]
Model	Random effects	Random effects	Random effects
Intercept [Prob.]	3.48E-14 [1.0000]	-1.22E-13 [1.0000]	-1.67E-10 [1.0000]
Turnover [Prob.]	-0.005130 [0.9177]	0.018096 [0.7154]	-0.010539 [0.8319]
R-squared	0.000026	0.000327	0.000111
F-statistic [Prob.]	0.011631 [0.914167]	0.144784 [0.703753]	0.049100 [0.824740]
Number of observations	444	444	444
The influence of Net Profit			

Hausman test Chi-Sq. Statistic [Prob.]	0.125587 [0.7231]	0.185175 [0.6670]	0.156304 [0.6926]
Model	Random effects	Random effects	Random effects
Intercept [Prob.]	-2.07E-13 [1.0000]	-2.51E-13 [1.0000]	-1.66E-10 [1.0000]
Net Profit [Prob.]	0.092037 [0.0632]	0.111527 **[0.0242]**	-0.102568 **[0.0383]**
R-squared	0.008471	0.012438	0.010520
F-statistic [Prob.]	**3.776122 [0.052624]**	5.566974 **[0.018736]**	4.699354 **[0.030707]**
Number of observations	444	444	444
The influence of Average number of employees			
Hausman test Chi-Sq. Statistic [Prob.]	18.388086 [0.0000]	5.020292 [0.0251]	10.065775 [0.0015]
Model	Fixed effects	Fixed effects	Fixed effects
Intercept [Prob.]	8.93E-12 [1.0000]	4.77E-12 [1.0000]	-1.73E-10 [1.0000]
Average number of employees [Prob.]	-0.440424 **[0.0000]**	-0.235562 **[0.0067]**	0.330584 **[0.0001]**
R-squared	0.062746	0.017950	0.035351
F-statistic [Prob.]	0.734602 [0.874300]	0.200560 [1.000000]	0.402127 [0.999411]
Number of observations	444	444	444

Regarding the *Employment rate of the working age population*, we find that turnover is not significantly correlated with the dependent variable. Even if in the case of net profit, Prob (F-statistic) is below the significance threshold of 10% (0.052624), R-Squared is very small: only 0.8% of the variation of the dependent variable is explained by the model. Since the probability = 0.00, in relation to the average number of employees and the employment rate of the working age population, the null hypothesis is rejected and it is accepted that the regression model is significant in the total population, but Prob (F-statistic) is above the threshold of significance of 5%, and R-Squared has a very small value.

In the case of the *Job Vacancy Rate*, the above results highlight the following: companies' indicators are not significantly correlated in terms of turnover and average number of employees, although the probability of the variable coefficient of the average number of employees is below the significance threshold of 5%, but Prob for F-statistic is above the 5% threshold, the value 1 in this case indicates that there is no connection between the variables. In the case of the independent variable net profit, the model is correctly specified, because the p-value for F-statistic is 0.018736, below the 5% threshold, and the probability of the variable coefficient is 0.0242. Thus we can say that the vacancy rate is positively associated with net profit, which indicates that the change with a standard deviation of the value of net profit variable, produces a change by 0.11% standard deviation of the value of the dependent variable the vacancy rate..

Regarding *The unemployment rate*, there is a very weak link intensity because the probability of F-statistic in the case of turnover has a value higher than 0.05. The same information is obtained at the probability of F-statistic corresponding to the variable of the average number of employees, but the probability corresponding to the coefficient of the variable of the average number of employees is below the threshold of 5%, but the value of R-square is very small, that only 3.54% of the dispersion of the data series of the dependent variable is explained by the variable of the average number of employees. But in the case of the independent variable, the net profit, the model is correctly specified, because the p-value for F-statistic is 0.030707, below the 5% threshold and the probability of the variable coefficient is 0.0383, however with a very small R-square of only 1.05 %. The net profit coefficient shows an insignificant inverse linear link, which assumes that the change with a standard deviation of the value of the variable of net profit, produces a change by 0.1% standard deviation of the value of variable depending on the unemployment rate.

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5.Conclusions

The present research analyzed the relationship between the main macroeconomic indicators of territorial sustainable development in the North-West region of Romania and the performance indicators of companies and their contribution to the sustainable development of the area, using the financial data for the period 2008-2019, in the case of 37 companies in the North-West Region of Romania, listed on the Bucharest Stock Exchange. A panel model was used, the decision between the random effects model and the fixed effects model was based on the Hausman test.

Given that in most of the analyzed models, at the level of the total population, the parameters of the regression equation are not verified, respectively the correlation ratio and not all coefficients are significant, it can be stated that there is no relationship between explanatory and dependent variables, the resulting models being characterized by insignificant values of the R-square tests, and the value close to 0 denotes a very weak bond intensity. At the moment, no predictions have been made. Only a relationship between these indicators was sought. The analysis suggests the vulnerability of companies in northwestern Romania.

The limits of research, which consist in modeling a small number of variables, the existence of other factors that could influence the results, open new research directions that can be extended to cover longer periods, other econometric techniques and financial indicators of companies, to be able to appreciated the contribution of companies to the sustainable development of the area.

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SOCIAL RESPONSIBILITY IN FOOD INDUSTRY

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Abstract: *There are many different front-of-pack nutrition labels and there is not yet established a convergence. Governments and manufacturers try to provide more nutritional information on food labels. The analysis covered the period between 1980 and 2021. This study increases the attention of all stakeholders involved in the front-of-pack nutrition labelling debate. In this regard is relevant to present the advantages and disadvantages, the similarities and the differences of front-of-pack nutrition labelling, because each one is unique, so it is hard to compare them by using the same criteria. The paper brings into the spotlights different policies from different countries that aim to educate the consumers about the content of food, the case of front-of-pack food labeling, that represents a social responsibility issue, especially for health and obesity prevention, noncommunicable diseases, cardiovascular diseases, cancer, diabetes, due to the important role played. Our results show that there are key items, in terms of social responsibility, companies should take into account when planning their strategies and may help also the investors in food manufacturing companies with an increased interest in social information to request and understand the importance of the front-of-pack nutrition labelling of companies they want to invest in. Our research is important for the business to advance in disclosure on the pack of food of relevant information, as well for the academic community regarding the front-of-pack nutrition labelling, as a responsibility issue. Future research is needed since there is a variety of front-of-pack nutrition labelling and is changing constantly.*

Keywords: *social responsibility, food labels, front-of-pack food labeling, regulations*

JEL Classification: *M14, L66*

1. Introduction

Overweight and obesity rates have grown rapidly in England, Mexico, and the United States since the 1990s. Obesity is a growing problem resulting from different factors including social, individual, environmental ones (Ogden et al., 2006; Draper et al., 2013). Obesity conducts to increased risks for different chronic diseases, such as heart disease, cancer, diabetes (Kim and Popkin, 2005; Flegal et al, 2012). The availability of processed food is one of the main drivers of obesity and non-communicable diseases (Monteiro et al, 2012; Swinburn et al, 2011). In 2015, across the OECD (2017), 19.5% of the adult population was obese. This rate ranges from less than 6% in Korea and Japan to more than 30% in Hungary, New Zealand, Mexico, and the United States. More than one in four adults is obese in Australia, Canada, Chile, South Africa, and the United Kingdom. Over the past decade, the prevalence rate of overweight and obesity has increased in Canada, France, Mexico, Switzerland, and the United States, while it has stabilized in England, Italy, Korea, and Spain. There is, however, no clear sign of retrenchment of the epidemic, in any country, and one in six children is obese.

The objective of the present paper is to compare the existing front-of-pack nutrition labelling, to increase the understanding of their use. In this way, we provide knowledge in terms of

front-of-pack nutrition labelling, and also the transparency increases. Our research is important for the business to advance in disclosure on the pack of food of relevant information, as well for the academic community regarding the front-of-pack nutrition labelling, as a responsibility issue.

The paper is divided into 5 sections. Section 1 provides a literature review on the impact of food labeling regulations, section 2 provides information related to features of the front of pack food labeling, section 3 comprises the methodology, section 4 refers to results, discussions, and issues related to sustainability, personal and social responsibility and the way we are free to choose what to eat and the last section presents conclusions, recommendations, and future research directions.

2. Literature review on the impact of nutrition labeling regulations on food markets

US Food and Drug Administration (US FDA) educates the public on trans fat-free foods. The Nutrition Labeling and Education Act (NLEA) implemented in 1994 required to disclose on the packages calories, fat, cholesterol, sodium, carbohydrates, fibers, sugar, protein, vitamins, minerals. NLEA regulated also the voluntary use of some claims such as sugar-free, gluten-free, low fat. Researchers have been interested in the impact of the NLEA policy on product consumption (Caswell and Padberg, 1992; Zarkin and Anderson, 1992).

In Australia, food labeling standards are established by the Australia New Zealand Food Standards Code (Wang et al, 2016). To avoid bad nutrients, consumers read the nutrition labels of the products. Some researchers discovered that salad dressing has a high-fat level. Other researchers found that consumers understand food content (Ippolito and Mathios, 1994; Marietta et al., 1999). There are studies in Australia that demonstrated the negative impact of obesity on the human body. One quarter of osteoarthritis and diabetes and one-fifth of cardiovascular disease, colorectal, kidney, breast, uterine cancers have as the main cause the obesity. The problem is obesity rates rise also in children. The answer to obesity could be social responsibility or maybe personal responsibility. When implementing front of pack labeling we encourage healthier eating, but also some companies can have a decrease in revenues, due to the impact on purchasing. To prevent obesity we should implement both personal and social responsibility, such as governmental policies (Handsley et al, 2009; Brownell et al, 2009; Goetzel and Ozminkowski, 2008).

Some authors reported that European legislation on nutrition helps consumers to choose wisely (Leathwood et al., 2007). Balcombe et al. (2010) discovered that UK consumers pay more to avoid foods with "red" nutrients. Barreiro-Hurlé et al. (2010) discovered that nutrition information influences the consumption of healthy foods, while other researchers discovered that the consumption of healthy food is not influenced by nutrition labeling (Mojduszka et al., 2001).

In November 2006 the Australian Food and Grocery Council AFGC launched the voluntary labeling named Daily Intake Labelling, used by 180 brands, that inform consumers regarding the sugar, energy, carbo, protein, fat, saturated fat, sodium per serve in a monochrome format.

3. Methodology

The objective of the research is to present the history of front-of-pack-food labeling at the global level, which represents a social responsibility issue, in pandemic times. We realized this by conducting a literature review and by studying also the rules and regulations related to food systems, at the global level. In this regard, we try to determine if FOPNL received attention over time. (Table 1)

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Tabel 1. Items used to describe FOPNL

Item	Description
Category	FOPNL are developed for categories of products or a selection of products from a category
Component	FOPNL take into consideration the negative components of products, while the others take into account the positive components
Reference unit	100 g, 100 ml, 100 kcal/KJ serving, reference intake per day
Objective	To help consumers improve their healthy choices, to stimulate the production of healthy food
Driver	Commercials, Government, NGO
The tone of the voice	There are negative, positive, mixed FOPNL
Use	Voluntary or mandatory
Initiative	Public or private

Source: Authors' projection, based on documentation

The research is focused on FOPNL implemented at the national level, not on ones used by different retailers (Figure 1).
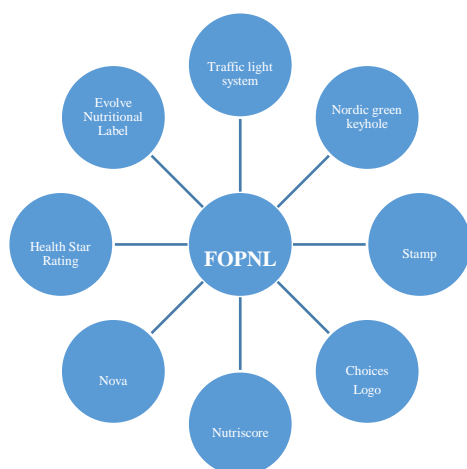
Figure 1: FOPNL implemented worldwide
Source: Authors' own research, based on documentation
After analyzing the literature on FOPNL we discovered there are some key issues to take into account when we start to compare the FOPNL

3. Results and discussions

Within this paper we investigated the regulations that exist worldwide to motivate consumers to eat healthier products. Manufacturers display voluntarily FOPNL nutrition information. According to the literature review carried out, we discovered that the first initiative of FOPNL

was in 1980 when started action on salt. In 1989 was introduced the keyhole in Sweden, a voluntary health logo. In 1992 Slovenia launched the protective food logo. In 1993 high salt warning label and protective food logo was introduced. In 1998 healthier choice symbol was introduced in Singapore. In 2000 Finland launched the heart symbol. In 2004, UK, South Korea, Ecuador there is a color-coded labeling system, called the traffic light system that highlights the nutrition content of foods and drinks. Red light means high in fat, sugar, salt, amber means medium and green means low and a healthier choice. There are also labeling that mix red, amber, and green. It is better to use a single color labeling, to not confuse the customers. Under UK traffic light label, launched by the Food Standards Agency, which is voluntary, an amber light is medium, a green light is considered a healthy choice, and a red light must be used with moderation. The system discloses each nutrient as a percentage of the daily recommended intake (DRI). In 2005 heart tick was launched in Nigeria. In 2006 in Australia, the DIG Daily Intake Guide of the FOPNL system was launched. In the same year, UK improved the FOPNL, by implementing it for five nutrients (calories, sugar, fat, saturated fats, salt) renamed Reference Intakes label, the scheme being used across the EU. In 2007 Healthy choices was launched in Belgium and the Nordic green keyhole logo was developed by the Swedish National Food Agency, introduced first in Sweden, in 1989. It represents a food label and has a set of criteria for 33 product groups. In 2009, Denmark Norway Sweden, Iceland, Lithuania implemented the keyhole logo (for sugar, salt, fats, fiber, wholegrain), a voluntary manner, being free of charge label, and unused for low nutritional value products such as drinks and snacks. Netherlands choices logo has two choices stamps: green stamp (the healthy one, for bread, milk, fruits, vegetables), and blue stamp (for soups, sauces, snacks, or food containing artificial sweeteners). In 2008 Poland introduced the Healthy Choices logo. In 2011 was launched EU Regulation No 1169/2011 on Food Information to Customers (FIC). Us Facts Upfront a private initiative was published in January 2011, launched by Food Marketing Institute (FMI) and Grocery Manufacturers Association (GMA), to display calories, saturated fats, fats, sodium, sugar content, fiber, protein, potassium, vitamin A, vitamin C, vitamin D, calcium, iron, in a voluntary manner, per serving. The date of implementation was 2012. In 2011, Canada FOPL Clear on Calories Initiative was launched by The Canadian Beverage Association. Also, in 2011, in Thailand FOPL for energy, sugar, fat, sodium guideline daily amount was launched. In the same year, Czech Republic launched the Healthy Choices logo. In 2011 South Korea introduced the traffic light system. In 2012 EU introduced the FOPNL, which came into force starting on 31 December 2014. In 2012, in Malaysia, voluntary FOPNLs for energy, protein, carbohydrates, and fat were launched by the Malaysian Minister of Health. In 2013, the keyhole symbol was launched also in Iceland and Lithuania. In 2013, in UK and Ireland, the traffic light system and the recommended daily intake were launched. In 2014 EU FIC entered into force. In 2014 health star rating system in New Zealand and Australia was implemented. The health star rating is a rate from ½ to 5 stars, based on energy, saturated fat, sugar, salt, sodium, fiber, and it is voluntary. The Australian Health Star Rating System is a 10 points indicator. In 2015, multiple traffic light system was launched in Portugal. In 2015, in Croatia, a healthy living guarantee mark was introduced. In 2016, EU countries start introducing country of origin labeling requirements (for example Italy, Spain, Greece, France, Romania, Portugal). In June 2016, in Chile were introduced front of pack labels, that announced when a negative nutrient exceeds the limit set by the Chilean Ministry of Health. In December 2016, as a part of its Healthy Eating Strategy, Canada launched a public consultation on a new compulsory food labeling logo that will warn about "high in sodium, sugars, and saturated fat" contents. Starting with December 2022, new rules will come into place. Will be multilingual FOPNL, calories will be bold and larger, vitamins will be expressed in mg and % in daily intakes, like a footnote, daily value for sugars, list of minerals of health control, such as potassium, calcium, iron, the serving size, the font size of serving size and calories increased and bold line added under the calories information, titles contains and ingredients will be bold,

allergens are included in contains, each ingredient begins with a capital letter, all of the sources of sugars are enumerated into brackets, on a neutral background, white. In 2017, six multinational companies developed Evolved Nutrition Label based on Reference Intake label and adding colors red to green, expressed per serving/portion. In 2017 in Korea a regulation requires manufacturers to inform the customers about the monosaccharides, disaccharides, and nutrients. In March 2017, an EU regulation introduces an easy to read FOPNL traffic light system. The Nutri-score is implemented in more than 110 large and small companies in January 2019 from France and was adopted also in Belgium and Spain. Nutri score is based on 15 scientific publications and is introduced in Luxembourg in February 2020. In 2017 Belgian Government voluntarily adopted the Nutri Score label, with implementation starting with 2018. On August 29, 2018, Uruguay was approved Decree 272/2018 referring to FOPNL for those products containing excess amounts of dangerous ingredients (sugar, salt, fats) that is force starting with February 29, 2020. It prohibits also disclosure of persuasive elements, gifts, contents, games that could attract children and other consumers. In 2018, Nutriscore was introduced in Spain, and in 2019 in Portugal. Brasil, in 2019, adopted the NOVA food classification system, referring to the level of processing and groups foods into four categories, the first group (green color coding, unprocessed or minimally processed), the second group (yellow color coding, processed culinary ingredients), the third group (orange color-coding, processed foods), the fourth group (red color-coding, ultra-processed foods, and drinks). In 2020 Germany adopted Nutri Score. In January 2020, in Mexic, the Government published some amendments to NOM 051 SCFI SSA1-2010, related to FOPL. This affects the use of black octagonal seals and avoids the use of any celebrity, cartoon, or mascot image on products. The rule entered into force on April 2021.

4. Front-of-pack nutrition labelling, a social responsibility issue

Due to the changes, the EU intends to harmonize FOPNL before December 2022.
The European Commission has a proposal to harmonize the mandatory FOPNL and to make the food systems healthy, fair, environmentally friendly, and sustainable. According to articles number 30 to 34 of the Regulation Number 1169/20112 The Food Information to Consumers (EU FIC) all prepacked food from the EU market should wear nutrition information, that includes the energy value, the amounts of sugars, salt, protein, saturated fat, carbohydrate, all expressed per 100 ml or 100 mg, presented with the numbers aligned or in a tabular format. According to article number 35 of the Regulation Number 1169/2011 The Food Information to Consumers (EU FIC), to ensure that consumers are properly informed to make healthy choices they allow additional and redundant information in terms of energy value and amount of nutrients expressed in 200 g, and/or using graphical symbols. The information disclosed should be fair, true, objective, to not create discrimination or limits to the free movement of products and goods.
Since European Commission considers color-coding the most promising in improving healthy choices, concludes that till the end of 2022 should introduce a harmonized mandatory FOPNL. Seven European countries (Italy, Czech Republic, Cyprus, Greece, Hungary, Latvia, and Romania) agree the labels should provide this information on the individual nutrients comprised within a product. There are also some exemptions, such as single ingredients products, traditional ones, protected origin products. They also agree that it should be taken into account the daily intake, to not avoid some products that are consumed in a small amount, such as oil. This position is oxymoronic with another scheme, Nutri Score, implemented by France, Spain, Belgium, Germany, Netherlands, and Luxembourg.
Brexit and UK exit from the EU represents an opportunity to introduce mandatory regulation for food labeling. An EU FOPNL scheme can promote social responsibility and sustainability,

and also healthy eating. When we choose a product we are checking the price, if we like the taste, the image or the color of the package, nutritional value, but nothing about environmental impact. The food industry produces global greenhouse gas emissions, so to reduce the environmental impact, many changes are expected. In this regard, the European Commission indicated that they work for a harmonized FOPNL

5. Conclusions

In the light of the last changes in the FOPNL to harmonize them across the world, the current research realized a comparison between the FOPNL existing worldwide. Most studies from literature on FOPNL are based on experiments regarding the FOPNL impact on purchasing and consumption. Current global health policy results in a variety of different FOPL systems. Studies reveal, through an online experiment, that Nutriscore could be the FOPNL that could be implemented worldwide (Egnell et all, 2020). There is a debate at the global level for setting additional systems and maybe a global one, that is harmonized. All developments and regulations and World Health Organisation recommendations contribute to changes in FOPNL systems. Organizations should develop marketing and social responsibility strategies to keep current with the regulatory system. They should adapt their products to future needs and identify challenges and opportunities in directing customers to choose a healthy diet and to eradicate confusion or temptations.

FOPNL provides plenty of information and the food industry tries to convince people and governments about the fact that there is no unhealthy food, but there are only unhealthy diets, due to personal responsibility, not to on social responsibility. Governments are unable to fight with the food industry and to provide real and effective nutritional information in a format easy to understand and to interpret, a homogeneous format, to sustain people to choose healthily. Thus, introducing other measures, rules, regulations, and codes to combat obesity does not look well.

Many FOPL are interpretative, depending on access to fresh food, environmental factors, poverty, limited resources, and family size. One food labeling solution could be represented by a design that increases the capacity of individuals to adopt informed dietary choices, the packaged food should display the nutritional information per both 100 g /100 ml and recommended serving, in each country should be developed a Food Standard Code . Even if some individuals declare that they are immune to food advertising that is not a solution. An argument is represented by the number of money companies invest in food advertising (Scully et al, 2009).

One of the limits in implementing healthy food is represented by a low-profit margin, due to the price of the product. A solution in implementing the FOPNL system, as an item of social responsibility is represented by lifestyle medicine. Different policies improve the health of the people, for the prevention of smoking, chronic disease, obesity. To reduce calories, we need to change eating patterns, the level of physical activity, the nutritional quality of the food, reducing sugar, salt, and fat consumption, increasing vegetable consumption.

The European Commission launched the Farm to Fork strategy, in May 2020, which proposes a harmonized and mandatory FOPNLsystem with implementation by the end of 2022. All the obstacles should be passed because it is important to improve the health of consumers to reduce the burden of non-communicable diseases. This represents a critical issue nowadays given the high risk of people that have the non-communicable disease, overweight, obesity, or other comorbidities associated with covid 19 infections.

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TRENDS IN THE PRESENTATION OF BUDGET INFORMATION IN ROMANIAN FINANCIAL STATEMENTS

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Abstract: The country's general economic development links public finances with the state, which needs financing, as they are a major concern for specialists in the field. The budget has objectively established itself as an appropriate and indispensable support for the establishment and rational management of public financial activities. A budget provides an overview of resources and how they are redistributed to achieve organizational objectives. Although the need for a system of programming and highlighting revenue and expenditure to support the implementation of specific activities and the dimensioning of their effectiveness is recognized, it is considered that this need is more pressing for public activities. As a financial management tool for strategic budgetary planning, best practices in the field of planning, and public financial management are strengthened, the public budget ends each year with the approval of the general account of its implementation. Romania is actively involved in the modernization of public sector financial management, thus it has managed to implement a well-functioning it service for reporting the financial statements of public institutions, which facilitates the collection of information needed for EU-level reporting. The implementation of this system at national level results in the discipline of the budget institutions and in full transparency as regards the budget used and how this budget has been spent. The aim of this work is to present, through an exploratory approach, the temptations in the presentation of budget information in the Romanian financial statements. Planning a realistic budget ensures optimal allocation of state resources, the achievement of political priorities, and involves only an extension of the time horizon in the preparation of the public financial plans, but also an economic focus and efficiency in the management of public resources. Responsible financial and budgetary management generates efficiency, effectiveness and performance in the design and implementation of balanced budgets for the functioning and development of the administrative capacity of public administration structures.

Keywords: budget, revenue, expenditure, effectiveness, financial management.

JEL Classification: M41

Introduction

In the current context, public finances are a major concern for specialists in the field. The country's overall economic development always associates them with the state, which needs financing. Finance plays a key role in all activities; it is a system of scientific knowledge, methods and techniques for estimating the need for financial resources and funding opportunities. The state will set up funds, save or borrow, distribute the funds according to priorities, on specific activities, spend them and analyze the efficiency of spending. The budget has established itself objectively as an appropriate and indispensable support for the establishment and rational management of public financial activities. A budget provides an overview of resources and how they are redistributed to achieve organizational objectives.

The need for a system of programming and highlighting revenue and expenditure to

support the implementation of specific activities and the scale of their effectiveness is more pressing for public activities.

As a financial management tool for strategic budgetary planning, best practices in the field of planning, and public financial management are strengthened, the public budget ends each year with the approval of the general account of its implementation.

Romania is actively involved in the modernization of public sector financial management, thus it has managed to implement a well-functioning it service for reporting the financial statements of public institutions, which facilitates the collection of information needed for EU-level reporting.

The implementation of this system at national level results in the discipline of the budget institutions and in full transparency as regards the budget used and how this budget has been spent. The purpose of this study is to provide an overview of the temptations in the presentation of budget information in Romania's financial statements.

Research methodology

In order to achieve the purpose of this work, to present the temptations in the presentation of budget information in the financial statements in Romania, various methods and techniques specific to economic sciences were used, based on the access to and study of specialized literature, Through which the essence of the investigated processes was reached. By an exploratory approach, by documentation, by analytical methods and techniques, by the method of synthesis, induction and the method of deduction, a logical analysis and a critical analysis of the studied materials was developed, involving us by a personal opinion.

1. Review of the literatura

The public administration is focused on a number of fundamental changes in limiting the size of the public sector, new skills for government entities, increased managerial accountability, performance orientation, higher operational decision-making powers, local financial autonomy and decentralization, improving relations with citizens and services for the benefit of communities. In Romania due to the uniqueness of the state there is an interest in this visible and inevitable phenomenon, based on new, modern principles that meet the present needs of the Romanian society.

At the level of territorial administrative units the budget after L. Moisica (2009), is planned and established to finance public activities and is adopted by law. The term 'budget' is widespread and 'used to present the forecast for a certain period of time (usually one year), both of a country's income and of an economic entity's expenditure. In its simplest form, the budget concentrates an estimate of the revenue needed to finance the proposed expenditure, points out M.D. Manea, (2011).

The two basic components of a budget consist of: Revenue and expenditure. Through public finances, C. Busu says that specific methods and estimation techniques determine the need for financial resources and the possibilities for financing them, as well as the rationale for balancing budgets, financing deficits, carrying out financial control, financial forecasting, and also assessing efficiency in the financial field.

Managing Authority the Ministry of public Finance in Romania is the institution with a role in the management of public financial resources through specific instruments. The Ministry of public Finance issues the budget policy guidelines, including the indicative level of budgetary expenditure for the fields of activity financed from the State budget, according to the study carried out by O.S. Vezure in 2011. Due to technological progress, the state wants to maximize revenue collection and manage public funds efficiently through the State Treasury, the public treasury and its bank. The State Treasury shall ensure that the revenue and payments operations concerning public funds, including those relating to public debt, are carried out.

Virgil Madgearu, 1935, an economist adept of economic liberalism, supported in his work the way of financial balance, the idea of budgetary balance and the fact that in times of imbalance, the budget, currency and credit are mutually conditioned. In order to achieve a structural budget balance, government expenditure shall be rationalized and regularly controlled. At a time of crisis, in our view, instead of rationalizing expenditure, budget appropriations are often reduced to a minimum and public services can no longer function normally, some public services become ineffective, insufficient maintenance of installations is damaging them and paralyzing previous efforts. In modern theory, Paul Krugman said, fiscal consolidation to achieve economic growth is achieved by cutting labor costs.

Increasing fiscal revenues through tax increases is not appropriate, but rather through government loans, if public debt is sustainable and public expenditure growth is not recommended to be higher than private economy growth, as it can drive the economy into recession. Budget deficits are usually rising in times of recession as a result of high expenditure. Surpluses occur when expenditure is low in times of economic growth. The government, through its strategy, must find the optimal fiscal decision, use budget deficits and surpluses to standardize the economic cycle, considering a certain way of spending and an optimal level of taxation.

We can conclude that the deficits in the recession must be balanced with the budget surpluses in the economic downturn, which is why the budget should be balanced throughout the economic cycle and not every financial year. The use of financial-budgetary management to optimize the activity of the budgetary system, financed entirely or partly by public funds, has been of interest to studies for a long time, seeking ways of optimizing budget implementation, i.e. with the same financial effort to achieve greater effects, for example, when there are no difficulties in collecting budget revenues in a growing economy or at constant effort, maximum achievements are made in the economy.

Another possibility to optimize the budget is to do the same work but with a lower, almost minimal fiscal effort, an option for economies in economic crisis or when fiscal revenues are stagnating or even decreasing. The government can opt for state loans when the rate of economic growth is higher than the real interest rate. In this case, the ability to repay its debt is favorable due to economic growth, as the tax base will increase faster than the burden of servicing the government debt, which has a lower interest rate. The increase in government debt must be sustainable, otherwise the country's international reserves may be exhausted.otherwise, governments should reduce their government debt when the interest rate is above the rate of economic growth. If the economic results are good due to temporary positive trade shocks, the governments of the States can increase public debt. However, lending to infrastructure projects that bring added value in the future can be a means of smart growth.

According to M.A Georgescu, 2009, the new realities in the economy claim that the deficit solution is agreed not only to balance the budget implementation, by calling for extraordinary revenues, but also to draw up and approve from the very beginning deficit budgets. In practice, this phenomenon is carried out in different ways in European countries. Thus, in Romania, Law no. 5002002 on public finances no longer reiterates the obligation to respect the principle of budget balancing, leaving the Parliament the annual approval of budget revenues and expenditure the state of balance or imbalance of each budget approved by law.

2. The budgetary process

The budgetary process in Romania is legally supported by the legislation on public finances, the role of the budget adoption is the responsibility of the Parliament, which approves through the laws of the State budget, as well as the budgets of the national Fund for Health Insurance, and if necessary they approve laws to correct these budgets. The budgetary, theoretical and practical process goes through some steps as can be seen in Figure no 1.

Local public revenue materializes in receipts from taxes, duties, contributions, fines, penalties, payments from public institutions' income, income from renting and leasing of land and other state property, loans, grants, sponsorship, and aid. On a monthly basis, a 47 percent share of the income tax collected to the state budget is allocated to the local budgets at the level of each administrative-territorial unit.
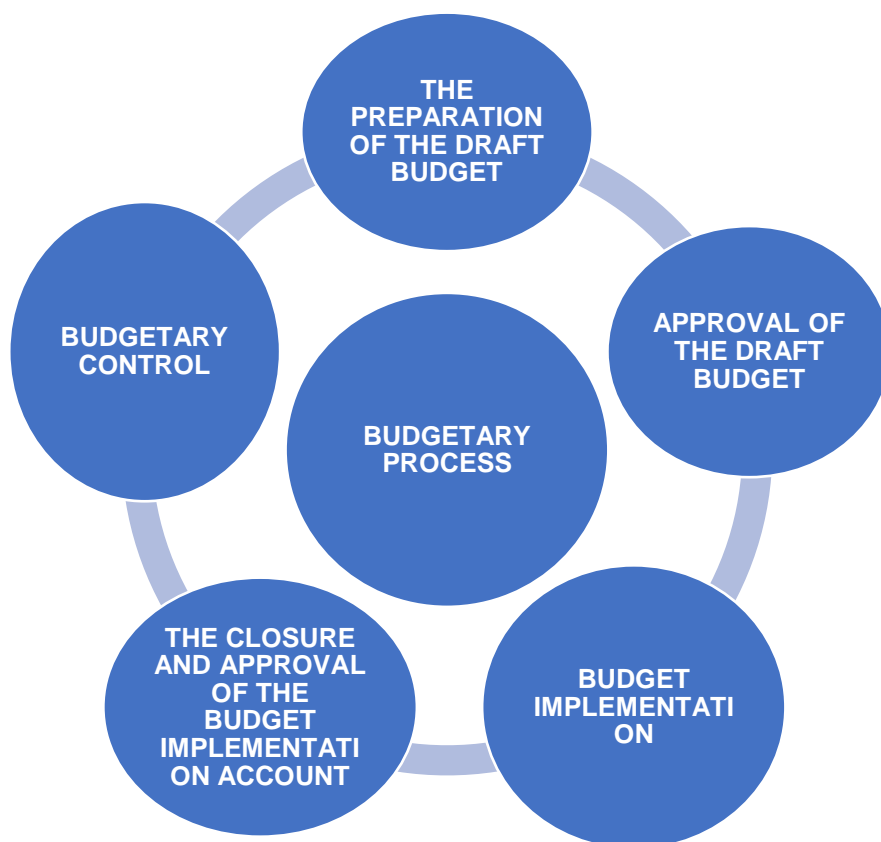
Figure no 1 Stages of the budgetary process
Source: Author projection.

In order to balance local budgets, by decision of the Director of D.R.F.P. 80% of the amount is granted according to the following criteria: Population, the area within the territorial administrative unit and the financial capacity of the public entity, and 20% of the amount is distributed by the County Council to support local development and infrastructure projects, which require financing. The state budget transfers to local budgets for investments financed by foreign loans, to which the government also contributes, according to the law, and is approved annually, in a global position, by the state budget law.

Public expenditure is payments made from resources mobilized in different ways for the purchase of goods or services necessary to meet the various objectives: General public services, economic actions. Local public expenditure includes operating expenditure – staff expenditure and expenditure on goods and services – and development expenditure.

The budget is reflected in the financial means needed to provide public goods and services. The budget, in the I. Cenar, (2007), is a system of financial flows related to the formation of public financial resources and their distribution, an instrument of State financial policy in the field of taxation and public expenditure. The budget is a document that collects, allocizes and redistributes the resources needed to adjust economic and social activity. The redistributive role of the budget is highlighted by the mobilization of resources and their distribution to finance activities or actions. The role of regulating the economic life stems from the importance of the state budget as a law-making instrument that reflects politics.

3. Presentation of information on the implementation of the budget

The budget implementation account shall be specific to the financial statements drawn up by public institutions and shall show the degree of achievement of the indicators set out in the budget. The budget implementation account shall comprise two parts, as underlined by I. Cenar, (2017), one affected by income and the other affected by expenditure.

Budget implementation, in practical studies on the application of International Financial Reporting standards in Romania, A. B. Popa,(2007), is defined as revenue collection and expenditure activity approved by the budget. At this stage of the budgetary process, a number of state operators are attracted: The fiscal apparatus with all its central and territorial structures, ministries, territorial-government units, public institutions and other public entities from which they receive transfers.

The items contained in the revenue part of the budget implementation account shall be as follows: Initial budgetary provisions, final budgetary provisions, entitlements in respect of which accounts have been drawn up and entitlements established which are still to be collected. In the case of expenditure, information shall be given on the following: Budgetary appropriations (annual, quarterly aggregated), budgetary commitments, legal commitments, payments made, legal commitments paid and actual expenditure.

The budget expenditure is made only on the basis of supporting documents, said M.D. Manea (2012), acknowledging receipt of material goods, provision of services, execution of works, payment of wages and other financial charges, payment of budgetary obligations and other obligations. In the process of budget implementation, budget expenditure shall go through the following phases: Commitment, liquidation, authorization, payment. The payment instruments shall be signed by the authorizing officer and the accounting officer.

The cash implementation of local budgets shall respect annual budgetary principles and laws which stipulate and approve the budget appropriations for expenditure in each budget year, as well as their functional and economic structure and shall be carried out through the territorial units of the State Treasury, with the budget revenue shown in separate accounts, carrying out revenue and payment operations within the limits of the budget appropriations and approved destinations. The main authorizing officers have to analyze monthly the necessity of maintaining budgetary appropriations and propose that the local council cancel or transfer the respective appropriations.

The budget appropriations approved by the local budget can be used by opening of credits by their main authorizing officers, within the limits of the approved amounts, according to T.T. Mosteanu (2012), and in compliance with the legal provisions governing the payment of the costs in question. Where revenue not collected and expenditure committed, cleared and authorized under budgetary provisions and not paid by 31 December, shall be charged or paid to the budget for the following year as appropriate. Unused budgetary appropriations by the end of the year shall be canceled as of right. The provisions of the annual budget laws and the amending laws only act for the budget year in question, says E. D.Dascalu (2006).

The appropriations available from non-repayable external funds and from public funds to co-finance the European Community's financial contribution remaining at the end of the budget year shall be carried over to the following year to the same destination. At the end of the

budget year, each public institution having legal personality shall draw up the budget implementation account. It shall reflect the outcome of the exercise by comparing revenue and expenditure incurred during the year. V. Grecanu Cocos, paragraph 2011, claims that, on the basis of the financial statements submitted by the main authorizing officers, the cash-in-house implementation accounts of the local budget, including the annexs thereto.

The principal authorizing officers shall draw up and submit for approval to the local Council by 31 May of the following year the annual accounts for the implementation of the budgets. On a quarterly basis and annually, the principal authorizing officers shall draw up financial statements relating to the implementation of the budget, which shall be submitted to the Directorates-General for public finances. The result of the end of the budget year, which shall end on 31 December with the approval of the general implementation account, may be a surplus or a budget deficit.

The improvement of the accounting information system, with the help of essential techniques for the electronic collection, processing and transmission of data and information, in an appropriate communication and computer environment is an increasingly important concern. Access to accounting data from anywhere on the Internet, access to information, and the speed at which it is transmitted, lead to rapid decision-making, efficient management of the entity, but also accounting. Modern and efficient it systems facilitate collaboration and communication between institutions so that erroneous data is eliminated. They form arteries for transmitting, analyzing and storing accounting information. Careful review of existing it systems is a key element.

I. Cenar,(2015) emphasizes that a step in this respect has been taken by implementing the public sector national System of Financial Reporting project, which aimed to produce a new reporting form for budget implementation and financial statements, submitted on a monthly basis, in electronic, standardized, secure form, In order to increase the confidence of data collected through cross-validations with Treasury data and to provide information for the internal use of the MF. Forexebug emerged as a necessity for the implementation of the Stability and Growth Pact, in which measures were adopted to safeguard budgetary discipline and promote the stability of the European economy.

Increase the efficiency of central and local public administration and administrative transparency by providing public institutions with modern, standardized tools for reporting financial statements and publishing detailed information on the use of public funds on a single, electronic, standardized and secure form in accordance with the budgetary classification, They are the main objectives of the Forexebug, in line with the European Union Directive No85 of 8 November 2011. Access to information is critical but insufficient to achieve the objectives of budgetary transparency.

The transparency of the budgetary process is an important component of decision-making transparency, ensuring budgetary transparency, boosting the accountability of the authorities and increasing the effectiveness and efficiency of the use of public resources. This requires consultation and participation. It should also be noted that budgetary transparency is ensured at different stages of the budgetary process, taking good practice in this area as a benchmark. The liability of the public sector financial management for the accuracy of the financial information presented in the financial statements shall be aligned with the obligations of transparency, disclosure of the costs. The objective of applying standards on financial information included in the financial statements is to contribute to ensuring transparency of financial information relevant to the decision-making process of investors and other users. By applying financial disclosure standards, entities protect investors, and contribute to increasing company confidence.

The statistical analysis of the information presented in the reporting of financial statements highlights the importance of accounting and its impact on user decisions. We conclude that information is an indispensable resource for the development of successful businesses and for the improvement of financial management.

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4. Conclusions

Romania is actively involved in the efforts to improve financial management in the public sector so that at present there is an accounting system based on commitments focusing on transparency and accuracy. The transparency of the budgetary process has been largely developed thanks to the insistence and pressure from international institutions and civil society. Ensuring decision-making transparency is perceived by institutions as redundant, unnecessary work. This means that transparency is not understood as an effective tool for making the use of public money more effective.

The need to implement a reporting system at national level results in the discipline of the budget institutions but also in full transparency as regards the budget used and the way in which it has been spent, this implicitly increases the confidence of data collected through cross-validation between system records and financial records of publicly owned institutions. Planning a realistic budget ensures optimal allocation of state resources, the achievement of political priorities, and involves only an extension of the time horizon in the preparation of the public financial plans, but also an economic focus and efficiency in the management of public resources. Responsible financial and budgetary management generates efficiency, effectiveness and performance in the design and implementation of balanced budgets for the functioning and development of the administrative capacity of public administration structures.

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SEPARATION OF FIXED AND VARIABLE COSTS FROM MIXED COSTS AT A WATER AND SEWERAGE OPERATOR

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Abstract: *Knowing the costs of some activity is essential to a financial manager. Within costs it is important to group them into variable costs and fixed costs. The operation of an enterprise generates costs that with the help of the accounting records fail to group costs into the two large categories and a third category of costs arises, namely mixed costs. Mixed costs contain both fixed and variable costs and can only be separated by statistical methods. With the least-squares method, we can make this separation of mixed costs, respecting the conditions imposed by a statistical analysis. Very many use this method without analyzing the parametricity of the data, and the results obtained are of poor quality. In this article we have reviewed the literature on variable, mixed and fixed costs and the statistical model applied. In the research we applied the least-squares regression analysis to the water and sewage operator in Harghita County for the water activity for 2020 and 2019, comparing the results over the two years.*
The results were also verified with the help of the IBM SPSS analysis program. The conclusion we have reached is that the method of the least-squares is very well applicable for the separation of mixed costs if the data collected at the accounting level are parametric as happens at the regional water operator Harviz S. A., where at the accounting level fixed, mixed and variable production costs are analytically highlighted. The decisions made on the basis of these costs are relevant and enable the undertaking to make the right decisions knowing its break-even point and the fixed costs it can incur.
Decisions are also relieved by the fact that fixed costs are highlighted in the two subcategories, namely: short-term fixed costs and long-term fixed costs. As a final conclusion, the decrease in production caused by the reduction in consumption in 2020 did not substantially change the variable costs separated from the mixed costs, so the method used provides support for correct decisions.

Keywords: *variable cost, mixed cost, least-squares method*

Classification JEL: *L95, Q25, M21, M49*

1. Introduction

For Economic Modeling and planning of production budgets for the following years it is very important to group costs according to the location of costs on cost objects, direct and indirect costs, and after their behavior towards the change in production volume in fixed and variable. If the first grouping does not present a real challenge for practitioners, the situation becomes a little more complicated if we want to group costs into fixed and variable.
In everyday practice from the point of view of cost behavior towards the volume of production we will meet three categories of costs: fixed costs, variable costs and mixed costs. In the case of mixed costs, it is necessary to apply a statistical method as accurate as possible to separate mixed costs into fixed and variable costs (Briciu, 2008). Even if some publications treat mixed costs as semi-variable costs, we consider the name of mixed costs to be much more relevant.

If we add to the determinant variable and fixed costs by accounting methods, those separated by statistical methods from mixed costs, we obtain from all the production costs (direct and indirect) all the variable and fixed costs. After this separation we have the possibility to plan production budgets for the following years, respectively taking measures to optimize existing costs.

We must admit that fixed costs can still be grouped into two subcategories, namely short-term fixed costs and long-term fixed costs, a problem that can be solved by analytical accounting.

In this article we perform separation of fixed and variable costs from mixed costs at the regional water and sewerage operator in Harghita County.

2. Paper Body

Literature review

Direct expenses are those costs that can be traced on a specified cost object (Garrison et. al., 2015), (Mocanu, 2016), (Dumbravă, Pop, 2011), (Burja C., 2011). This definition of direct costs is consistent with the definitions given by researchers in the field of management accounting. The vast majority of researchers consider that it is direct expenses that relate to the production process. In the approach of the ABC cost tracking system are considered direct costs and those that are not dare production expenses can be identified on cost objects (Kaplan, Cooper, 2001).

Indirect expenses are costs that are common to several specified cost objects (Blocher et el., 2010), (Laáb, 2017), (Tabără, Briciu et al., 2011). In the case of indirect expenses, the opinions of researchers are divided, some researchers consider indirect expenses only those costs that relate to the manufacture of products, but cannot be identified on a cost object and only on a cost center (Laáb, 2017), other researchers consider that they are indirect expenses in the broader sense and include in this category also those of sales and administration (Tabără, Briciu et al., 2011), (Atkinson, Kaplan et al., 2012).

Variable costs are generated by the production process and their value is closely related to the volume of production (Chen, Koebel, 2017). These variable costs can be linear, progressive, degressive and degressive (Musinszki, 2014). Variable costs follow to some extent the change in production volume (Fülöp, 2011).

Mixed costs are specific to the production process, but in some cases, it is not possible to separate them at the accounting level into variable and fixed costs. These mixed costs comprise both variable and fixed costs (Atkinson, Kaplan et al., 2012).

Fixed costs are costs that are independent of the change in the volume of production and are "*relatively constant relative to the level of production or activity*" (Bâtcă-Dumitru, Sahlian, 2018).

To ease the day-to-day economic decisions of managers we need the separation of variable and fixed costs from mixed costs. By knowing variable costs, we can calculate intermediate results using partial cost methods and contribution method (margins) (Bâtcă-Dumitru, Sahlian, 2018).

To estimate the mixed and variable components of a mixed cost we can use the following methods (Garrison et. al., 2015): - analysis of the account, - the minimum maximum method, - the method of the least-squares.

In the case of the last two methods as the first step of the analysis it is recommended to make a scattergraph. If the resulting graph indicates a linearity between the volume of activity and the mixed cost, then we can proceed to the minimum-maximum method or the method of least-squares. Since the method of least-squares is more accurate than the minimum - maximum method researchers recommend using it (Garrison et. al., 2015). The method of least-squares has the following steps (Bâtcă-Dumitru et al., 2020):

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1.Calculation of the average volume of activity:

$$\bar{Q} = \frac{\sum_{t=1}^{n} Q_t}{n}$$

2. Calculation of average mixed costs:

$$\bar{C} = \frac{\sum_{t=1}^{n} C_t}{n}$$

3. Calculation of the deviation of the volume of activity from the average volume of activity:

$$X_t = Q_t - \bar{Q}$$

4. Calculation of the deviation of the costs of activity from the average costs:

$$Y = C_t - \bar{C}$$

5. Calculation of variable costs per unit of activity:

$$cv = \frac{\sum_{t=1}^{n} (XY)_t}{\sum_{t=1}^{n} X_t^2}$$

6. Calculation of total variable costs:

$$Cv_t = cv \ x \ Q_t$$

7. Calculation of total fixed costs:

$$Cf_t = C_t - Cv_t$$

The method of research used and case study

We made a brief presentation of the specialized literature and based on the data provided by the Regional Water and sewerage operator Harviz SA we separated from the fixed and variable mixed costs for the years 2019, 2020 to compare the two values and analyze the effects of the decrease in the volume of activity on the mixed costs and the variable unit cost established using the least-squares method.
From figure no.1 there is a certain linearity of the mixed costs with monthly water production. This linearity makes it possible to apply the least-squares method for separating fixed and variable costs. It is very important to examine the data using a scattergraph, because if the data does not show certain collinearity then the results returned by the least- squares method is unusable.
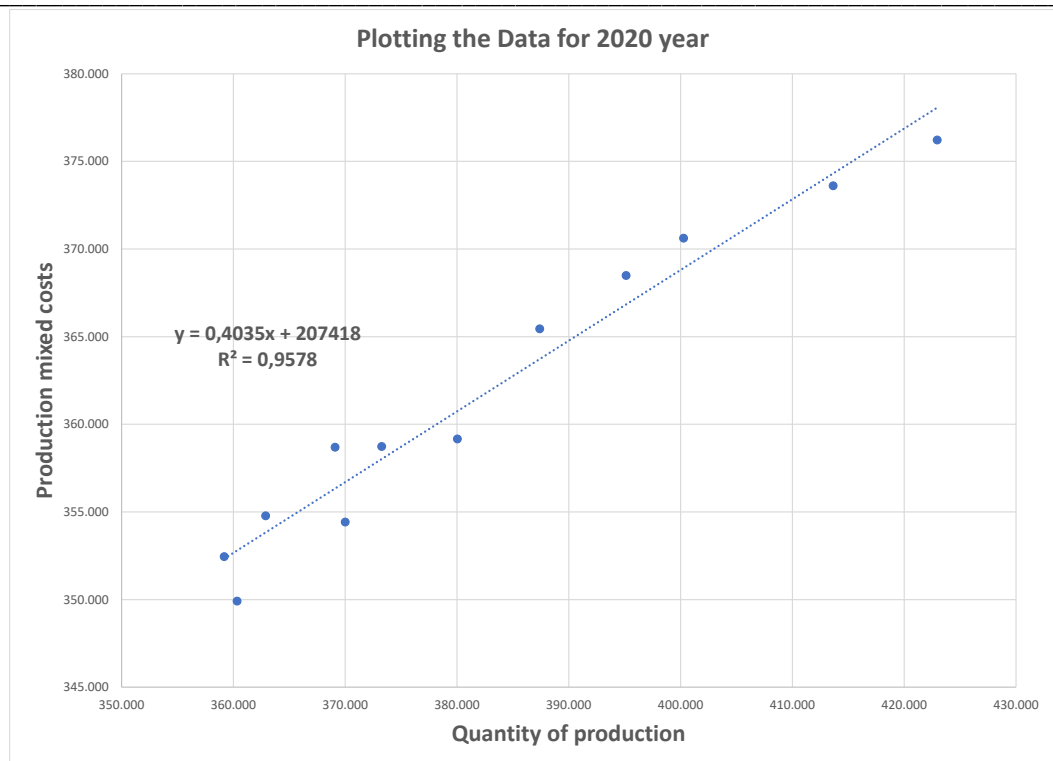
Figura nr.1 Scattergraph Method of Cost Analysis for 2020 year (source: own elaboration)

The estimate made by the least-squares method is based on linear regression:

$$C = a + bQ$$

from which it follows:

$$b = \frac{n(\sum CQ) - (\sum C)(\sum Q)}{n(\sum Q^2) - (\sum Q)^2}$$

$$a = \frac{(\sum C) - b(\sum Q)}{n}$$

where:

    Q = The level of activity
    C = The total mixed cost
    a = The total fixed cost
    b = The variable cost per unit of activity
    n = Number of observations

Linear regression for the year 2020 has the following form:

$$C = 207.418,57 + 0,403Q \ (R^2 = 0,958)$$

Table no.1. Application of the least-squares method for the mixed costs of water production at Harviz S. A. for the year 2020

Months	Quantity of prodsolution m³	Production mixed costs - RON -	X	Y	X * Y	X2	Variable cost - RON -	Fixed costs - RON -
January	369.997	354.420	-12.843	-7.460	95.809.500	164.946.844	149.280	205.139
February	359.163	352.449	-23.677	-9.431	223.292.293	560.615.640	144.909	207.540
March	387.394	365.450	4.553	3.570	16.257.207	20.733.057	156.299	209.151
April	362.877	354.783	-19.963	-7.097	141.672.157	398.524.297	146.408	208.375
May	360.318	349.916	-22.523	-11.963	269.446.498	507.285.229	145.375	204.542
June	380.022	359.167	-2.818	-2.713	7.645.367	7.943.848	153.325	205.842
July	395.128	368.488	12.288	6.609	81.209.094	150.991.421	159.420	209.069
August	400.263	370.624	17.423	8.745	152.361.425	303.554.889	161.491	209.133
September	422.944	376.226	40.104	14.346	575.344.000	1.608.320.924	170.642	205.584
October	413.641	373.606	30.801	11.727	361.198.782	948.685.995	166.889	206.718
November	373.250	358.729	-9.590	-3.150	30.210.731	91.975.452	150.593	208.137
December	369.087	358.695	-13.753	-3.184	43.794.707	189.151.702	148.913	209.782
	382.841	**361.880**	**0**	**0**	**1.998.241.761**	**4.952.729.300**	**1.853.543**	**2.489.011**

(Source: own elaboration based on data provided by Harviz S. A.)

1. Calculation of the average volume of activity:
$$\bar{Q} = \frac{\sum_{t=1}^{n} Q_t}{n} = \frac{4.594.087}{12} = 382.841 \ m^3$$

2. Calculation of average mixed costs:
$$\bar{C} = \frac{\sum_{t=1}^{n} C_t}{n} = \frac{4.342.554}{12} = 361.880 \ RON$$

3. The calculation of the deviation of the volume of activity from the average volume of activity was made for each month as follows from the column "X"

4. The calculation of the deviation of the mixed costs of activity from the average of the mixed costs was carried out for each month as shown in column "Y".

5. Calculation of variable costs per unit of activity:
$$cv = \frac{\sum_{t=1}^{n} (XY)_t}{\sum_{t=1}^{n} X_t^2} = \frac{1.998.241.761}{4.952.729.300} = 0,4034 \ RON/m^3$$

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6. The calculation of total variable costs was made on a monthly basis as shown in the column "Variable cost".

7. The calculation of total fixed costs was made monthly by subtracting total variable costs from mixed costs.

If we calculate at the year level the fixed unit cost from the mixed costs, it is 0.7971 RON/m^3 of water.

After performing the same calculations for 2019 at a higher total production (4,671,689 m^3 per year compared to 4,594,087 m^3 in 2020) unaffected by the pandemic, resulting a variable cost per unit of activity 0.4074 lei/mc and a fixed cost per unit of activity 0.4293 RON/m^3.

It can be seen that the change in the volume of production does not have a strong effect in establishing the variable cost per unit of activity from mixed costs.

3. Conclusions

The least squares method can be an appropriate method for separating variable and fixed costs from mixed costs. The essential condition is on the accounting side, if the collection of costs is done properly then mixed costs - such as for example maintenance and repair costs in which both components that relate to the volume of production and costs that are independent of them appear-can be separated using this method. Being a method on a statistical basis cannot be neglected the conditions imposed to achieve a linear regression, that is, the existence of a significant correlation between the dependent variable and the independent variable, respectively the data to be processed to be parametric. After proper data collection in accounting the results of the method are good.

In managerial decisions it is very important to know the level of unit variable costs and in this way the partial cost method can be applied and the break-even threshold of the enterprise can be calculated.

In times of economic recession when there is a reduction in production, without an accurate knowledge of variable costs, no relevant managerial decisions can be made.

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CRITICAL SUCCESS FACTORS OF STRATEGIC ACCOUNTING INFORMATION SYSTEM AND IT'S RELATION WITH STRATEGIC DECISIONS EFFECTIVENESS

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Abstract: *This paper attempts to explain the critical success factors of strategic information system (SIS) and it's relation with strategic decisions effectiveness. An analysis demonstrated that SIS advancement began from a mechanical concentration toward a procedure concentrating on complementary association with firms' system and notwithstanding setting business technique and driving hierarchical change and structure. Primarily, the best SIS is coordinated such that better fits the affiliation properties for the culture, structure, style and limits. Finally, strategist's effort to improve the fragmented data they have dependent on their past experience and claim intellectual styles. In this way any choices made would be made reliant on the strategist's qualities, convictions and experience, which at last could confine the decisions that they make. Basically, then qualities fill in as outlines or establishments for deciding, tackling issues and settling clashes.*

Introduction

Strategic Information System (SIS) is the distinguishing proof of a heap of PC based capacities that will help a firm in perceiving its business objectives and achieving its marketable strategies (Bhattacherjee & Hikmet, 2007). The writing analysis demonstrated that SIS advancement began from a mechanical concentration toward a procedure concentrating on complementary association with firms' system and notwithstanding setting business technique and driving hierarchical change and structure (Bignell & Fortune, 1984). Amid the previous decade, scientists have proposed numerous models for the SIS achievement. In like manner, as of late, as associations vigorously depend on data frameworks for upper hand and execution improvement, the administrators understood the essentialness of SIS as well (Bignell & Fortune, 1984).

There are three stages in most of the systems of an organization. The first stage in the system is the data which is the input. The information is the product of the system operations. The data that is entered into the information system for processing is the input. The information system collected and processed the data. () stated that data alone are meaningless and useless until they are addressed and transformed into a useful, structured and meaningful form, which is then called information (Thijeel, Flayyih and Talab, 2018).

Data are the beginning of the system's operation and are facts that are in the form of abstract numbers or symbols. (Romney & Steinbart, 2009) added that data are facts and figures, which are collected, stored and transformed by information systems and can be expressed as facts. (Hall, 2008). Data can be classified into two main categories: the first category is the financial data that relate to all economic events that occur in the organization and are followed by a financial impact that can be measured and expressed in financial terms and

non-financial statements. This is related to quantitative data, which can be expressed quantitatively, such as the preparation of workers, the number of hours worked, the number of shares, the number of units sold. The second category is the data that are not quantifiable nor expressed quantitatively because they are difficult to be measured either quantitatively or quantitatively. (Al Jabouri & Kadhum, 2021) concluded that there is an extent to which training programs are used for employees and consumer tastes.

According to Hall (2008), apart from the simple definition of information that, information is often defined simply as the data being processed which is not enough, Information is determined by its effect on the user, not on its physical form. Information is the data that is organized and processed to give meaning to the user. Users need information to make decisions or to develop decision-making. Generally, as the quality and quantity of information increases, the user can make better decisions (Romney and Steinbart, 2009).

Generally, information provided by SMEs can be categorized into two main types: the first one is the mandatory information which is provided to government agencies or lenders; and the optional information that is provided to the internal parties of the organization. One of its conditions and characteristics is that the information must reduce the uncertainty of the decision-maker and the information should increase the knowledge of the decision-maker. In contrast, if it is not beneficial, it will be added to the knowledge of the decision-maker which may benefit from the future process of delayed decision. Thus, the information must be provided by the system, great values while the information must be essential to any connection between the internal and external parties (Al-taie & Flayyih, 2020).

There has been considerable interest in recent year in supporting and replacing accounting information with non-financial information in a number of uses such as cost and profit forecasting and corporate valuation. The joint use of financial and non-financial information has different results and the benefits of those use has been documented by researches. To measure non-financial performance accurately and to appropriately evaluate and weigh metrics when multiple accounting and non-financial measurements are used are the two important changes in the use of accounting integration with non-financial information. These challenges have to do with the nature and magnitude of the measurement error. Loft (2009) mentioned that this helps to place appropriate weights on multiple scales.

The data processed and submitted to users must have characteristics that differ from those identified by the FASB in Statement 2 according to the new joint framework of the Financial Accounting Standards Board (IASB) and the International Accounting Standards Board (IASB) (SFAC 2 1982). The basic characteristics according to the common framework and the specific characteristics of accounting information are the appropriateness and honesty in representation (Flayyih et al., 2020).

Management Control Systems (MCS)
The literature review found several definitions of Management Control Systems (MCS). According to (Henri, 2006), MCS are defined as formalized procedures and systems that use information to maintain or alter patterns in an organizational activity. This definition includes planning systems, reporting systems, and monitoring procedures that are based on information use. Akroyd, & Maguire, (2011) were used MCS concept (citation and sentences) which was developed by Anthony (1965) as the process by which management ensures that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives. However, Bisbe, & Otley, (2004) have focused on MCS definition by Simons (1995) refered to management control systems as the formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities. Other researchers (Valeiras,Sanchez & Conde (2015)used Chenhall (2003) study, which indicated to MCS consist of systematic use of management accounting to achieve some goals and other controls such as personal and clan controls.

MCS have been categorized in different ways in the literature. Some of these categorizations are formal and informal controls, action and results controls, tight and loose controls, and financial and non-financial controls (see for instance; Kald et al., 2000; Langfield- Smith, 1997; Simons, 1991). Thus, it has been argued that to make MCS more relevant in today's competitive environment there is the need to go beyond financial analysis and to include nonfinancial analysis (Chenhall, 2003; Nyamori, Perera, & Lawrence, 2001). Simons's (2005) classification of controls into diagnostic and interactive provides a useful reference for understanding the distinction between financial and non-financial MCS. Diagnostic controls tend to be backward and inward-looking and can be associated with financial MCS while interactive controls tend to be forward and outward-looking and can be associated with nonfinancial MCS.

Financial and non-financial MCS are both important when it comes to strategy development (Alkhafaji et al., 2018) May be better combine with the above paragraph. In this review, we found various definitions of business strategy, and most of selected papers have defined business strategy is concerned with how a business achieves competitive advantage and it has been suggested that the MCS should be tailored explicitly to support the strategy of the business to lead to superior performance, for instance Henri, (2006); Acquaah, (2013).

The Relationship between MCS, Business Strategy and Firms Performance

Introduced(Watts et al., 2012) the new performance measurement and MCS. However, the authors find that the small business performance pyramid and performance wheel imply that numerous models of control can be lowered to one overarching model. This is because it takes into cognizance and incorporate the weakness of the prior models and also provide broadly a model of performance management capable to be adopted so as to meet the demands of any organisation. The implication of this research is the creation of the pyramidmodel of control for small firms without taking into consideration the larger firms.

In (Landfield & Zechmann, 1997) article review studies relationship between MCS and business performance. The author finds that very few research "empirical" papers were published considering the strategy as an interest in both professional and academic literature in recent times. The contingency studies focused on identifying the characteristics of MCS associated with effectiveness under different strategies. However, the research evidence is fragmentary and sometimes conflicting. These conflicts were believed to be partially a result of the differences in research designs (as occurs in all contingency research), but also arose from the way that control, effectiveness and strategy were operationalised and measured. Future research in this area could aim to develop this consistently (Al-Ani& FLAYYIH,2018).

Strategic Information System
Be that as it may, regardless of its potential advantages, the quantity of effective SISs is appeared to be observably low. Subsequently, contemplating SIS achievement has pulled in researchers' consideration. Additionally, SIS disappointments survey showed that the majority of those disappointments come from little consideration regarding authoritative characteristics of SIS (Brown, 1998). Subsequently, one of the ways to improve SIS achievement is to distinguish what hierarchical practices that could improve the likelihood of SIS achievement. Also, in view of research led on SIS achievement, it uncovered that there are visit calls for examining the interrelationships between authoritative angles what's more, SIS achievement (Bruque et al.,2008), (Bunker et al., 2007). In any case, investigate concentrated on the connection between firm-wide hierarchical angles and SIS achievement is somewhat constrained (Bunker et al., 2007). Henceforth, there is space for both hypothesis and practice to think about SIS accomplishment by completing an exhaustive exact investigation. The present investigation attempts to satisfy this need. In this way, the principle goal of this investigation is to audit and broaden the writing and propose

experimental testing of the hypothetical system for SIS achievement. These advancement, disappointments, and past investigates lead the scientists to two significant ends.

Initially, the best SIS is coordinated such that better fits the affiliation properties (for instance culture, structure, style and limits). Second, in perspective on the centrality of various levelled perspectives, look at on SIS progressive creates can update the level of SIS learning. Looking into past systems/models on SIS achievement demonstrated that a few investigations have used a wide viewpoint, for example, SIS solution, basic achievement factors (Bhattacherjee & Hikmet, 2007; Bunke et al., 2013; Burton-Jones, & Gallivan, 2007) while others have utilized a restricted point of view of some hierarchical develops, for example, between gathering collaborations, authoritative responsibility (Bussen & Myers, 1997; Caseley, 2004; Cerpa & Verner, 2009). It very well may be inferred that there is no accord on a typical arrangement of authoritative develops for SIS achievement.

In addition, the proof from past examinations showed that exploration concentrated on the connection between firm-wide hierarchical angles and SIS achievement is constrained. The most shortcoming of these examinations was that they didn't see association as a heap of exercises, assets, resources, and procedures. In rundown, there isn't any extensive investigation of authoritative side of the SIS achievement.

Scientists trust that asset based perspective on the firm (RBV) can more readily fill this hole by thinking about the firm as a lot of assets and abilities. In a decades ago, the RBV hypothesis has increased expanding strength in the vital administration field and perspectives association as a heap of assets (Clegg, 1989). One of the primary ideas presented by RBV point of view in IS field IS ability (Delone & McLean, 2003). IS ability is a perplexing gathering of IT-related assets, information and aptitudes rehearsed through hierarchical procedures and enable the firm to use IS/IT resources for wanted targets (DeLone & McLean, 1992).

In this manner the key mastermind should most likely output the outer condition just as acquiring inside operational data. For example,(Devaraj & Kohli, 2003). featured the criticalness of utilizing center supervisors inside the key detailing process. It was declared that methodologies figured with learning from center administration and other significant people inside an association, instead of simply the key scholar are probably going to be better as thought is given than both data viewing what activities are required just as whether the moves to be made are operationally conceivable as far as assets such as staff and materials. This was exemplified by (Clegg, 1989) who found that limit spanners which speak to people who perform jobs including the board, providers and clients are a significant wellspring of data. This is because of these people approaching important outer data that may help basic leadership.

So as to help a vital mastermind's "frameworks considering" (Devaraj & Kohli, 2003). presented the idea of a methodology map that "gives a visual portrayal of an organization's basic destinations". The guide enables the vital mastermind to adjust any choices made with those of the organization's goals just as knowing about worker capabilities and innovation that will help/prevent the execution of the choice. With a perspective on a system map (recognizing the aggregate parts in the association), senior administration can see how actualizing a vital choice on one piece of the association may affect another. In this manner, as per this methodology, successful vital reasoning requires a comprehension of the interrelationships and between conditions of each piece of the association (Bussen & Myers, 1997) and ought to be a competency found in great key leaders. Anyway, inquire about with respect to the skills required for vital reasoning and basic leadership has been meagre, in spite of the fact that the significance of recognizing such capabilities is recognized in the

writing. As (Dwivedi et al., 2013) contended a comprehension of vital reasoning would profit by an examination concerning the attributes of an individual key scholar just as the elements and procedures that happen inside the hierarchical setting.

Strategic Decisions Effectiveness

Understanding key reasoning and basic leadership abilities has turned out to be significant as research has appeared great key capabilities are related with great hierarchical execution (Dwivedi et al., 2011). . In any case, there is no understanding, inside the writing, concerning what these abilities are. As indicated by (Clegg, 1989), strategists can be seen as specific or remarkable individuals, who set the bearings, settle on essential choices and support their adherents. Little consideration has been coordinated towards examining abilities that make them specific or extraordinary individuals. The significance of distinguishing such abilities was sketched out by (Bruque et al.,2008) who contends that "on the off chance that we need to clarify why associations do what they do, or, thusly, why they play out the manner in which they do, we should contemplate top administrators", who speak to vital masterminds and leaders, and the skills they have.

A competency is an aptitude that an individual and therefore the association has that empowers it to perform exercises (Clegg, 1989). Competency based key administration is the conviction that a few attributes and practices are shown all the more reliably by strategists which can be recognized, instructed and surveyed (Delone & McLean, 2003). Hence, the idea of center skills (Burton-Jones, & Gallivan, 2007) might be a valuable structure evaluating how vital masterminds make decisions that sway on the fate of the association. (Dwivedi et al., 2013). trusted that the capacity of those in any area to think deliberately is bound by the edges of reference with which they are most natural: the presumptions, convictions and collected information of a calling or foundation. In its broadest sense, "competency" alludes to the total of encounters and information, aptitudes, characteristics, parts of mental self view or social job, qualities and demeanors a strategist has obtained amid his or her lifetime (Bruque et al., 2008). It depends on past involvement as far as what has been effective and what has not. This was first advanced by (Cerpa & Verner, 2009) in his original work on the intelligent expert. It is contended that experts apply formally learned and authority information to circumstances and create collections or answers for troublesome issues. The fundamental ability would be reflection where with each experience a vital chief would build up their insight into what will and what won't work.Research has been directed to distinguish the center abilities required to have the capacity to think deliberately and settle on key choices. (Delone & McLean, 2003) recognized six groups of capabilities, which comprise of specialized abilities; business skills; learning the executives skills; administration capabilities; social skills and intrapersonal capabilities. Be that as it may, inside this arrangement of abilities there is an absence of reference to basic leadership, which is a fundamental part of the strategist's job and one that guides the association into what's to come. It is, in this manner, simpler to fathom the center capabilities into two worldwide skills; considering and basic leadership.

One component that has turned out to be clear in the administration writing is that choices are impacted by a person's convictions and qualities. From a mental point of view, (Burton-Jones, & Gallivan, 2007) characterized values as "alluring states, items, objectives or practices rising above explicit circumstances and connected as regularizing guidelines to pass judgment and to pick among elective methods of conduct". This definition features two significant capacities. In the first place, they are suffering and rise above circumstances; qualities can give rationality and a feeling of direction to a person's conduct. Second, since they are regulating principles esteems can frame the reason for creating practices that adjust to the necessities of gatherings or bigger social units (Clegg, 1989).

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Qualities fill in as solid casual administrative aides when deciding, and impact subjective procedures, for example, administrative insight. For instance, values determine methods of conduct that are socially adequate and fill in as a regularizing administrative guide for individual specialists (Caseley, 2004) and they have a long convention of shaping, coordinating and managing human conduct and basic leadership all through associations (Cerpa & Verner, 2009). (Bunke et al., 2013) suggested that vital decisions/basic leadership are an impression of top administrators' subjective base (formed to a great extent through foundation experience and qualities). (Caseley, 2004) contend that choices are regularly sifted through frames of mind, convictions and qualities; poor basic leadership happens when the separating of the data clashes with individual observations and qualities and results in poor evaluation. These qualities are placed to saliently affect key decision through a procedure known as conduct directing (Bignell & Fortune, 1984) whereby key leaders' qualities decide decision and their choice of proper vital activity. For instance, (Bunker et al., 2007) found from an investigation of 70 supervisors in 13 spas that their subjective styles and their method for handling data affected procedures they liked. Furthermore, values straightforwardly influenced decision through a procedure of "perceptual screening" which is a forming of the vital leader's restricted perspective on the association and its condition. As has been found inside the writing, when looked with a difficulty, a key leader regularly, yet not generally, depends without anyone else point of view of technique and how it identifies with the association and nature (DeLone & McLean, 1992). Hence, technique is connected to a strategist's perspective on how the association ought to work and capacity (Caseley, 2004) and can influence basic leadership. Given that administrative perception impacts basic leadership and aggressive methodologies (Bunke et al., 2013), the subjective parts of strategists is critical to our comprehension of how focused associations are created. The psychological model sees chiefs as attempting to create an all out perspective on the earth, which depends on inadequate information (Devaraj & Kohli, 2003). . Strategists attempt to disentangle the inadequate data they have dependent on their past experience and claim intellectual styles. In this way any choices made would be made dependent on the strategist's qualities, convictions and experience, which at last could confine the decisions that they make. Basically then qualities fill in as diagrams or establishments for deciding, taking care of issues and settling clashes. It is the point at which these qualities become a block to settling on the choice that issues emerge. Each venture is driven by its pioneers' individual and aggregate qualities, regardless of whether these qualities are deliberately comprehended, or unknowingly compelling, spoken or implicit, composed or unrecorded.

Conclusion

In short, strategists endeavour to improve the fragmented data they have dependent on their past experience and claim intellectual styles. In this way any choices made would be made dependent on the strategist's qualities, convictions and experience, which at last could confine the decisions that they make. Basically then qualities fill in as outlines or establishments for deciding, tackling issues and settling clashes. It is the point at which these qualities become an obstruction to settling on the choice that issues emerge. Each venture is driven by its pioneers' individual and aggregate qualities, regardless of whether these qualities are intentionally comprehended, or unknowingly persuasive, spoken or implicit, composed or unrecorded. Notwithstanding, a strategist's qualities limit their field of vision, influence their particular discernment, impact their elucidation of data and mirror the decisions that they make. This is because of limited judiciousness whereby people settle on choices dependent on a standard guideline approach, whereby sound estimations are settled on and choices give off an impression of being in their very own best interests.It is a programmed pre-cognizant procedure that is hard to change. It is fundamental,

consequently, for strategists to see how their duties to the errand and obligations tie them to extraordinary qualities and purposes just as how their feeling of importance and incorporation is put into the strategist's job. Notwithstanding, it isn't simply close to home estimations that can affect the vital course of the association.

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A SURVEY OF LITERATURE REVIEW ON BANK PREFORMANCE

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Abstract: *This study analyses existing literature review studies on banking sector performance. Specially, this research aim is to identify topics of interest and development niche for this vast field. The paper presents a content analyses of 14 literature review on banking sector performance studies, selected using clear and transparency methodology. The content analysis of the papers identified that themes are diverse: banking performance and efficiency analysed using the DEA (Data Envelope Analysis) method, banking efficiency and risk, banking efficiency and competition, mobile banking and bank profitability. Based on selected papers this study identified that in recent years number of systematic literature revie studies increase, in the same time traditional literature review are decreasing.*

Keywords: *Bank; Performance; Literature review*

JEL Classification: *G21; L25*

1.**Introduction**

The issue of banking performance is complex and delicate. In the context of severe competition and the presence of multiple risks, banking management has the responsibility of continuous analysis and ongoing assessment of behavior. Banking performance is a topic of great interest for the banking environment, extremely affected by the financial crisis. The banking environment, through its extrinsic financing function, in crisis situations played the role of shock receiver and stability provider for economic agents. The phenomenon of economic crisis has aroused the interest of researchers who have focused on studies on profitability analysis, influencing factors, as well as predictability models.

The purpose of this systematic literature review is to create a well-defined picture of existing studies in the field of banking performance. This research should answer the following questions:
- ➢ Topics of interest in this vast field?
- ➢ What are the data that formed the basis of the case studies of the research in the field?
- ➢ What are the limits of research?
- ➢ What are the questions, the hypotheses of the existing studies in correlation with the results?

Starting from these questions, we will develop a clear, transparent and reasoned methodology in search of studies relevant to our research.

2. Search strategy used

The first step of our research will be the search for studies of literature review in the field of banking performance in order to analyze and present existing studies, as well as their methodology. For this we used the platform Web of Science - Core Collection, InCites Journal Citation Reports, Derwent Innovations Index, Clarivate Analytics and we will do the search in English. This database allows an advanced search, so we searched all publications with the words: Bank next to Performance or Bank next to Profitability Bank next

to efficiency and review or survey or going on with studies. Only publications in the field of social sciences, for period 2000-2020, were selected.

3. Sample of studies

Based on the search criteria specified above, we obtained a sample of 16 studies. Below we can see the detail of the sample of studies by years, as well as the number of citations related to the studies.
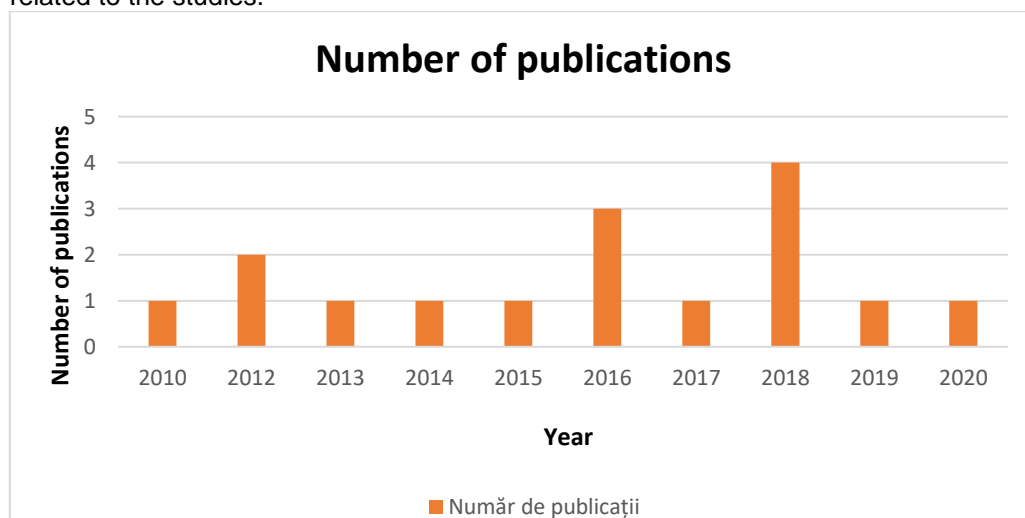
Figure 1: Number of publications presented per year
Source: prepared by the author
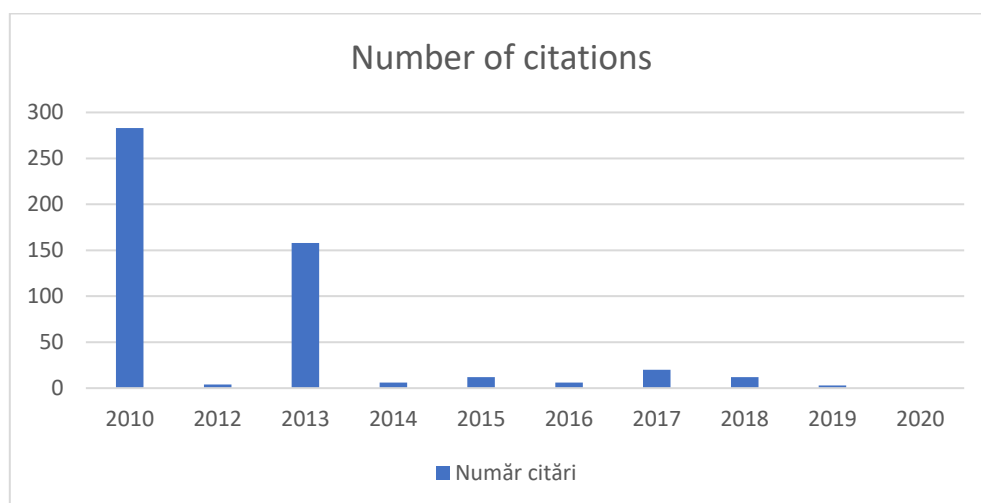
Figure 2: Number of citations of studied publications presented by years
Source: prepared by the author

From the selected sample were excluded at the time of content analysis 2 studies: Oino, I. (2018) Sheikholeslami, M. & Farkhodovich, O. F. (2012) due the fact that these studies are not a literature review study.
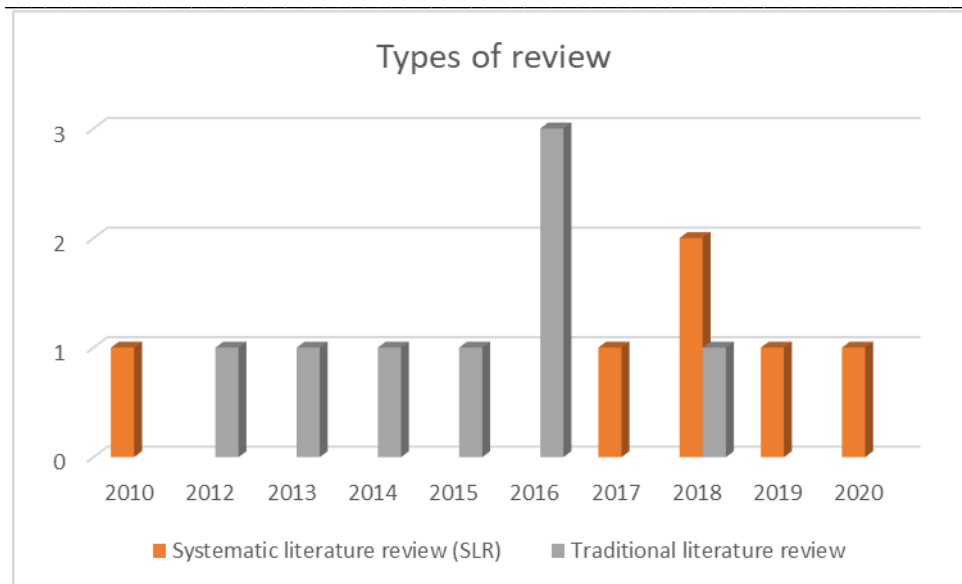
Figure 2: Types of literature reviews in analyzed sample
Source: prepared by the author

In the figure above, based on the studied works, we notice a smooth transition from the traditional literature review to the systematic literature review, in the last years 2017-2020 predominating studies based on the systematic literature review.
We must mention that our sample is a limited one due to the fact that we performed the search in a single database, but from our point of view it is a relevant one, presenting the various topics on which literature reviews were performed as well as the fact that presents the evolution of this concept from traditional to systematic. In none of the studied works is the literature on banking performance and accounting reviewed.

3. Content Analysis
4.

Autor	Article search criteria, keywords	Number of publications	Period	Literature review type	Conclusions
(Ahmad et al. 2020)	Profitability, Effect of Financial Ratio, Capital adequacy ratio (CAR), Non performing loan (NPL), Loan to deposit ratio (LDR), and Operating income operating costs (BOPO)	1996 of which 100 analyzed as content	1985-2018	Systematic literature review (SLR)	It presents a vast sample of specialized works, based on clear selection criteria. The analysis of the content of the first 100 works selected based on the number of citations revealed five basic themes: determinants, model and methods, ownership, financial crises and economies of scale. This study finds that the Journal of Banking & Finance is the leading journal in terms of number of publications and citations. The most prolific author is Allen Berger based on the dominance factor and the total number of citations. And the paper with the most citations is "Problem loans and cost efficiency in commercial banks" by Berger and DeYoung (1997).
(Andesfa and	Profitability, Effect of Financial Ratio,	26	2000-2017	Systematic literature	Based only on specialized studies, it is concluded that the Capital Adequacy

Autor	Article search criteria, keywords	Number of publications	Period	Literature review type	Conclusions
Masdupi 2018)	Capital adequacy ratio (CAR), Non performing loan (NPL), Loan to deposit ratio (LDR), and Operating income operating costs (BOPO)			review (SLR)	Ratio (CAR) and the Loan to Deposit Ratio (LDR) affect bank profitability.
(Banerjee 2012)	Not specified	Not specified	Not specified	Traditional literature review	The paper examines transnational cross-country studies on banking efficiency in the new Member States of the European Union (EU) and examines the relative efficiency ratings of each country. Different techniques and concepts of efficiency give different results for efficiency rankings, but some common points are visible. The Czech banking system is among the highest in terms of technical efficiency and profit, but the lowest in terms of cost efficiency. Banks in Slovenia and Estonia are among the most cost-effective.
(Bhatia et al. 2018)	efficiency; bank efficiency; productivity; bank productivity; parametric and bank efficiency; productivity and banks; parametric and bank productivity; non-parametric and bank efficiency and productivity; semi parametric; bank efficiency and productivity; SFA and banking; and DEA and banking.	103	1998-2017	Systematic literature review (SLR)	This study presents a systematic review of the literature in the context of bank efficiency and productivity. The selected research papers were coded according to their key objectives and were segregated into 11 themes: branch, comparison, consolidation and extension, banking regulation and deregulation, environment, input-output, methodological advances, non-traditional activities. , risk, stock performance and more.
(Dalwai, Basiruddin, and Rasid 2015)	Not specified	Not specified	Not specified	Traditional literature review	The paper analyzes the different empirical and theoretical contributions in establishing the relationship between corporate governance and banking performance.
(de Abreu, Kimura, and Sobreiro 2019)	Banking efficiency; efficiency in banking; technical efficiency; bank	87	2011-2017	Systematic literature review.	Analyzes and presents current research on banking efficiency in major finance journals. Classify studies based on study type, approach, objectives and methodology. Applying Lotka's law determines that the field of banking efficiency has a low productivity, not having a significant number of prolific authors or specialized institutions.
(Fernandes et al. 2018)	Not specified	Not specified	Not specified	Traditional literature review	It presents a review of the theoretical and empirical literature on the relationship between corporate governance and banking performance, providing a comprehensive understanding of existing research. It also touches on the issue of

Autor	Article search criteria, keywords	Number of publications	Period	Literature review type	Conclusions
					the board and its impact on banking performance.
(Fethi and Pasiouras 2010)	bank efficiency, bank and data envelopment analysis, bank performance, bank and neural networks, bank and artificial intelligence, bank and operational (or operations) re-search	196	1998-2009	Systematic literature review.	This study presents a comprehensive review of196 studies using operational research techniques (O.R.) and artificial intelligence techniques (A.I.) in assessing banking performance.
(Jia 2016)	Not specified	20	Not specified	Traditional literature review	This study examines twenty research articles on banking efficiency in China.
(Kumar and Gulati 2014)	Not specified	Not specified	Not specified	Traditional literature review	This chapter presents a survey of the empirical literature on bank efficiency. It is concluded that the bank's efficiency score may differ completely due to the measurement technique and there is virtually no consensus on the preferred method of estimating the bank's efficiency.
(Paradi and Zhu 2013)	Not specified	80	Din 1985	Traditional literature review	This study analyzes 80 researches on banking performance and efficiency analyzed using the DEA (data envelope analysis) method published in 24 countries / areas that focus mainly on bank branches.
(Tam and Oliviera 2017)	mobile banking; m-banking	64	2002-2016	Systematic literature review (SLR)	Analyzes and presents studies on mobile-banking and banking performance. The obtained results indicate that the subject of mobile-banking implementation and behavioral intent dominate most research, but we find very few studies on post-implementation.
(Tan 2016b)	Not specified	Not specified	Not specified	Traditional literature review	This chapter mainly reviews the empirical literature on banking efficiency and competition. Study the two aspects at the international level, then limiting yourself to one country - China. Finally, this chapter examines relevant theories and studies on the impact of competition on banking efficiency.
(Tan 2016a)	Not specified	Not specified	Not specified	Traditional literature review	This chapter studies the literature on banking efficiency and risk, presenting relevant aspects for each of these 2 areas as well as the close connection between them.

Table no. 1 Analysis of the review works of the specialized literature on bank profitability.
Source: prepared by the author

According to the table above, we notice that most of the studied works present a traditional literature review, and it does not present clear criteria regarding the selection criteria of the analyzed literature. At the same time we notice that in recent years number of systematic literature revie studies increase, in the same time traditional literature review are decreasing.

The topics on which these empirical studies were conducted are diverse: banking performance and efficiency analyzed using the DEA (Data Envelope Analysis) method, banking efficiency and risk, banking efficiency and competition, mobile banking and bank profitability. Many of the studies analyzed refer to the banking system from China.

Analyzing the existing literature review on bank performance topic, it is surprising that none of the papers address the topic of accounting and bank performance.

5. Conclusions

The purpose of this study is to create a well-defined picture of existing studies in the field of banking performance. Analyzing sample of selected studies, we identified that the topics for existing literature review studies are diverse: banking performance and efficiency analyzed using the DEA method, banking efficiency and risk, banking efficiency and competition, mobile banking and bank profitability. Most of the studies refer to the banking system from China. We must mention that our sample is a limited one due to the fact that we performed the search in a single database, but from our point of view it is a relevant one, presenting the various topics on which literature reviews were performed as well as the fact that presents the evolution of this concept from traditional to systematic. In none of the studied works is the literature on banking performance and accounting reviewed.

6. Acknowledgements

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FINANCIAL AND OPERATING RISK ANALYSIS OF TWO ROMANIAN-HUNGARIAN BORDER COUNTIES

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Abstract: The study analyzes the risk of companies selected from two Romanian-Hungarian border counties (Bihor and Hajdú-Bihar counties) by the degree of operational and financial leverage ratios. A total of 1,674 companies from the two counties were included in the analysis, in approximately half and half proportions. In the study, operating, financial and combined leverage ratios are used for risk analysis. Because of the large variance of the ratios, outliers were filtered out. The filtering was based on the degree of the combined leverage ratio, which resulted in 107 companies excluded. In the analysis of sectors, there are significant differences in DOL ratio values between counties. For the DFL indicator, the values are much more balanced. There are also larger differences for DCL, which are likely to be caused by DOL values. The analysis showed no statistically significant difference in leverage ratios between the total county data or the sector-disaggregated county data. The analysis also suggested that some accounting reports may contain manipulations but that further investigations are needed to substantiate them adequately.

Keywords: corporate risk; degree of operating leverage; degree of financial leverage; comparative financial analysis

JEL Classification: G32, M10

1. Introduction

Risk or uncertainty occurs when an event has over one output, and we cannot know the outcome of the output with certainty, it can only make probable. With the economic systems, we do not have accurate information or knowledge about the extent and direction of the change concerning a future event that causes the risk. Different methods can usually estimate the extent of the change. Determining the direction of change implies more significant uncertainty and risk.

Nowadays, suitable risk identification and management are playing an essential role in corporate governance. There are simpler and more complex methods to determine risk, ranging from financial ratios to simpler and more complex statistical methods to various simulation models. The company's fundamental financial goal is to create value, for which the company must generate income. In order for a company to increase its value, it must exceed the cost of capital compared to income. Achieving the expected income level can be influenced by many factors, one of the most important of which is fixed costs. The development of fixed costs is often referred to as leverage because fixed costs act as a pivot point for a company's income. This means that leverage can affect corporate income in both positive and negative directions.

Leverage, therefore, means the use of fixed costs in a company's cost structure. Fixed costs that are operating costs (such as depreciation or rent) create operating leverage. Financial fixed costs (such as interest expense) create financial leverage. Thus, in a corporate context, leverage refers to the effect of fixed costs on income, which can have an increasing or a

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decreasing effect, and these effects can be very significant in both directions due to leverage.

In this study, we examine operational and financial leverage by using the financial data of companies from two neighbouring Romanian-Hungarian border counties, Bihor and Hajdú-Bihar counties. In the course of the research, analyzes were performed to answer the following hypotheses:

1. There is no statistically significant difference between the two counties examined in terms of operational and financial risks.
2. In terms of operational and financial risks, the selected sectors differ statistically significantly, but there are no differences between the counties in this respect either.
3. Financial statements give a reliable and fair view of businesses and, as a result, provide a sound basis for identifying and analyzing corporate risks.

2. Literature review

The concept of degree of operating leverage (DOL) and degree of financial leverage (DFL) has long been found in the international literature. In his 1995 study, *Lord* examined the relationship between DOL and the break-even point. He found that the change in both fixed cost and the variable cost was positively related to the change in DOL. It also raised three alternative calculation possibilities for calculating the DOL, which is still known today, but no data are available for an external analyst to calculate two of them. *Darrat and Mukherjee* wrote in 1995 that the value of combined leverage (DCL) is not only a function of operational (DOL) and financial leverage (DFL), but other risk factors may play a role in the evolution of DCL. It also assumes that there should be a negative correlation between DOL and DFL.

Chen et al. (2019) was established that DOL has a first-order impact on corporate policy and performance. DOL can be positively related to profitability. If sales are increasing and the fixed costs grow less than sales, higher operating leverage causes higher profitability.

Sarkar (2020) examined the relationship between DOL and DFL. He noted that the two indicators do not always behave as substitutes for each other, as was previously stated in the literature. According to him, the relationship between the two variables is very complex, so the relationship can only be explored appropriately if relevant conditions are provided. This would be necessary because it can be seen from the previous literature that researchers found a negative and positive correlation between DOL and DFL at one time. He also suggests that indicators could be used to determine the risk of bankruptcy.

Tao et al. (2020) analyzed the relationship between DOL, profitability, and DFL in their research. DOL and profitability were found to be positively related. They found that DOL increases profitability and has a reducing effect on the company's optimal capital structure. Therefore, in their view, DOL is negatively related to profitability and DFL. DOL is thought to be the main reason for the reverse relationship between profitability and DFL when a company's revenue declines. It was also noted that the company's risk of bankruptcy might be related to the higher DOL. Because of the above, DOL is considered a critical indicator.

In his article, *Sarkar* (2018) presents the derivation of an optimal DOL value for a company. It also notes that the choice of DOL is of great importance because it can also affect a company's level of risk and operational and financial performance. To determine the optimal value of DOL, use a real options model that can consider managerial decision flexibility. He also points out that several factors can affect DOL.

Ekhal (2019) examined the relationship between financial leverage and business risk. The study used an alternative replacement of business risk, separated from the effects of financial leverage. This replacement was the cost of capital of a firm that had only equity. This construction shows a positive relationship between business risk and financial leverage.

Stelk et al. (2018) found that the traditional accounting measure of DFL gives statistically different estimates compared to estimates based on the elasticity measure of DFL.

Cao (2015) examined that adjusted cost, DOL and DFL are affect value premium in his study. The author found that DFL, supported by adjusted cost, significantly impacts value premium, while DOL does not affect it significantly.

Zia ul haq et al. (2020) provide empirical evidence by investigating the relationships of DFL and DOL with stock returns, the book value/market value ratio on non-financial sector firms of the Pakistan stock exchange. Their research finds the significant and direct effect of DOL on stock returns and the book value to market value ratio, respectively.

3. Data and methodology

3.1. Database of the research

The database was collected from the balance sheets and the income statements of examined companies which were downloaded from the EMIS database. EMIS contains several sectoral classifications. As the study analyzes companies from two countries, the NAICS code (North American Industry Classification System) was used to classify companies by sector. The distribution of the companies of the two counties according to the NAICS code is shown in Table 1. The data selection criteria included that the company's total revenue should reach EUR 100 thousand and the total assets of the company should reach EUR 50 thousand in each of the years examined (2014-2018). Companies also had to have financial statements every year. 839 companies met the specified conditions in Bihor county, while 835 companies in Hajdú-Bihar county. Table 1 shows that nearly the same number of companies from the two neighbouring counties were included in the study. Sectors in which the number of companies reached 10 in both counties were compared per county. In Table 1, the sectors that meet the previous condition are marked in grey colour. It can be seen in the table that nine sectors met the condition, which is 94.04% of companies in the database in Bihor County and 90.54% in Hajdú-Bihar County.

Table 1: The distribution of the companies of the two counties according to the NAICS code

NAIC code	Sector name	Bihor County	Hajdú-Bihar County
11	Agriculture, Forestry, Fishing and Hunting	61	69
22	Utilities	6	12
23	Construction	61	99
31	Manufacturing	202	149
42	Wholesale Trade	198	182
44	Retail Trade	94	146
48	Transportation and Warehousing	124	47
51	Information	9	11
53	Real Estate Rental and Leasing	9	30
54	Professional, Scientific, and Technical Services	12	19
56	Administrative and Support and Waste Management and Remediation Services	22	28
62	Health Care and Social Assistance	7	9
71	Arts, Entertainment, and Recreation	10	5
72	Accommodation and Food Services	15	17

81	Other Services (except Public Administration)	9	12
County total		839	835

Source: calculated by R statistics system, edited by authors

3.2. Methods using for research

3.2.1. Calculation of degrees of leverages and presentation of their relationships
The degree of operational leverage (DOL) and financial leverage (DFL) was used to measure corporate risk. Calculations were performed using formulas (1), (2) and (3). Using formulas (1) and (2) was necessary because no data (e.g., fixed and variable costs) were available to apply direct formulas. The calculation and interpretation of the degree of operational and financial leverage are dealt with in almost all corporate finance and financial management books, such as Brigham and Davis (2019), Wahlen et al. (2011), Moyer et al. (2012), Parrino et al. (2012), Keown et al. (2014).

$$DOL = \frac{\%\Delta \text{ in EBIT}}{\%\Delta \text{ in Sales}} \tag{1}$$

$$DFL = \frac{\%\Delta \text{ in Net profit}}{\%\Delta \text{ in EBIT}} \tag{2}$$

$$DCL = DOL * DFL = \frac{\%\Delta \text{ in Net profit}}{\%\Delta \text{ in Sales}} \tag{3}$$

3.2.2. Methods for comparison
Pair-wise t-test, analysis of variance (ANOVA), and multivariate analysis of variance (MANOVA) were used to compare counties and companies. The pair-wise t-test was used when two data sets were compared, such as comparing counties per ratios or comparing sectors per ratios. Analysis of variance was used when comparing sectors by a ratio in a given county. Multivariate analysis of variance was needed to compare counties or sectors by considering multiple ratios simultaneously.

4. Results of the research

4.1. General statistical analysis of the database
A pair-wise t-test was performed by county and by indicators (DOL, DFL, DCL) to determine that there is a statistically significant difference between the data of four years, which showed that the years did not differ. As no statistically significant difference can be detected between the yearly data of the ratios examined, the years' average is used in the analysis.
The company data is usually characterized by outliers that can worsen the analysis. Because the research compares the data of the counties and their selected sectors and draws conclusions concerning them, the analysis must be performed on relatively homogeneous data. First, the DCL is examined and compared because it is the product of the DOL and the DFL, so it can better indicate outliers. Table 2 presents the main statistical characteristics of the DCL indicator by county. The minimum and maximum values in the table clearly show that there are outliers in both the negative and positive directions that need to be considered. A frequency distribution table for the DCL ratio will also be prepared to show the number of outliers in both directions.

Table 2: Main statistical characteristics of the DCL ratio by the county before filtering outliers

Statistical indicators	Bihor County	Hajdú-Bihar County
Number of companies	839	835
Minimum	-5,708.64	-7,284.52
Quartile 1	-1.74	-1.19
Median	1.83	2.36
Quartile 3	7.15	8.22
Maximum	1,403.06	2,271.76
IQR	8.89	9.41
Mean	-0.58	5.58
Standard deviation	256.03	290.87
CV%	-44,459.56%	5,215.00%
Skewness	-14.83	-18.03
Kurtosis	322.82	476.41

Source: calculated by R statistics system, edited by authors

Further evaluating Table 2 shows that the average DCL value of the companies of Bihor county is negative, while that of Hajdú-Bihar counties is positive. The standard deviation of the DCL ratio values of the companies in the two counties does not differ significantly, but since the average of Bihor county is much smaller than Hajdú-Bihar county, the value of the coefficient of variation is very high in Bihor county. Based on the skewness and kurtosis values, it can also be seen that the county databases differ from the normal distribution before filtering.

Table 3 shows the distribution of DCL ratio values. The distribution of indicator values in the two counties is very similar that can be seen from the table. It can be read out from the table that if values less than -100 and over 100 were excluded from the analysis, it would reduce the number of companies examined by 5.72% (48 firms) in Bihor County and by 7.07% in Hajdú-Bihar County (59 firms). So for the entire database, 107 companies were omitted, which is 6.39% of all companies.

Table 3: Distribution of DCL ratio values by county

Intervals		Bihor County		Hajdú-Bihar County	
lower limit	upper limit	frequency	%	frequency	%
-1000		2	0.24%	2	0.24%
-1000	-500	2	0.24%	2	0.24%
-500	-300	5	0.60%	4	0.48%
-300	-100	13	1.55%	14	1.68%
-100	-50	20	2.38%	12	1.44%
-50	0	232	27.65%	226	27.07%
0	50	512	61.03%	513	61.44%
50	100	27	3.22%	25	2.99%
100	300	14	1.67%	23	2.75%
300	500	4	0.48%	5	0.60%
500	1000	4	0.48%	5	0.60%
1000		4	0.48%	4	0.48%
Total		839	100.00%	835	100.00%

Source: calculated by R statistics system, edited by authors

The main statistical characteristics of the database after filtering out the outliers are given in Table 4. The values in Table 4 have changed significantly from the values in Table 2. There was a particularly significant change in the values of standard deviations and coefficients of variation. The analyzes were performed based on the filtered database.

Table 4: Main statistical characteristics of the DCL ratio by the county after filtering outliers

Statistical indicators	Bihor County	Hajdú-Bihar County
Number of companies	791	776
Minimum	-97.99	-92.88
1. Quartile	-1.47	-0.98
Median	1.80	2.23
3. Quartile	6.60	6.91
Maximum	98.88	95.22
IQR	8.07	7.89
Mean	2.84	3.70
Standard deviation	21.59	20.24
CV%	759.47%	547.32%
Skewness	0.14	0.08
Kurtosis	6.82	6.89

Source: calculated by R statistics system, edited by authors

4.2. Comparison of two counties

The comparison of the DOL, DFL and DCL ratios for the two counties was presented in Table 5. Although the counties' average values differ, no statistically significant difference can be detected between them. The last row of the table contains the p-value of MANOVA, where two counties were compared using the three indicators together. The results of the t-test and the MANOVA verified Hypothesis 1 that is there is no statistically significant difference between the two counties examined in terms of operational and financial risks.

Table 5: Comparison of companies' leverage ratios by county

Ratios	Average values of Bihor County	Average values of Hajdú-Bihar County	p-value
DOL	-3,781	4,984	17,89%
DFL	0,989	1,280	70,30%
DCL	2,843	3,697	41,90%
DOL, DFL, DCL			39,93%

Source: calculated by R statistics system, edited by authors

4.2. Comparison of the sectors

A comparison of DOL, DFL, and DCL indicators by sector and county also showed no statistically significant difference between counties even when they are broken down into sectors (Table 6-8).

Table 6: Comparison of companies' DOL ratios by sector and by county

Sector code	Sector name	Average values of Bihor County	Average values of Hajdú-Bihar County	p-value
11	Agriculture, Forestry, Fishing and Hunting	5,024	6,538	90,06%
23	Construction	3,445	5,261	68,88%

31	Manufacturing	0,820	1,344	97,37%
42	Wholesale Trade	0,655	15,152	18,49%
44	Retail Trade	329,409	3,443	39,20%
48	Transportation and Warehousing	-69,793	-0,660	33,14%
54	Professional, Scientific, and Technical Services	5,981	3,694	74,50%
56	Administrative and Support and Waste Management and Remediation Services	-2,102	9,387	46,53%
72	Accommodation and Food Services	-2,414	1,656	34,49%

Source: calculated by R statistics system, edited by authors

Table 6 shows the results of the sector-by-sector comparison of counties for DOL. The table shows that the most extreme average DOL values are found in sectors 44 and 48 in Bihor County. The average values of Hajdú-Bihar county are more balanced.

The DFL mean values in Table 7 show relatively balanced values in both counties. From a comparison of Tables 6 and 7, it can be concluded that firms pay more attention to financial risks than to operating risks. At the same time, it would also be important to pay more attention to operating leverage, as it can also have a significant impact on a company's risk level and financial performance, as found in Sarkar's (2018) study.

Table 7: Comparison of companies' DFL ratios by sector and by county

Sector code	Sector name	Average values of Bihor County	Average values of Hajdú-Bihar County	p-value
11	Agriculture, Forestry, Fishing and Hunting	1,304	1,509	68,15%
23	Construction	1,583	0,678	17,49%
31	Manufacturing	3,116	2,297	62,21%
42	Wholesale Trade	1,076	1,287	74,90%
44	Retail Trade	1,317	0,960	58,36%
48	Transportation and Warehousing	-0,519	1,160	70,61%
54	Professional, Scientific, and Technical Services	1,459	0,953	25,75%
56	Administrative and Support and Waste Management and Remediation Services	1,852	1,337	36,93%
72	Accommodation and Food Services	0,889	3,269	30,56%

Source: calculated by R statistics system, edited by authors

The DCL averages in Table 8 also differ significantly across the sectors studied for both counties. The difference is most likely due to differences in DOL. The sectors were also compared within the counties, but in this case, no statistically significant difference could be detected with the analysis of variance. In Bihor county, the significance level p was 69.6%, and in Hajdú-Bihar county, 83.7%.

The first half of Hypothesis 2 should be rejected based on the results because the examined sectors do not differ statistically significantly. However, the second half of Hypothesis 2 is

acceptable because no significant difference can be detected between the counties by sectors.

Table 8: Comparison of companies' DCL ratios by sector and by county

Sector code	Sector name	Average values of Bihor County	Average values of Hajdú-Bihar County	p-value
11	Agriculture, Forestry, Fishing and Hunting	11,275	-104,933	27,78%
23	Construction	-2,719	5,872	18,26%
31	Manufacturing	16,940	11,119	70,71%
42	Wholesale Trade	-1,677	18,006	17,09%
44	Retail Trade	-50,914	22,766	25,16%
48	Transportation and Warehousing	11,688	-3,548	62,99%
54	Professional, Scientific, and Technical Services	9,721	5,461	62,02%
56	Administrative and Support and Waste Management and Remediation Services	-1,292	53,988	18,53%
72	Accommodation and Food Services	11,933	7,225	72,24%

Source: calculated by R statistics system, edited by authors

Correlation coefficients between leverage ratios and profitability ratios were also calculated during the analysis, but no weak correlation was detected. Of the correlation values got, the highest value in absolute value was 0.0951. Thus, there was no significant correlation between leverage ratios and profitability ratios for the companies examined.

5. Conclusions

Based on the leverage-based risk analysis of the companies of Bihor and Hajdú-Bihar counties, it can be stated that no statistically significant difference can be detected between the companies of the two counties according to the examined aspects. It can also be stated that companies in the two counties are likely to pay more attention to financial risks than to their operational risk. The latter may also mean that companies have more control over their indebtedness than their hedging revenues. It would also be important to note that the risk posed by operational leverage can lead to corporate bankruptcies in the same way as high financial risk.

Based on the analysis, considering the data in Table 2, the company accounts do not always reflect a reliable and fair view of the company's financial position. There may be a significant number of companies that may have been the financial statements manipulated. These manipulations can lead to inconsistencies between the ratios calculated from these data. Further investigations would be needed to substantiate this finding. However, in the analysis, they were expressed and calculated at a fixed cost using the basic formula of DOL, which highlighted significant inconsistencies. There were also negative values for the calculated values and some calculated values greater than the total costs calculated from the data.

Hypothesis 3 may be rejected because of the above, but it should be emphasized that separate studies would be needed to substantiate this fully.

It would be expedient to continue the study with other methods and other classifications to form a more substantiated picture of the risk situation of the examined counties and sectors.

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INVENTORY DECISION IN VUCA WORLD USING ECONOMIC LOGIC QUANTITY

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Abstract: *If ever the concept "VUCA" (Volatility, Uncertainty, Complexity, and Ambiguity) seemed appropriate to use, it is now. National and global companies experience the highest level of instability due to the Covid-19 pandemic, which is the classic example of a highly volatile, uncertain, complex, and ambiguous world. In this world, decision-makers have to face more challenges appealing to the VUCA Prime leadership approach: vision against volatility, understanding against uncertainty, clarity against complexity, and agility against ambiguity. Some of the ways through which managers can overcome the VUCA characteristics include: providing a shared vision as a criterion for all decisions to be made, identifying the reason for the decision problems and sharing the idea with the followers, going through the entire decision process, following steps in proper order, and developing quick solutions. In an inventory decision taken in a VUCA context, the above ways are possible if using fuzzy inventory methods dealing with volatility, uncertainty, complexity, and ambiguity. This paper aims to adapt a traditional inventory method, Economic Production Quantity (EPQ), to the challenges of the VUCA world, through the fuzzy logic system (FLS). To achieve the best solution for the decision problem in the shortest time possible, the managers can employ a conversion by using the computing platform MATLAB. There are some advantages of this conversion for these two methods, EPQ and FLS. Firstly, the transformation of EPQ in ELQ (Economic Logic Quantity) allows managers to formulate the decision problem, even if they cannot identify and measure precisely the EPQ parameters. Secondly, using FLS to solve ELQ provides the possibility to simulate more alternatives and generate the solution in the shortest amount of time. Thirdly, it allows the decision-makers to evaluate the impact of the solution provided by each simulation on the company's performance. Using these methods has the following primary limit: the problem formulation step depends on the managers' understanding ability and managing a large volume of information. Therefore, there may be a risk of obtaining a relevant solution for a decision problem if the decision-makers do not understand the cause of the problem or do not know how to organize and manage a large volume of information. This limit could be overcome by using AHP (Analytic Hierarchy Process), but this is the topic of further research.*

Keywords: *fuzzy logic system, economic production quantity, demand, cost, fuzzy inference, fuzzification, defuzzification.*

JEL Classification: *C53; C87; D24; M11.*

1. Introduction

The Economic Production Quantity is "a simple mathematical model to deal with inventory management issues in a production inventory system" (Viji and Karthikeyan, 2018). It is used to identify the optimal quantity to produce something in a production run. Also, it is used to measure the length of the production run, the reorder level, the average inventory, and the maximum inventory. This model has the following assumptions: the input variables are

known and constant, the demand is fully satisfied, and therefore, the model does not allow shortages. Also, in the EPQ model, a single product is considered and is delivered at a single time. These assumptions are relevant in an abstract world, but in the real world, and more specifically in a VUCA world, the EPQ model with these assumptions is less applicable. That is why many researchers have enhanced and expanded the EPQ model to increase their application by introducing the quality concept, possible backorders and shortages, imperfect items at a discounted price, the multiple-item possibility, and, more recently, fuzzy numbers. Using fuzzy numbers in the EPQ model firstly means to transform the crisp variables of traditional EPQ into fuzzy variables according to some rules defined by the decision problem. Secondly, it means to transform the fuzzy results of EPQ to crisp results. This transformation is possible through the Fuzzy Logic System (FLS), which is "a special rule-based system that uses fuzzy logic and contains fuzzy rules in its knowledge base. It also derives conclusions from the user inputs and the fuzzy inference rules to map numeric data into variable linguistic terms and to make fuzzy reasoning work" (Kaur and Kaur, 2009).

In this paper, the combination between traditional EPQ and SLF provides a new model of Fuzzy EPQ (FEPQ) that is called: Economic Logic Quantity (ELQ). This ELQ is a more useful method than EPQ when the inventory decision is taken in a VUCA world due to the following characteristics:

- The variables can be easily adapted to changes in the decision process through fuzzy numbers that are formulated on a platform called MATLAB. Using this platform, the decision-makers can simulate an infinite number of changes. This results in overcoming the volatility of VUCA.

- The model deals with vague information through fuzzy numbers. In an uncertain decision-making environment, managers cannot identify or estimate the correct value of each variable due to the lack of information. However, through fuzzy numbers, they can formulate decision variables in ranges or triangular and trapezoidal numbers, not only in real numbers. Also, through fuzzy numbers, the ambiguity of the decision process can be reduced.

- The model provides information about the risk that decision-makers should take when the input and output have certain values through the membership function of fuzzy numbers. This characteristic is very important in prediction, especially when the future is uncertain, because the managers will know if their prediction will be 100% achievable or not. Through this model, they will evaluate the impact of each level of feasibility on the future performance.

2. Short literature review

There are many articles and books that have used fuzzy logic or fuzzy numbers in the EPQ model. Lee and Yao (1998) fuzzified the production quantity in fuzzy triangular numbers for the first time. Lin and Yao (2000) used a trapezoidal fuzzy number for production quantity to solve the EPQ model. Hsieh (2002) analysed two cases of the FEPQ model (Fuzzy Economic Production Quantity), compared both cases to crisp EPQ and concluded that crisp EPQ is equivalent to one of the two cases. Chen and Chang (2008) developed a FEPQ model for imperfect production. Roy et al. (2009) analysed an EPQ model with imperfect items that could be remanufactured at the quality that satisfies the customers. Paul et al. (2014) formulated a model with imperfect quality. There are many other extensions of the fuzzified EPQ model: considering an investment for reducing holding cost and setup cost (Islam and Roy, 2006), multi-item production (Mandal and Roy, 2006), shifting in production (Zhaet al. al, 2009), formulating a model with intuitionistic numbers (Chakrabortty, 2013), considering multi-period production (De and Sana, 2014) and partial back-ordering and disruption (De and Mahata, 2019).

Despite these multiple extensions, only a single article proposes a FLS to obtain an optimal solution for the production system. Miret et. al (2018) formulated a FLS with three inputs: demand, cost, and lead time represented by fuzzy triangular numbers and trapezoidal fuzzy

numbers. The authors do not use all of the traditional EPQ inputs and thus could not compare the results of traditional EPQ and fuzzy EPQ.

This paper proposes a new model that uses the traditional formula of EPQ to obtain the variable values that fully belong to a fuzzy set or fuzzy number, to develop a FLS using EPQ inputs (demand, setup cost, holding cost, and production rate), and to compare the FLS output to traditional EPQ output. These steps leads to a new concept ELQ, which is the crisp solution for a Fuzzy EPQ, obtained using FLS.

3. Inventory decision using ELQ
3.1. Modelling ELQ through FLS and EPQ formula

ELQ is developed by using traditional EPQ inputs and formula in the first step of FLS formulation. The formula of EPQ is:

$$EPQ = \sqrt{\frac{2KD}{h(1-\frac{D}{P})}} \quad , \text{ where: } \begin{aligned} &K - \text{setup cost} \\ &D - \text{demand} \\ &h - \text{holding cost} \\ &P - \text{production rate} \end{aligned} \tag{1}$$

Considering this formula, the inputs variables of FLS are: setup cost, demand, holding cost, production rate and the output variable is: ELQ. These variables should be formulated in fuzzy numbers, in the first step of FLS, evaluated by a rule base, in the second step, and transformed in crisp values, in the third step. The three steps of Fuzzy Logic System structure are presented below.

A. The fuzzification step

The fuzzification step consists in converting each crisp input in fuzzy input that has a universe of discourse, a membership function and an associated linguistic term.

The first input variable is setup cost which is described by three linguistic terms: low, reasonable and high and is defined by Definition 1.

Definition 1: Let the discourse universe consists of the setup costs set $K = [K_L, K_H]$ and the set of rules $F(0,1)$ valid for all fuzzy subsets described by the linguistic terms. The fuzzy numbers: $K_l \in K$, described by linguistic term: "low", $K_r \in K$, described by linguistic term "reasonable" and $K_h \in K$, described by linguistic term: "high" are triangular fuzzy numbers of the form $k_l = (k_{l_a} \quad k_{l_b} \quad k_{l_c})$, $k_r = (k_{r_a} \quad k_{r_b} \quad k_{r_c})$ and $k_h = (k_{h_a} \quad k_{h_b} \quad k_{h_c})$, if their membership functions are defined by the following relation:

$$\mu_{kl,r,h}(x) = \begin{cases} 0, & k_{l,r,h_x} \leq k_{l,r,h_a}; \quad k_{l,r,h_x} \geq k_{l,r,h_c} \\ \dfrac{k_{l,r,h_x} - k_{l,r,h_a}}{k_{l,r,h_b} - k_{l,r,h_a}}, & k_{l,r,h_a} \leq k_{l,r,h_x} \leq k_{l,r,h_b} \\ \dfrac{k_{l,r,h_c} - k_{l,r,h_x}}{k_{l,r,h_c} - k_{l,r,h_b}}, & k_{l,r,h_b} \leq k_{l,r,h_x} \leq k_{l,r,h_c} \\ 1, & k_{l,r,h_x} = k_{l,r,h_b} \end{cases} \tag{2}$$

The graphical representation for this fuzzy numbers is illustrated in the following figure:
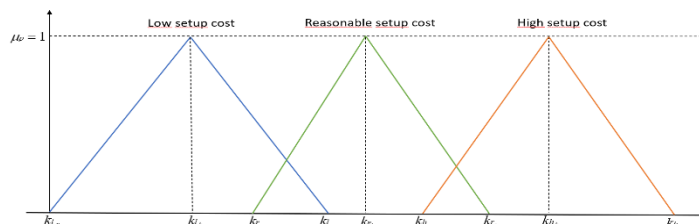
Figure Nr. 1: Setup costs and membership functions of the three setup costs

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The second input, demand is described, also, by three linguistic terms: low, medium and high and is defined by Definition 2.

Definition 2: Let the discourse universe consists of the setup costs set D = [D_L, D_H] and the set of rules F(0,1) valid for all fuzzy subsets described by the linguistic terms. The fuzzy numbers: $D_l \in D$, described by linguistic term: "low", $D_m \in D$, described by linguistic term "medium" and $D_h \in D$, described by linguistic term: "high" are triangular fuzzy numbers of the form $d_l = (d_{l_a} \quad d_{l_b} \quad d_{l_c})$, $d_m = (d_{m_a} \quad d_{m_b} \quad d_{m_c})$ and $d_h = (d_{h_a} \quad d_{h_b} \quad d_{h_c})$, if their membership functions are defined by the following relation:

$$\mu_{dl,m,h}(x) = \begin{cases} 0, & d_{l,m,h_x} \leq d_{l,m,h_a}; \quad d_{l,m,h_x} \geq d_{l,m,h_c} \\ \dfrac{d_{l,m,h_x} - d_{l,m,h_a}}{d_{l,m,h_b} - d_{l,m,h_a}}, & d_{l,m,h_a} \leq d_{l,m,h_x} \leq d_{l,m,h_b} \\ \dfrac{d_{l,m,h_c} - d_{l,m,h_x}}{d_{l,m,h_c} - d_{l,m,h_b}}, & d_{l,m,h_b} \leq d_{l,m,h_x} \leq d_{l,m,h_c} \\ 1, & d_{l,m,h_x} = d_{l,m,h_b} \end{cases} \qquad (3)$$

The graphical representation for this fuzzy numbers is illustrated in the following figure:
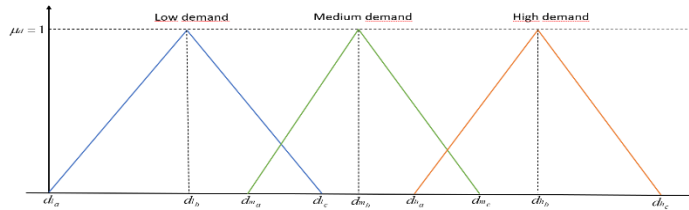
Figure Nr. 2: Demand and membership functions of the three categories of demand

As, setup cost, the holding cost, the third input variable, is described by the same linguistic terms: low reasonable and high and is defined by Definition 3.

Definition 3: Let the discourse universe consists of the setup costs set H = [H_L, H_H] and the set of rules F(0,1) valid for all fuzzy subsets described by the linguistic terms. The fuzzy numbers: $H_l \in H$, described by linguistic term: "low", $H_r \in H$, described by linguistic term "reasonable" and $H_h \in H$, described by linguistic term: "high" are triangular fuzzy numbers of the form $h_l = (h_{l_a} \quad h_{l_b} \quad h_{l_c})$, $h_r = (h_{r_a} \quad h_{r_b} \quad h_{r_c})$ and $h_h = (h_{h_a} \quad h_{h_b} \quad h_{h_c})$, if their membership functions are defined by the following relation:

$$\mu_{hl,r,h}(x) = \begin{cases} 0, & h_{l,r,h_x} \leq h_{l,r,h_a}; \quad h_{l,r,h_x} \geq h_{l,r,h_c} \\ \dfrac{h_{l,r,h_x} - h_{l,r,h_a}}{h_{l,r,h_b} - h_{l,r,h_a}}, & h_{l,r,h_a} \leq h_{l,r,h_x} \leq h_{l,r,h_b} \\ \dfrac{h_{l,r,h_c} - h_{l,r,h_x}}{h_{l,r,h_c} - h_{l,r,h_b}}, & h_{l,r,h_b} \leq h_{l,r,h_x} \leq h_{l,r,h_c} \\ 1, & h_{l,r,h_x} = h_{l,r,h_b} \end{cases} \qquad (4)$$

The graphical representation of the fuzzy holding cost is illustrated in Figure Nr. 4.
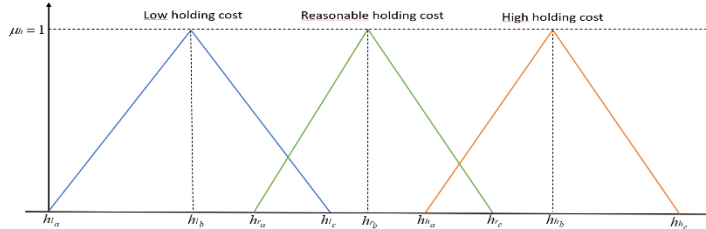
Figure Nr. 3: Holding cost and membership functions of the three holding costs

The last input variable is production rate and is described by two linguistic terms: low and high, because the medium production rate is a crisp number.

Definition 4: Let the discourse universe consists of the setup costs set P = [P_L, P_H] and the set of rules F(0,1) valid for all fuzzy subsets described by the linguistic terms. The fuzzy numbers: $P_l \in P$, described by linguistic term: "low" and $P_h \in P$, described by linguistic term: "high" are triangular fuzzy numbers of the form $p_l = (p_{l_a} \quad p_{l_b} \quad p_{l_c})$ and $p_h = (p_{h_a} \quad p_{h_b} \quad p_{h_c})$, if their membership functions are defined by the following relation:

$$\mu_{pl,h}(x) = \begin{cases} 0, & p_{l,h_x} \leq p_{l,h_a}; \quad p_{l,h_x} \geq p_{l,h_c} \\ \dfrac{p_{l,h_x} - p_{l,h_a}}{p_{l,h_b} - p_{l,h_a}}, & p_{l,h_a} \leq p_{l,h_x} \leq p_{l,rh_b} \\ \dfrac{p_{l,h_c} - p_{l,h_x}}{p_{l,h_c} - p_{l,h_b}}, & p_{l,h_b} \leq p_{l,h_x} \leq p_{l,h_c} \\ 1, & p_{l,h_x} = p_{l,h_b} \end{cases} \tag{5}$$

The graphical representation of the fuzzy production rate is illustrated in the following figure:
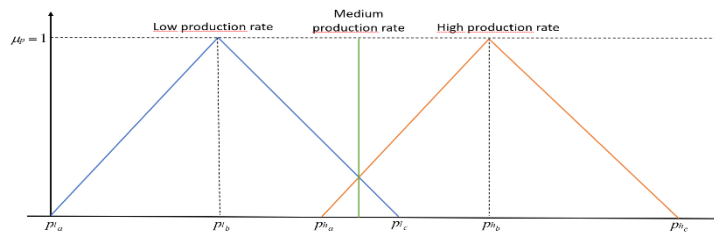
Figure Nr. 4: Production rate and membership functions

The output variable, ELQ (Economic Logic Quantity), is described through three linguistic variables: profitable (ELQ), zero profit (ELQ) and unprofitable (ELQ). These linguistic variables are used to provide information about the impact of quantity level on the company performance.

Definition 5: Let the discourse universe consists of the economic production quantity set ELQ = [ELQ_u, ELQ_p] and the set of rules F(0,1) valid for all fuzzy subsets described by the linguistic terms. The fuzzy numbers: $ELQ_u \in ELQ$, described by linguistic term: "unprofitable", $ELQ_0 \in ELQ$, described by linguistic term "zero profit" and $ELQ_p \in ELQ$, described by linguistic term: "profitable" are triangular fuzzy numbers of the form $elq_u = (elq_{u_a} \quad elq_{u_b} \quad elq_{u_c})$, $elq_0 = (elq_{0_a} \quad elq_{0_b} \quad elq_{0_c})$ and $elq_p = (elq_{p_a} \quad elq_{p_b} \quad elq_{p_c})$, if their membership functions are defined by the following relation:

$$\mu_{elq_{u,0,p}}(x) = \begin{cases} 0, & elq_{u,0,p_x} \leq elq_{u,0,p_a}; \quad elq_{u,0,p_x} \geq elq_{u,0,p_c} \\ \dfrac{elq_{u,0,p_x} - elq_{u,0,p_a}}{elq_{u,0,p_b} - elq_{u,0,p_a}}, & elq_{u,0,p_a} \leq elq_{u,0,p_x} \leq elq_{u,0,p_b} \\ \dfrac{elq_{u,0,p_c} - elq_{u,0,p_x}}{elq_{u,0,p_c} - elq_{u,0,p_b}}, & elq_{u,0,p_b} \leq elq_{u,0,p_x} \leq elq_{u,0,p_c} \\ 1, & elq_{u,0,p_x} = elq_{u,0,p_b} \end{cases} \tag{6}$$

The graphical representation for the output value is illustrated in the following figure:
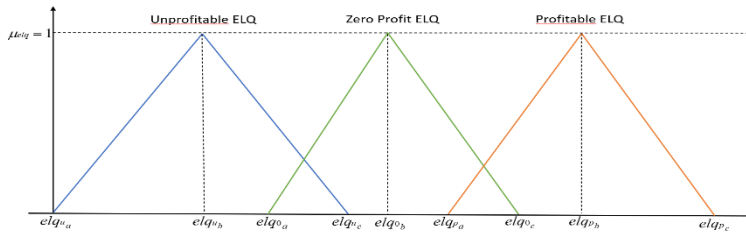
Figure Nr. 5: ELQ and membership functions

The values of the output ELQ for which $\mu_{elq_{u,0,p}} = 1$, were determined by the ELQ formula as follows:

$$elq_{n_b} = \sqrt{\frac{2 \times k_{h_b} \times d_{l_b}}{h_{h_b}\left(1 - \dfrac{d_{l_b}}{p_{l_b}}\right)}} \quad , \quad elq_{0_b} = \sqrt{\frac{2 \times k_{r_b} \times d_{m_b}}{h_{r_b}\left(1 - \dfrac{d_{m_b}}{p_{l_b}}\right)}} \quad , \quad elq_{p_b} = \sqrt{\frac{2 \times k_{l_b} \times d_{h_b}}{h_{l_b}\left(1 - \dfrac{d_{h_b}}{p_{h_b}}\right)}} \qquad (7)$$

B. The inference step

After the formulation and fuzzification of the input and output variables, the FLS should have a rule base in order to provide a solution that consider all these variables. This rule base is constructed by the decision makers using" if-then" rules. For the above defined variables, the numbers of the rules in rule base is 54 (Appendix A).

The inference step consists in: evaluating each rules through union and intersection operation depending on the operator used in each rule between variables (or, and), combining the results of each rule and obtaining a graph for each rule. Through this step, the decision makers can evaluate the impact of each rule in the final solution.

There are two types of inferences: MAMDANI and SUGENO. In this paper, the MAMDANI inference is used.

C. The deffuzification step

This step has the following sub-steps:

- union of each rule graph;

- transformation of the solution, provided by the union of all rule graphs, from a fuzzy number to a crisp number. This is possible through defuzzification methods: centroid methods, weighted average method, min-max membership method and center of sums. Centroid method is the most widely used defuzzification method, especially when the FLS is solved through MATLAB platform, although the weighted average method is used. The formula of centroid method is:

$$x^* = \frac{\int \mu_A(x) \cdot x \, dx}{\int \mu_A(x) \, dx} \qquad (8)$$

where: $\mu_A(x)$ - membership degree for *x* variable in each rule inference;

x – variable value in each rule inference.

In this last step, the solution of the FLS is provided and it is a crisp value that belongs to discourse universe of the output variable. Therefore, the FLS solution is a crisp ELQ that is different from crisp EPQ. In order to compare EPQ and ELQ, it is necessary to test the traditional and fuzzy method.

3.2. Testing traditional EPQ and fuzzy ELQ method in an inventory decision

A. Testing traditional EPQ method

Considering a manufacturing company, the input variables of the traditional EPQ are evaluated and ranked by the historical evolution of setup cost, demand, holding cost and production rate in the following table:

Table 1 The ranking of input variables

	Setup Cost	Demand	Holding Cost	Production rate
Low	$100	400 qty.	$ 7	700 qty.
Medium/Reasonable	$130	600 qty.	$ 11	800 qty.
High	$180	900 qty.	$ 16	1.100 qty.

These variable values were selected and ranked by the frequency of these values in some specific periods of time: with profitable production, with zero-profit production and with unprofitable production. For example, in a crisis period, with unprofitable production, the most frequent value for setup cost was $100, thus, the lowest setup cost should be around $100. The highest setup cost, due to the frequency of occurrence in the past, could be around $180. In crisp EPQ, decision makers should accurately evaluate and rank the inputs, in order to obtain a valid solution. In fuzzy ELQ, decision makers can overcome the risk of errors in ranking, through fuzzy numbers.

According to the data from the Table 1, the managers asses three levels of EPQ:
- low EPQ

$$\text{EPQ}_l = \sqrt{\frac{2K_lD_l}{h_l(1-\dfrac{D_l}{P_l})}} = \sqrt{\frac{2\times100\times400}{7\times(1-\dfrac{400}{700})}} = 164 \text{ qty. / production cycle} \qquad (9)$$

- medium EPQ

$$\text{EPQ}_m = \sqrt{\frac{2K_rD_m}{h_r(1-\dfrac{D_m}{P_m})}} = \sqrt{\frac{2\times130\times600}{11\times(1-\dfrac{600}{800})}} = 249 \text{ qty. / production cycle} \qquad (10)$$

- high EPQ

$$\text{EPQ}_h = \sqrt{\frac{2K_hD_h}{h_h(1-\dfrac{D_h}{P_h})}} = \sqrt{\frac{2\times180\times900}{16\times(1-\dfrac{900}{1100})}} = 335 \text{ qty. / production cycle} \qquad (11)$$

According to the periods of time and the impact of EPQ on profit, the following two cases are considered:

Case 1: profitable production: with low costs, high demand and production rate

$$\text{EPQ}_1 = \sqrt{\frac{2K_lD_m}{h_l(1-\dfrac{D_m}{P_h})}} = \sqrt{\frac{2\times100\times900}{7\times(1-\dfrac{900}{1100})}} = 367 \text{ qty./ production cycle} \qquad (12)$$

Case 2: unprofitable production, due to the high costs and low demand and production rate

$$\text{EPQ}_2 = \sqrt{\frac{2K_hD_l}{h_h(1-\dfrac{D_l}{P_l})}} = \sqrt{\frac{2\times180\times400}{16\times(1-\dfrac{400}{700})}} = 144 \text{ qty./ production cycle} \qquad (13)$$

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B. Testing fuzzy ELQ

Considering the historical evolution of costs, demand and production rate and the data from Table 2, the input variables of ELQ model are formulated and fuzzified in triangular fuzzy numbers. In the formulation process, the following assumptions are considered:

- all crisp values of input variables are grouped in three categories described by the linguistic terms: low, medium or reasonable and high;

- the linguistic terms consider the past evolution of the variables and the time when these variables occurred. There are three historical periods, identified by the decision makers: periods with financial distress (characterized through cost cutting), periods with expanding objectives (characterized through investing in new products, in new assets) and periods of stagnations.

- the triangular fuzzy numbers and the membership functions are formulated using the frequency of occurrence of each crisp value of input variables, in the above-mentioned periods.

- the membership degree is designed, also, using the frequency of occurrence in the past, and means the degree of realisation in the future. It is considered that, if a variable value occurred more times in a type of period, then if the company goes through the same period, the degree of realisation in the future is 100%. If the decision makers can not forecast precisely the type of period or the variable values did not occur frequently in the past, the degree of realisation is reduced;

- the output variable is formulated considering the past impact of the EPQ values on the profit level;

- the limits and the peak of output variable, ELQ, are determined considering the traditional EPQ levels (low, medium, high).

In MATLAB, the formulation and fuzzification of the input and output variables is realised through the following graphs:

- setup cost:
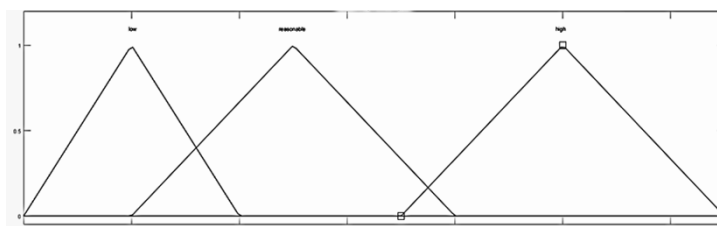
Figure Nr. 6 Fuzzy Setup Cost numbers

- demand
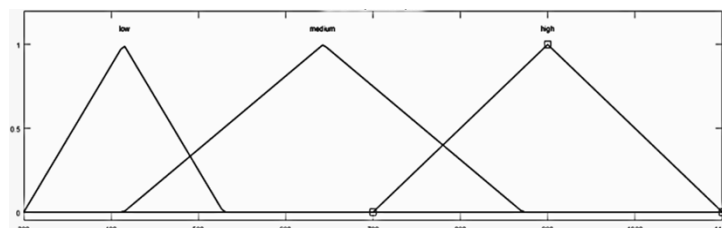
Figure Nr. 7 Fuzzy Demand numbers

- holding cost
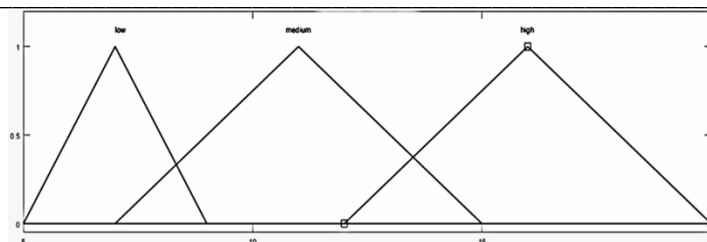
Figure Nr. 8 Fuzzy Holding Cost numbers

- production rate
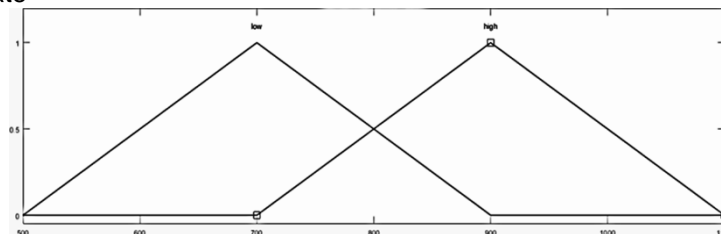
Figure Nr. 9 Fuzzy Production Rate numbers

- ELQ
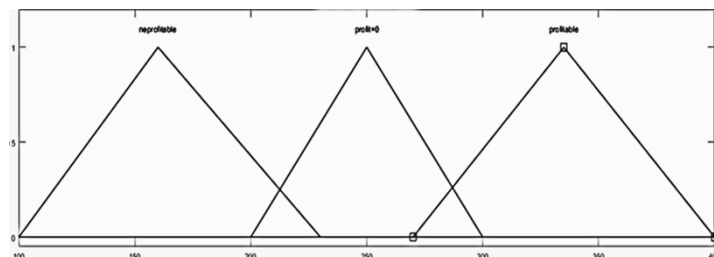
Figure Nr. 10 Fuzzy ELQ

After the fuzzification, the next step of the FLS is inference, which is MAMDANI. The rule base for this inference is defined in Appendix A and evaluates the impact of the input variables in the ELQ output. To evaluate the impact, the Case 1 and Case 2 are considered. In traditional EPQ model, first case provides a solution for a profitable production and it was equal to 367 qty. In the second case, the traditional EPQ is equal to 144 qty. and it is relevant for an unprofitable production.

Case 1

In the EPQ model, the following values for input variables were considered:
- Setup cost = $100
- Demand = 900 qty
- Holding cost = $ 7
- Production rate = 1.100 qty.

Through MAMDANI inference, the ELQ solution for these input values is equal to 335 qty, which is the high level of EPQ, reached in the periods with profitable production. This solution is provided by using fuzzy function in MATLAB workspace (Appendix B) and it is different from the traditional EPQ solution. The deviation between EPQ and ELQ is equal to 32 qty. The cost of the deviation is determined as follows:

$$C_{32qty} = 32 \times (Setup \quad Cost \quad + \quad Holding \quad Cost) = \$3.424 \qquad (14)$$

This platform allows decision makers to evaluate the impact of the inputs on the ELQ, through some surfaces, which could take in consideration only two inputs from all inputs. Thus, there could be 12 surfaces that allows managers to evaluate the impact of inputs on the output. From these 12, only 4 are considered:
- the surface with the setup cost and demand inputs;
- the surface with setup cost and production rate inputs;
- the surface with the demand and production rate inputs;
- the surface with the holding cost and setup cost inputs.
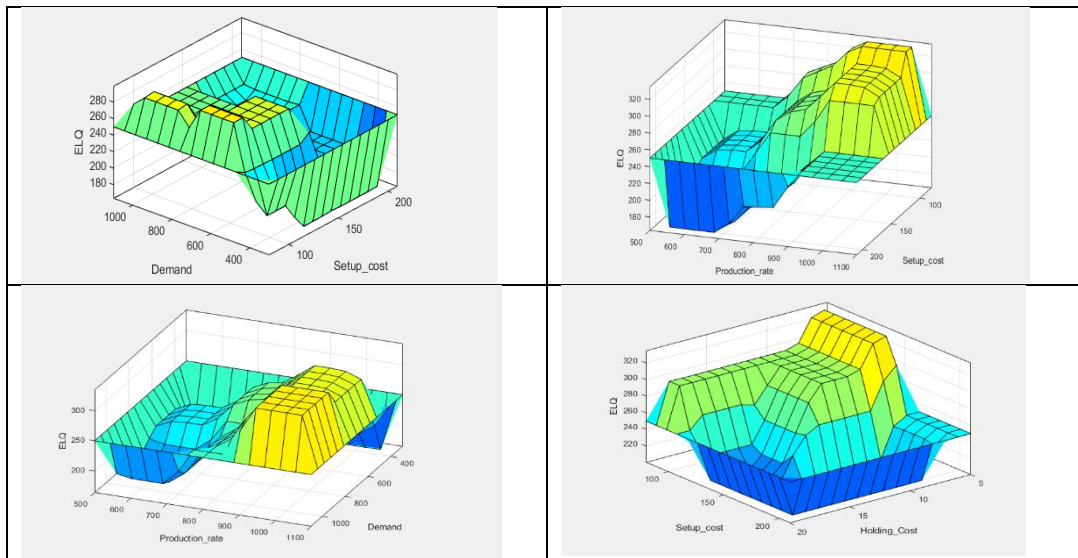
Figure Nr. 11 ELQ surfaces with low costs and high demand and production rate

Analysing, these surfaces, the decision makers could formulate the following conclusions:
- if the costs are low and the demand and production rate are high, the ELQ is characteristic for a profitable production;
- if the demand and production rate are medium, the ELQ is on the zero profit level;
- the setup cost has a greater impact than holding cost on the ELQ.

Case 2
In the second EPQ traditional case, the following values of the input variables were considered:
- Setup cost = $180
- Demand = 400 qty
- Holding cost = $ 16
- Production rate = 700 qty.
Considering these values, the EPQ was equal to 144 qty. and was relevant for an unprofitable production, due to the high costs. Through Mamdani inference, using the rule base defined in Appendix C, the ELQ is equal to 163, with extra 19 qty., comparing to EPQ. This extra quantity has a cost determined as follows:

$$C_{19qty} = 19 \times (Setup \quad Cost \quad + \quad Holding \quad Cost) = \$54.720 \qquad (15)$$

It can be observed that in first case, the EPQ has an extra cost and in the second case, the ELQ has an extra cost. The impact of these extra costs on the profit level, could be a future research direction and it is important direction, in order to provide a complex solution for the decision makers.

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4. Conclusions and recommendations

In modelling and testing ELQ, the following strengths and weaknesses can be identified:

Strengths:

- The ELQ model allows managers to formulate decision problems, even if the parameters are vague;
- The ELQ model allows managers to identify the optimal quantity to be produced and the impact of the optimal quantity on the profit level;
- The ELQ model, through MATLAB interface, allows decision makers to simulate every time when there are changes in input variables, and to obtain the solution, in the shortest time possible;

Weaknesses:

- If there are many input variables, the rule base, used in ELQ model, is very time consuming;
- The rule base appeals to the decision makers experience and there can occur some errors in formulating the rules;
- The data collection process needs some algorithms to rank the variables and to formulate the membership function of these variables.

The ELQ model can be developed in a such way that the weaknesses would be eliminated and decision process would be have less errors:

- The ELQ model could consider variables as: quality, backorders, discounted price. The solution provided by this complex ELQ would be more authentic and valid;
- The ELQ, combined with Sensitivity Analysis would help decision makers to measure the impact of an extra quantity on the profit level.
- The ELQ model, combined with AHP algorithm would help managers in collecting and ranking input and output variable
- The ELQ model developed using recursive algorithms would help decision makers to formulate automatically the rule base.

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Appendix A

Nr. Crt.	Setup Cost	Demand	Holding Cost	Production Rate	Economic Logic Quantity (ELQ)
1	low	low	low	low	unprofitable
2	low	low	low	high	profit = 0
3	low	low	reasonable	low	unprofitable
4	low	low	reasonable	high	profit = 0
5	low	low	high	low	unprofitable
6	low	low	high	high	unprofitable
7	low	medium	low	low	profitable
8	low	medium	low	high	profitable
9	low	medium	reasonable	low	profit = 0
10	low	medium	reasonable	high	profitable
11	low	medium	high	low	profit = 0
12	low	medium	high	high	profitable
13	low	high	low	low	profitable
14	low	high	low	high	profitable
15	low	high	reasonable	low	profitable
16	low	high	reasonable	high	profitable
17	low	high	high	low	unprofitable
18	low	high	high	high	profit = 0
19	reasonable	low	low	low	unprofitable
20	reasonable	low	low	high	profit = 0
21	reasonable	low	reasonable	low	unprofitable
22	reasonable	low	reasonable	high	unprofitable
23	reasonable	low	high	low	unprofitable
24	reasonable	low	high	high	unprofitable
25	reasonable	medium	low	low	profitable
26	reasonable	medium	low	high	profitable

Nr. Crt.	Setup Cost	Demand	Holding Cost	Production Rate	Economic Logic Quantity (ELQ)
27	reasonable	medium	reasonable	low	profit = 0
28	reasonable	medium	reasonable	high	profitable
29	reasonable	medium	high	low	unprofitable
30	reasonable	medium	high	high	profit = 0
31	reasonable	high	low	low	profitable
32	reasonable	high	low	high	profitable
33	reasonable	high	reasonable	low	unprofitable
34	reasonable	high	reasonable	high	profitable
35	reasonable	high	high	low	profit = 0
36	reasonable	high	high	high	profitable
37	high	low	low	low	profit = 0
38	high	low	low	high	unprofitable
39	high	low	reasonable	low	unprofitable
40	high	low	reasonable	high	unprofitable
41	high	low	high	low	unprofitable
42	high	low	high	high	unprofitable
43	high	medium	low	low	profit = 0
44	high	medium	low	high	profit = 0
45	high	medium	reasonable	low	unprofitable
46	high	medium	reasonable	high	profit = 0
47	high	medium	high	low	unprofitable
48	high	medium	high	high	profit = 0
49	high	high	low	low	unprofitable
50	high	high	low	high	profitable
51	high	high	reasonable	low	unprofitable
52	high	high	reasonable	high	profit = 0
53	high	high	high	low	unprofitable

Nr. Crt.	Setup Cost	Demand	Holding Cost	Production Rate	Economic Logic Quantity (ELQ)
54	high	high	high	high	profitable

Appendix B

Case 1. ELQ Test
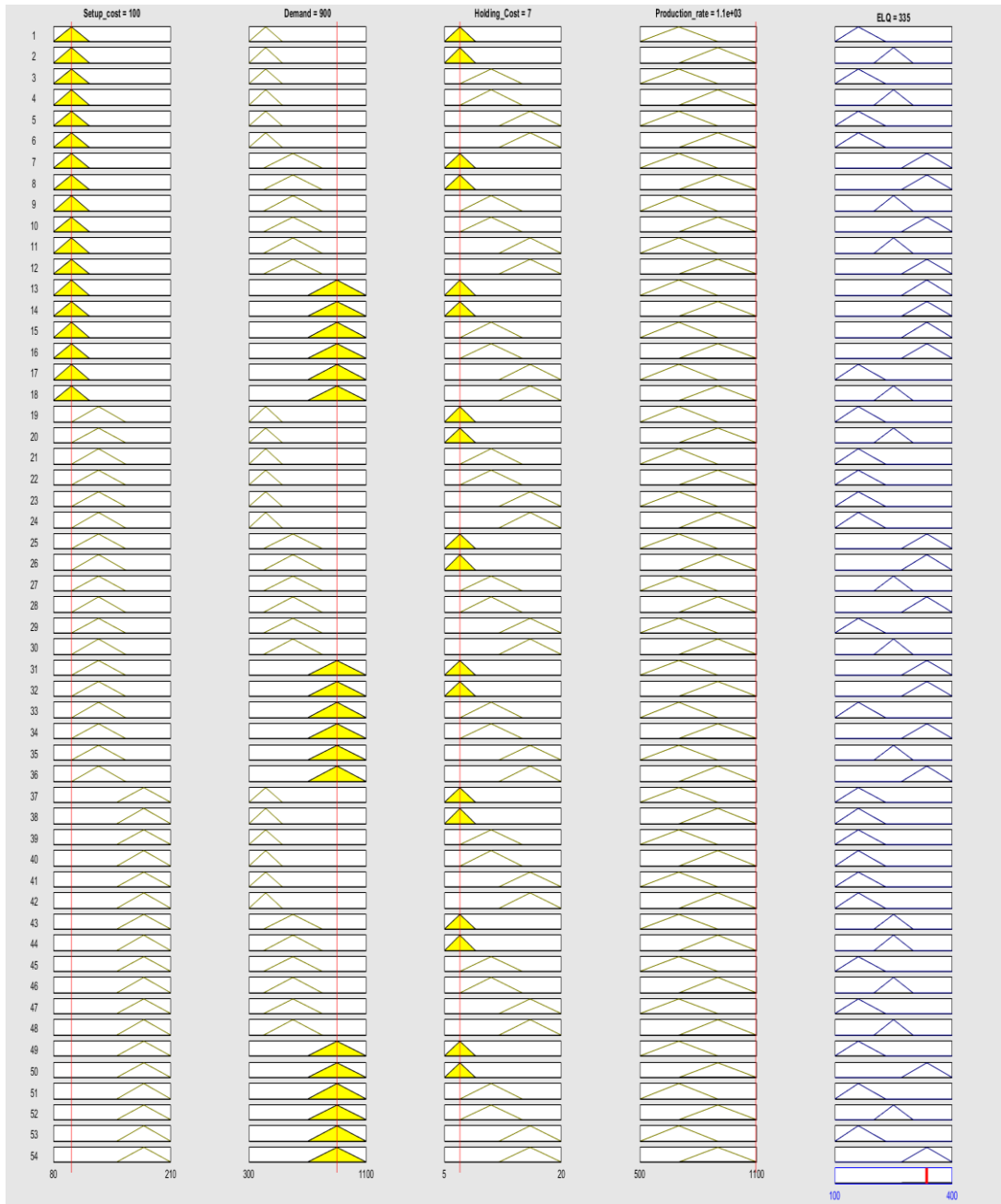
Appendix C
Case 2. ELQ Test
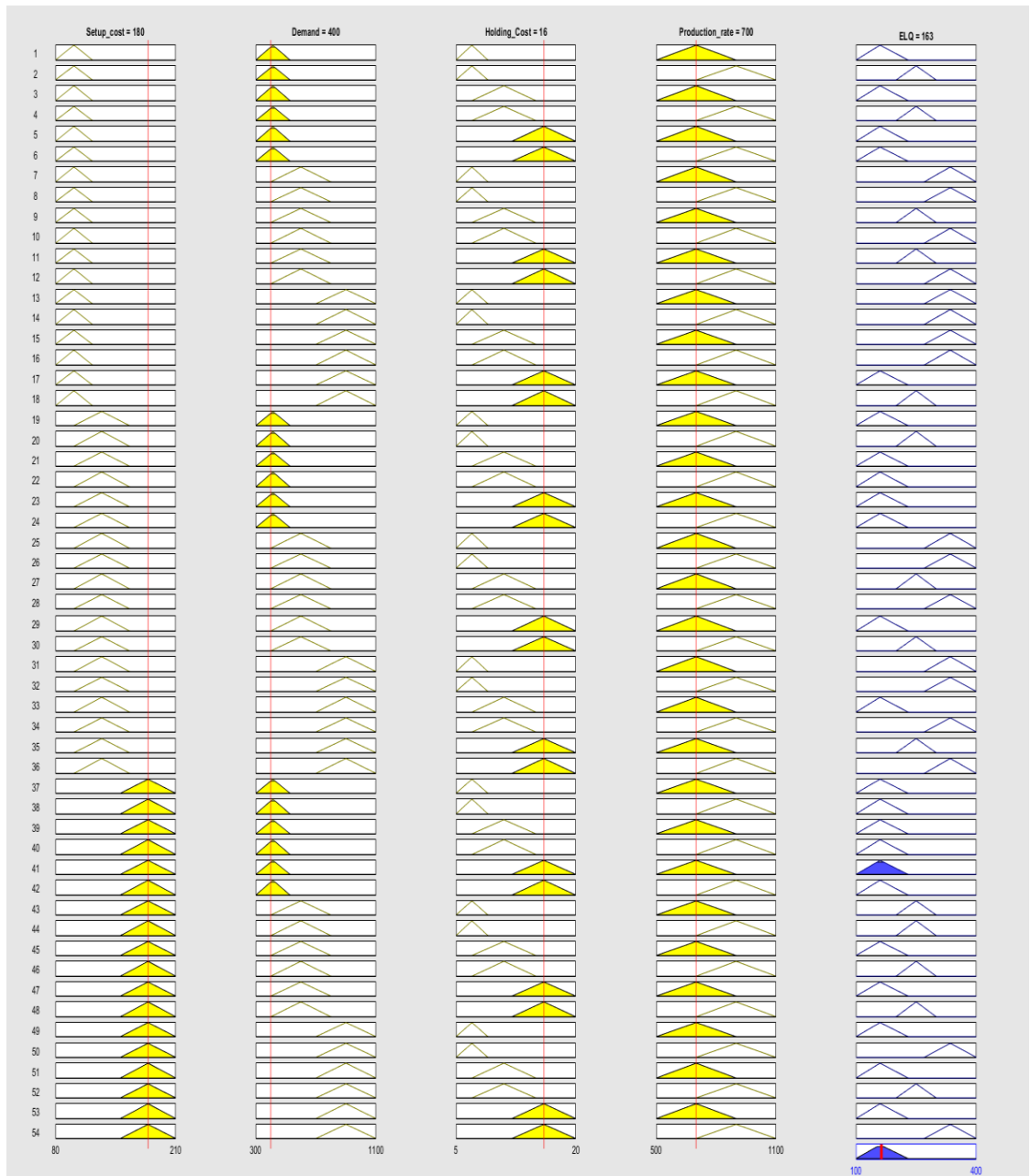
INTERNATIONAL BUSINESS, EUROPEAN INTEGRATION, FOREIGN LANGUAGES AND BUSINESS ENVIRONMENT

CONSUMPTION EXPENDITURE OF THE ELDERLY IN THE EUROPEAN UNION: CONVERGENCE AND IMPACT ON GDP

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Abstract: *In the context of an ageing population, the aim of this study is to analyze how the consumption expenditure of the age group 50 plus affected the GDP growth rate during the period 2005-2019, at the level of the European Union countries. Using spatial econometrics, we study the convergence process of both the consumption expenditure of the 50 plus age group and the GDP. Furthermore, we analyze the relationship between the two variables and its evolution in time. We conclude that there is a bidirectional relationship between the studied variables: an increase in the growth rate of the 50 plus age consumption significantly and positively impacts the GDP growth rate and vice versa. At the level of Western European states where the share of 50 plus population is the highest, the impact on GDP growth rate is stronger. The results are relevant for further identifying possible economic opportunities created by the ageing population while supporting the European Union cohesion policy through the convergence process aimed at reaching an overall harmonious development within the member states and regions.*

Keywords: *ageing population; consumption; spatial analysis; economic convergence*

JEL Classification: *J14; C31; E20*

1. Introduction

European countries are currently facing an ageing population as a result of declining fertility rates and increasing life expectancy of their inhabitants. Eurostat forecasts indicate a continuous increase in the old dependency ratio (the ratio between people aged 65 years and over to those aged 20-64) which will reach 59% in 2070, an increase from 29% in 2010 and 34% respectively in 2019 (European Commission, 2020).
The phenomenon of population ageing has been analyzed in the academic, research and business environment from multiple perspectives, aiming at: 1. Identifying the effects of population ageing, both economically and socially; 2. Identifying the policies meant to counteract the negative effects of the ageing population, as well as the possible economic opportunities created by this phenomenon.
From the perspective of economic opportunities, the awareness of an ageing population has raised the interest to analyze the economic impact of these demographic changes through the development of new goods and services for the elderly, leading to the emergence of the concept of Silver Economy.
According to the European Commission, Silver Economy represents "the economic opportunities arising from the public and consumer expenditure related to population ageing and the specific needs of the population over 50". The Silver Economy is proving to have significant economic potential, estimated at $ 7 billion per year, making it the third largest economy in the world (European Commission, 2015).

There are differences in the consumption of the population aged over 50. At EU level, a significant difference between the consumption of the new EU Member States compared to the old ones has been observed, the main reasons being determined by the difference in salaries and pensions, savings and how to save, but also cultural and geographical factors. Thus, the 50+ age group represents a significant cohort in terms of consumption potential in countries such as Germany, Austria, France, the Mediterranean countries, the Nordic countries and the Benelux (Pauhofova and Dovalova, 2015).

At the same time, at the level of the Eastern Europe, the consumption pattern is determined by the fact that the old consumers aged 65 and over, accounted in 2016 for almost a third of the lowest income social class (Euromonitor, 2017).

Demographic changes represent an important factor influencing the phenomenon of reducing disparities in the EU Member States (European Commission, 2019). In the context of the need to identify actions to support the cohesion policy in Europe, various research has been done on the relationship between ageing population and economic development. We use the convergence theory in order to evaluate how both the GDP and the consumption of the 50+ age group have evolved in time and how they conditioned one another. Results confirm the convergence theory according to which when analyzing economies for a long span of time, poorer economies grow faster than richer economies, leading to the alignment of the economic indicators (Zaiț, 2006).

2. Methodology and Data

To achieve the goals of this research in assessing the relationship between GDP and the level of consumption of the 50+ age group, we have conducted two types of analysis.

The first analysis is related to the fact that significant cross-section dependence is to be found on the European Union countries, especially for the fact that they have common rules and regulations. This can be translated into significant and important convergence processes. While the field's literature is abundant in studies emphasizing significant convergence of the GDP, in all forms and at different spatial levels (see, for example, Mare (2014) for country level, or Dall'Erba & Le Gallo (2008) for the regional level) there is a lack in terms of other aspects and fields. We apply the standard beta-convergence methodology to assess the existence of the convergence process for both the GDP and the consumption expenditure of the 50+ group (C50+).

The first step is the assessment of absolute beta-convergence, given by eq. (1) (Mare et al, 2016). Results are given by equations 1 and 3 in Table 1.

$$\frac{1}{T} \times \ln\left(\frac{y_{iT}}{y_{i0}}\right) = \alpha + \beta ln\left(y_{io}\right) + \varepsilon_i$$

eq. (1)

where:
T- number of years in the analysis
i – index of the country
y_{i0} - the variable at zero moment (year 2005) in country i
y_{iT} - the variable in 2019 in country i
β- regression coefficient
α- intercept
ε- error

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The convergence speed, which evaluates the intensity of the convergence process, may be computed based on eq. (1), using the following formula:

$$b = \frac{-\ln(1 + T \times \beta)}{T}$$

But the goal of the present research is to assess the impact of the 50+ group in the economy, which is why we also introduce the growth rate of each of the other variable in the convergence model and transform the analysis into a conditional one (eq. (2)) (equations 2 and 4 in Table 1):

$$\frac{1}{T} \times \ln\left(\frac{y_{iT}}{y_{io}}\right) = \alpha + \beta ln(y_{io}) + \lambda \ln(X) + \varepsilon_i \qquad \text{eq. (2)}$$

In the second part of our research we estimate the simple linear relationship between the GDP and C50+, for each of the years considered in the analysis. This is meant to evaluate if the significance of the relationship and its characteristics are time persistent. Results are presented in table 2. No spatial effects were emphasized by the spatial diagnostics tests for the distance matrix employed.
All post-estimation procedures were applied to evaluate the validity of the results.

Analysis was conducted in GeoDa 1.14, using Euromonitor data on GDP and consumption expenditure of the population aged 50 and over, during the period 2005-2019.

3. Results

3.1. Analysis on the growth rate of the 50+ group consumption expenditure
We first constructed the quartile map using data on the consumption expenditure of the population aged 50 and over (further on abbreviated C50+), during 2005-2019, at the level of the European Union.
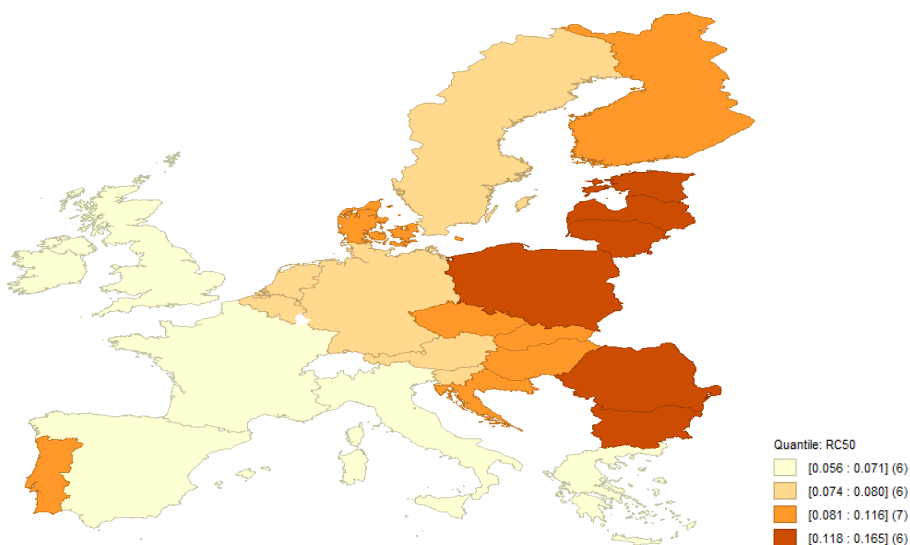
Fig. 1. Growth rate of the 50+ group consumption expenditure in 2005-2019-quartile map
Source: own construction in GeoDa 1.14

The analysis of the growth rate of the consumption expenditure of the group age (50+) emphasizes the standard spatial distribution which characterizes the European Union - a clear clusterization process on the East-West direction. Old members of the EU have low growth rates for this variable, while the new, former communist countries have high values. This is indicative of a possible convergence process occurring for the consumption expenditure of the (50+) group age. In order to assess this aspect, we have also constructed the quartile map for the initial value, in 2005 (see Fig. 2). Our assumption holds when comparing the two maps in Fig. 1 and Fig. 2. It is clearly emphasized that the old EU members have high values for the expenditure consumption of the (50+) age group, while the eastern ones had initial low values. This is in accordance with the convergence theory that states that spatial units with high initial values will be characterized by low growth rates, while the reverse is valid for the initial low value spatial units (Barro & Sala-i-Martin, 1992). The reason for this is because convergence implies movements towards a common equilibrium.
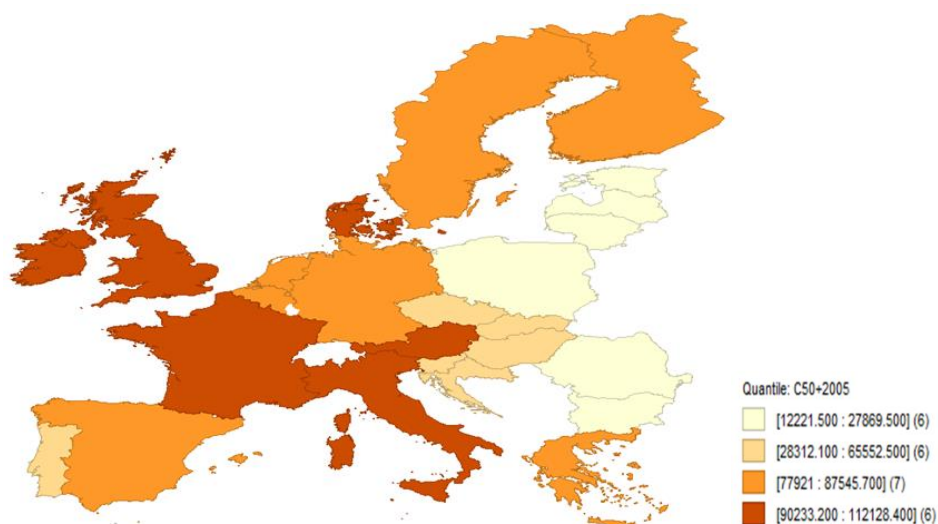
Fig. 2. Consumption expenditure of the 50+ age group in 2005 - quartile map
Source: own construction in GeoDa 1.14

3.2. Analysis on the growth rate of the GDP
The aim of the present research is to analyse the relationship between the 50+ age group consumption and the GDP, in order to evaluate the economic impact of this age group. In this respect we have further constructed the quartile maps for the GDP in 2005 (Fig. 3) and its growth rate (Fig. 4) in the analyzed period. The maps emphasize the same type of behaviour, with clear clusterization processes on longitude. This is expected, as several studies on the European Union have pointed out that, in respect to the GDP and not only, there are significant clusterization schemes and a valid convergence process (Mare, 2014a & b).

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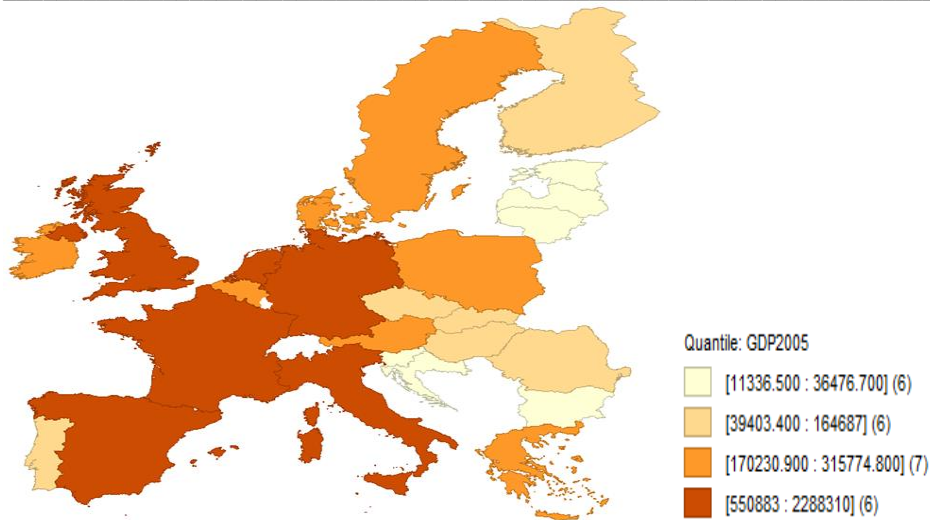
Fig. 3. GDP in 2005 - quartile map
Source: own construction in GeoDa 1.14
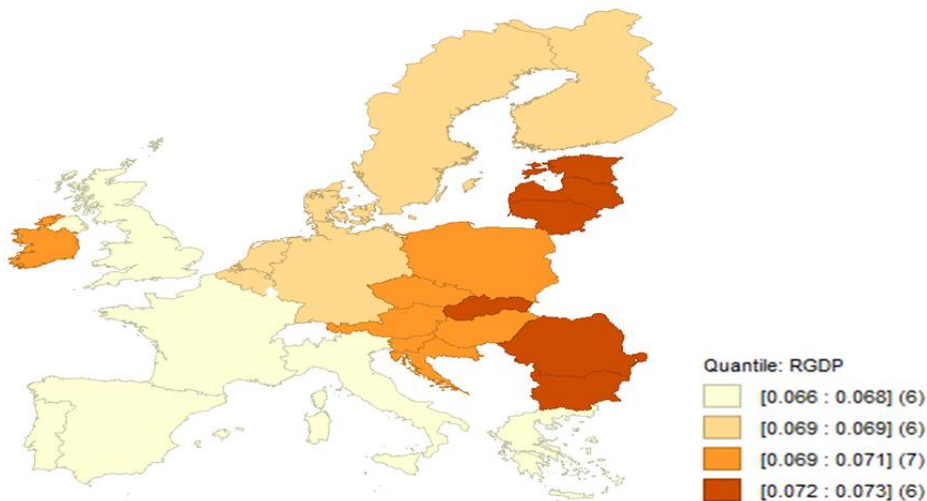
Fig. 4. Growth rate of the GDP in 2005 - 2019 - quartile map
Source: own construction in GeoDa 1.14

The descriptive analysis conducted based on the quartile maps point out a direct relationship between the GDP and the consumption expenditure of the (+50) age group. For this reason, in the following part of our research we tested the significance and stability using spatial regression.

3.3. Regression analysis
The first aspect depicted from the previous analysis on the quartile maps is the existence of the convergence process in EU. Consequently, the first spatial regression procedures were applied in order to test its final validity. Table 1 presents the results of the convergence

testing procedures. As stated in the methodological part, the first step is to test the absolute beta-convergence, namely, to specify the simple equations between each growth rate and the initial level. In both cases (GDP and C50+), significant convergence process was validated by the analysis. The coefficient of the 2005 value is both negative and highly significant (0.000). Moreover, the convergence process is also stable, as coefficients range in the [-1; 0] interval (-0.0009 for the GDP and -0.038 for C50+). The analysis of the absolute beta-convergence process also allows for the computation of the convergence speed, which is lower for C50+, at 5.7%, as compared to 9.44% for the GDP. This indicates a certain reluctance of the first variables in terms of a general equilibrium state. One possible explanation is the fact that the behaviour of the 50+ group is also conditioned by the internal specificities of a country, namely level of income, traditions, culture, etc.

Considering the relationship between GDP and C50+ is bidirectional, we have therefore applied the conditional beta-convergence method in both ways. The introduction of the C50+ growth rate in the GDP convergence model lowers the coefficient of the GDP in 2005, but all coefficients are highly significant. Additionally, GDP in 2005 preserves both the sign and the sub-unit value. As expected, the impact of C50+ upon GDP is a direct one - an increase of 1 pp in the growth rate of C50+ leads to an increase of 0.043 pp in the GDP growth rate. The reverse is also valid, the convergence process of C50+ is significantly and positively conditioned by the GDP growth rate. Additionally, the impact of GDP upon C50+ is higher than in the reverse case.

Table 1: Beta-convergence analysis for GDP and C50+

Variables	Equation 1: GDP	Equation 2: GDP vs C50+	Equation 3: C50+	Equation 4: C50+ vs GDP
	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
LN GDP2005	-0.0009328 (0.00001)	-0.000414674 (0.00746)	-	
RC50+	-	0.0430952 (0.00001)	-	
LN C50+2005	-	-	-0.0383827 (0.00000)	-0.024153 (0.00079)
RGDP	-	-	-	6.05846 (0.01204)
Constant	0.0809432 (0.00000)	0.07073 (0.00000)	0.0418155 (0.00000)	-0.0675841 (0.75519)
Adjusted R^2	0.564448 -	0.815425 -	0.804442 -	0.847482 -
Akaike	-260.744 -	-281.32	-144.764	-150.09
Spatial tests	- >0.1	- >0.1	- >0.1	- >0.1

Source: own calculations in GeoDa 1.14

In the last step of our analysis, we estimated the impact of C50+ on the GDP, but this time for each analyzed year, during 2005-2019. The intention was to see the evolution of the relationship significance and intensity. Moreover, we have also tested for the presence of spatial effects in the models. The last issue was rejected in all cases, all spatial dependence diagnostics tests returning probabilities much higher even than the 10% level. Regarding the relationship between C50+ and GDP, the regression coefficients are highly significant and positive in all years, conforming the direct relationship between the two variables. This implies that more developed countries, with a higher GDP, have a higher consumption expenditure of the 50+ group. This is an expected result, as more developed countries have

a higher share of the 50+ group in the population (they have old populations). An interesting effect is the fact that the coefficients increase in value, meaning that a rise by 1% in the consumption expenditure of the 50+ age group had higher and higher impact on the GDP (see table 2).

Table 2. GDP vs. C50+ regression results

| Year | LNC50+ | | Constant | | Adjusted R^2 | Spatial tests |
	Coefficient	p-value	Coefficient	p-value		p-value
2005	1.71526	0.00002	-6.62658	0.06795	0.53932	>0,1
2006	1.75305	0.00003	-7.08318	0.06942	0.51674	>0,1
2007	1.82003	0.00007	-8.01240	0.06653	0.48564	>0,1
2008	1.85836	0.00013	-8.59732	0.07191	0.45414	>0,1
2009	1.82642	0.00009	-8.09680	0.07195	0.47069	>0,1
2010	1.87513	0.00006	-8.56487	0.05673	0.48630	>0,1
2011	1.91193	0.00008	-9.08822	0.05267	0.47872	>0,1
2012	1.94009	0.00008	-9.26670	0.05156	0.47591	>0,1
2013	1.91456	0.00011	-9.04559	0.06124	0.46124	>0,1
2014	1.92771	0.00012	-9.18904	0.06012	0.45964	>0,1
2015	1.97144	0.00009	-9.32703	0.05300	0.47270	>0,1
2016	1.99225	0.00012	-9.54371	0.05596	0.45869	>0,1
2017	2.06227	0.00014	-10.42090	0.04850	0.45333	>0,1
2018	2.10645	0.00017	-11.04580	0.04699	0.44197	>0,1
2019	2.16755	0.00019	-11.63910	0.04335	0.43833	>0,1

Source: own calculations in GeoDa 1.14

4. Conclusions

During 2005-2019, a clear convergence process can be observed for both the consumption expenditure of the people aged 50 and over, and the GDP, at the level of the European Union. As ageing population raises over the studied period, our research indicates an increased influence of the consumption expenditure of the 50+ age group on the GDP, especially in the European developed countries, where the phenomenon of population ageing is more accentuated.

The results emphasize the need to further investigate the particularities of this age group, from the perspective of the economic impact it may have, as forecasts indicate the continuation of the process of ageing in all European countries over the next decades.

5. Limitations and further research

This study is part of a broader analysis of the author who is in the process of developing the doctoral thesis, aiming to identify the economic opportunities that the phenomenon of population ageing can bring, from the perspective of the 50+ age group consumption. The pandemic of Covid in 2020 has definitely impacted the economy and people's lives and there

seems to be a disruption in the consumer pattern and demand respectively, especially among the elderly. As such, further research on the topics analyzed in this paper, regarding forecast on the economic growth, will have to consider the economic decline and all other negative effects on social level this pandemic caused.

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BETWEEN STRESS AND EVOLUTION - TEACHING AND LEARNING FRENCH FOR SPECIFIC PURPOSES IN ONLINE COURSES DURING COVID-19 PANDEMIA / ENTRE STRESS ET ÉVOLUTION - L'ENSEIGNEMENT/APPRENTISSAGE DU FOS À DISTANCE DANS UN CONTEXTE DE CONFINEMENT

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Abstract: *The pandemic calls into question the very functioning of humanity. In a world disturbed at all levels, education is inevitably suffering. The sudden passage without proper preparation exclusively to distance learning has changed the routines of all implied parties. This way of teaching and learning has pointed to many challenges, which led to new approaches, strategies, and methods as well as a need for a rapid adaptation to this unusual context. Our study, carried out during March and April 2021, proposed highlighting the representations and expectations of economics students (several specializations combined) at the beginning of their academic path. Through quantitative and qualitative analysis, the article identifies how the teaching and learning of the French language for affairs were influenced by the distance learning process imposed during the state of emergency and alert decreed by the government.*
In the beginning, the students stressed their preference for the traditional learning paradigm (face-to-face courses, meeting with fellow students, the excitement of student life), even if they never crossed the doorsteps of an amphitheater. During the isolation period, despite the stress and challenges, they managed to discover the positive parts of online education, naturally provided by the tools used (unlimited access to courses, variety of teaching resources, freedom of access, the permanence of materials, video conferencing applications, etc.). As a result, the ideal learning environment is a combination of the two above-mentioned approaches that incorporate both worlds' advantages.

Keywords: *distance teaching/learning; French for specific purposes; confinement; stress; videoconferencing; hybrid teaching.*

JEL Classification: *Z13*

1. Introduction

La période comprise entre mars 2020 et mars 2021 représente une expérience hors normes pour tout le monde et relève de métamorphoses à tous les niveaux. Malgré la quasi-désorientation au début du passage forcé à l'enseignement à distance, les chercheurs ont essayé d'en identifier les changements et les défis ; les praticiens ont tenté d'en identifier les obstacles et les blocages dans l'activité didactique, les théoriciens ont investigué le phénomène afin de proposer des solutions pragmatiques ; les enseignants et les élèves/ les étudiants ont essayé de s'y adapter au fur et à mesure des jours et des semaines de cours. Durant cette période, beaucoup d'études ont été publiées, notamment dans le domaine de l'économie, de la santé ou de la psychologie, mais aussi en didactique et en pédagogie. De façon générale, ces études ont mis en évidence les problèmes et les blocages de toute sorte, induits par cette crise mondiale ; elles ont décrit des situations et des expériences durant la période de confinement et ont proposé des solutions et des pistes rapides d'amélioration des pratiques.

Notre article se propose d'interroger l'expérience vécue par des étudiants roumains en première année d'études économiques, qui étudient le français en tant que première langue étrangère, dans le cadre de leurs spécialisations.

Nous nous proposons d'identifier les représentations, les attentes et les suggestions de ces étudiants par rapport à l'expérience vécue durant la période imposée d'enseignement à distance et plus particulièrement par rapport au cours de français en ligne.

2. Contexte

La pédagogie universitaire et l'utilisation des ressources numériques questionnent depuis plusieurs années l'enseignement supérieur. De même, la conception des cours à distance pour des publics en formation initiale ou continue, respectivement l'essor des plateformes permettant d'accueillir ces cours préoccupent le milieu universitaire, car selon Endrizzi (2012 : 11) « avec les technologies numériques, ce sont les opportunités d'apprendre qui se démultiplient », le numérique étant un vecteur innovateur d'enseignement et d'apprentissage. Malgré différents projets d'enseignement à distance développés au niveau européen depuis les années 2000, la crise de la COVID-19 et le passage massif à distance ont constitué un grand défi pour la communauté universitaire, tout comme pour l'enseignement en général et à tous les niveaux.

2.1. Le confinement pédagogique : une expérience hors normes

Des études ont été publiées durant la période du confinement en Europe et ailleurs et ont souligné la difficulté engendrée par l'adaptation brutale, rapide et surtout obligatoire à l'enseignement et à l'apprentissage à distance. Notons ici le numéro de juillet 2020 de la revue « Recherches et éducations » ou bien le numéro 9/2020 du « Journal des psychologues », consacrés intégralement à la crise de la COVID-19.

Descamps et al. (2020) s'intéresse aux aspects de la continuité pédagogique en Belgique francophone et identifie plusieurs difficultés comme l'aspect technique et le manque d'outils adaptés, l'absence de formation aux outils numériques, le manque d'accès à l'outil informatique ou à l'internet ; du côté pédagogique, les difficultés relèvent de l'absence de feedback, extrêmement démotivant pour les apprenants, ainsi que de la difficulté de gestion des grands groupes d'étudiants, due à l'absence d'interaction et au manque d'outils adaptés. Les auteurs soulignent ainsi que le numérique intégral, notamment dans ce contexte contraint, entraine des difficultés à plusieurs niveaux, puisque tous les enseignants et les apprenants / étudiants « ne sont pas égaux face aux tâches numériques proposées » (Descamps et al. 2020).

En prenant comme exemple le milieu universitaire, Denny (2020) réalise une étude auprès d'un groupe d'étudiants de deuxième année de licence en Sciences de l'éducation à l'université de Strasbourg. L'auteur constate que la difficulté majeure apportée par cette crise consiste en l'absence de toute anticipation face à cette situation inédite et la perte de repères déterminée par la transformation des routines : le rôle de l'enseignant, ainsi que celui de l'étudiant, changent complètement, car l'enseignement repose intégralement sur des plateformes numériques. La figure d'autorité de l'enseignant est désacralisée et devient « plus fraternelle, plus humaine », car « un contrat tacite se dessine avec l'enseignant qui fait l'effort de retravailler ses cours et qui s'implique dans une dimension affective ressentie comme plus vraie » (Denny, 2020). D'autre part, l'étudiant participe de façon plus directe à l'apprentissage (car il est davantage sollicité et mis en situation d'autonomie), s'implique aussi dans cette dimension psychoaffective dans les relations avec l'enseignant et attribue un sens et une valeur aux tâches universitaires.

Dans ce changement rapide et souvent brutal des pratiques, de nombreux points sont concordants avec les apports précurseurs de Dieumegard et Durand (2005) et de Massou

et Lavielle-Gutnik (2017). On retrouve ainsi chez eux l'abandon du tutorat et de la relation face à face de l'enseignant et de l'étudiant en échange des espaces institutionnalisés comme la plateforme Moodle. La communication directe est remplacée par la communication différée lorsque les cours sont donnés en modalité asynchrone et les étudiants sont obligés constamment de se construire de nouveaux repères. La communication et les liens sociaux sont mis à l'épreuve dans le milieu universitaire comme dans toute la société et certains auteurs comme Conrath et Ouazzani (2020) mettent en débat les effets néfastes de cette distance prolongée, ils se questionnent sur l'utilité réelle et à long terme des outils numériques qui se développent sans cesse et qui ont tendance évidente à se substituer au « présentiel » et à engendrer de nouveaux modes d'interaction. Mais, au-delà des difficultés, il faut souligner également l'apport majeur de ce changement des routines qui suscite aussi une plus forte capacité d'adaptation, de création et de conception d'activités et de scénarios pédagogiques. Guironnet (2020) souligne dans ce sens que « par la force des choses, le virtuel devient réalité tangible et ce quotidien permet de créer de nouveaux scénarios pédagogiques, de nouveaux cadres de pensée, de fonctionnement avec une interactivité et une créativité différente de « l'école d'avant » ».

C'est en réfléchissant à tout cet ensemble de points négatifs et de points positifs - vécus au quotidien par notre expérience d'enseignement et soulignés par les différentes recherches - que nous avons entamé cette étude. Avant de décrire l'enquête proposée auprès de nos étudiants, nous allons décrire le contexte institutionnel et pédagogique dans lequel elle se situe.

2.2. Typologie de l'enseignement dans une université roumaine avant la pandémie due à la COVID-19

En mars 2021, à la suite de la proclamation de la pandémie par l'OMS (https://www.who.int/fr/news/item/29-06-2020-covidtimeline), le président de la Roumanie a émis le décret qui a proclamé l'état d'urgence sur le territoire de la Roumanie. Le lockdown général a continué avec l'état d'alerte médicale renouvelé à plusieurs reprises, ce qui a eu le même effet : l'interdiction d'aller à l'école. Les élèves de lycée se sont retrouvés dans une situation exceptionnelle, qui les a obligés de suivre le deuxième semestre de l'école sous une forme non expérimentée jusque-là. Le travail en ligne s'est révélé être un quasi-échec, dévoilant des failles profondes dans la formation des enseignants, jamais exposés à ce type d'activité didactique (les rares exceptions ne peuvent pas être évoquées en tant que régularité).

Au niveau des élèves, le choc a été tout aussi puissant, parce que les habiletés de travailler sur des dispositifs électroniques et sur des réseaux sociaux étaient loin de ce qui leur fallait pour valoriser leurs connaissances de manière systématique, dans le cadre de leurs études obligatoires. Les élèves ayant obtenu le diplôme de baccalauréat dans un contexte hors normes en 2020, sont devenus au mois d'octobre de la même année la première génération d'étudiants n'ayant jamais franchi les seuils d'un amphithéâtre.

Presque chaque université roumaine fournit une double orientation: cours de jour en présentiel respectivement e-formation à distance. Entre ces formes d'enseignement, il existe de nombreuses similarités de fond (au niveau des matières scolaires, des contenus, de l'évaluation, des diplômes) et quelques différences de forme (en relation avec la subvention financière, les bénéfices financiers tels que les bourses sociales et de performances, la forme d'organisation didactique et les instruments associés).

L'e-learning existe alors depuis longtemps, il n'est pas apparu une fois la pandémie déclarée. Cette formation est un choix assumé par des personnes qui ne peuvent pas se dédier exclusivement aux études, des personnes qui choisissent de compléter leur formation pour mieux s'adapter au marché du travail, qui ont déjà un emploi et veulent le maintenir ou se qualifier pour avancer dans la carrière. Eux, ils assument complètement les éventuels désavantages et prennent pour avantage exactement ce qui pourrait être perçu comme

désavantage par les étudiants qui se dédient exclusivement aux études : la dispense de la présence physique hebdomadaire aux cours, l'absence du contact permanent avec l'enseignant et les collègues et surtout ce que le jeune a investi dans la projection imaginaire de la vie d'étudiant ou du statut d'étudiant.

Pourquoi les études à distance en confinement ne sont-elles pas identiques avec l'e-learning déjà en place ? Tout simplement parce qu'elles s'accompagnent de l'obligation et de la contrainte de faire autrement de ce que les attentes des jeunes apprenants auraient laissé croire. En plus, on associe inconsciemment une dimension d'interactivité ou d'interaction comme garantie du succès de l'apprentissage ; or, l'expérience le prouve que le plus souvent, malgré leur présence physique dans la salle de cours, les étudiants posent très rarement des questions et sont assez loin d'une implication totale dans la vie étudiante.

3. L'enquête proposée aux étudiants roumains en sciences économiques

Afin de saisir de façon plus précise les difficultés ressenties par ces étudiants novices, durant leur première année universitaire et dans un contexte si peu propice à leur formation en tant qu'étudiants, nous avons conçu un questionnaire qui a été complété en ligne. Une autre étude a déjà été réalisée dans la même faculté, sur un public plus hétérogène comme niveau d'études et qui étudie l'anglais. Cette étude (Sim et Pop, 2020) s'est proposé de décrire certaines analogies et différences entre les cours en face à face et en direct en ligne. Elle a visé principalement les enseignants et a mis en évidence les conclusions suivantes : les élèves préfèrent le type d'apprentissage traditionnel en face à face, tandis que l'enseignant reste un guide pour les étudiants, un facilitateur très créatif et innovant, apportant des idées nouvelles.

3.1. Méthodologie

En ce qui nous concerne, deux études majeures se trouvent à la base de notre réflexion et de la construction du questionnaire. D'une part, l'étude de Drissi (2010) qui met en évidence les caractéristiques des questions en ligne, dans un environnement vidéographique synchrone et qui souligne la nécessité de savoir alterner de façon adéquate les cadres communicationnels pour mener une interaction d'enseignement/apprentissage en ligne. Cette étude nous a inspiré la série de questions autour de la communication en classe de langue, du ressenti des étudiants par rapport aux occasions de communiquer, de s'exprimer de façon directe, dimension essentielle de l'apprentissage d'une langue étrangère. D'autre part, la thèse de Quentin (2008) concernant l'accompagnement tutoral dans les formations en ligne et les catégories d'interventions tutorales, organisées autour des composantes pédagogique, socio-affective, organisationnelle et technique.

3.2. Questionnaire et public cible de l'étude

Un questionnaire avec une quarantaine de questions a été distribué aux étudiants en première année qui étudient à la Faculté des Sciences Economiques d'Oradea, une ville en pleine expansion située à la frontière ouest de la Roumanie. Plusieurs spécialisations ont été visées : Comptabilité, Finances et Banques, Marketing, Management et Économie du Commerce, du Tourisme et des Services. Ces étudiants ont un cours et un séminaire de langue étrangère toutes les deux semaines dans le premier semestre, respectivement un cours toutes les deux semaines et un séminaire hebdomadaire pendant le deuxième semestre. À la fin de chaque semestre, ils passent un examen ; la note finale se compose de la moyenne des évaluations du cours et du séminaire, l'assiduité étant prise en compte. Au moment de l'investigation, les sujets sont en deuxième semestre, ce qui laisse supposer qu'ils peuvent s'exprimer par rapport à plusieurs aspects de leur vie universitaire.

65 étudiants sur 105 qui étudient le français en première année ont répondu aux questions, ce qui représente 62% du total inscrits en français et environ 80% si l'on prend en compte

l'assiduité. Au total, 54 étudiantes et 11 étudiants, avec un âge moyen de 18-19 ans. Parmi les répondants, 16 étudiants travaillent pendant leurs études.

En ce qui concerne les compétences en français, 2 étudiants sont des débutants et ils n'ont pas étudié le français avant leur cursus universitaire, alors que les autres se partagent la plage de manière relativement équilibrée : 24,6% ont étudié entre 2 et 4 ans, 18,5% entre 4 et 6 ans, 33,8% des étudiants ont déjà étudié le français depuis au minimum six ans, tandis que 20% l'étudient depuis plus de 8 ans.

4. Résultats obtenus

Nous allons présenter les résultats de cette enquête selon le modèle proposé par Quentin (2008) et exploité également par Descamps et al. (2020).

4.1. La composante technique

Cette composante met en évidence la présence ou le manque de compétences numériques, l'accès à l'outil informatique et à l'internet ou la fracture numérique. Nous avons interrogé également la typologie des outils numériques utilisés par les étudiants pour les cours en ligne et les cours de français plus précisément.

Les dispositifs les plus utilisés sont le téléphone (47 étudiants), l'ordinateur fixe (44 étudiants), l'ordinateur portable (10 étudiants) ou la tablette (2 étudiants). Certains utilisateurs varient les supports d'une séance à l'autre.

Selon Guironnet (2020), l'équipement utilisé influence beaucoup la qualité et la quantité du travail fourni par les étudiants surtout en ce qui concerne la lecture des textes et la production écrite. De cette façon, pour notre public cible, la composante technique prise en compte ne devrait pas influencer de façon négative l'expérience des cours en ligne, car les étudiants bénéficient de bonnes conditions de travail. Mais l'utilisation du téléphone restreint de manière significative les tâches didactiques qui peuvent être réalisées.

4.2. La composante organisationnelle

Nous nous sommes intéressées au temps accordé par nos étudiants aux différents cours en ligne et plus précisément au cours de français. La plus grande partie des étudiants consacrent entre 50% et 95% de leur temps aux études en général, alors que pour le cours de français ils consacrent majoritairement entre 50% et 75% du temps qu'ils estimeraient nécessaire pour obtenir de la performance. La nouvelle expérience introduit la famille comme facteur en présence, ce qui peut troubler l'implication totale et la concentration aux cours en ligne.

4.3. La composante pédagogique

Le mode en ligne est considéré comme étant plus efficace par 32,3% des répondants, par rapport au mode face-à-face. Ils argumentent leur point de vue en mentionnant des éléments comme l'accès à plusieurs ressources considérées comme « aide » (dictionnaire online, sites, instruments de travail) ; la possibilité de revenir sur un certain document, chargé sur la plateforme par le professeur ; la préférence pour le travail avec l'ordinateur ; l'opportunité d'apprendre plusieurs choses nouvelles ; la commodité et le confort d'étudier depuis chez soi ; la facilité de chercher l'information ; la possibilité de se renseigner en temps réel sur plusieurs sites ; la chance de travailler à son rythme.

L'argumentation en faveur du face-à-face est fondée sur les aspects suivants, déterminants pour presque 70% des étudiants interrogés : l'importance de l'interaction avec l'enseignant et les collègues ; l'incapacité de l'ordinateur de capter l'attention ; la difficulté d'apprendre seul.

Les étudiants en première année ont des attentes, mais ils n'ont pas d'expérience. 97%

d'entre eux sont étudiants pour la première fois, donc ils ne connaissent pas les particularités d'une formation universitaire en face à face. Il manque par conséquent de leur argumentaire des éléments tels que ceux cités dans l'étude de Denny (2020) : l'amusant, le récréatif, l'intention de ne pas décevoir le professeur, la logique du don et contre-don, l'accent sur le support et non pas sur l'affectif, la privatisation des relations, l'accent sur l'analyse et l'interprétation en défaveur de la mémorisation des cours, la capacité attentionnelle, l'approfondissement par soi-même, la pression du copié-collé, la fonction cathartique du savoir appris, le sentiment de culpabilité pour toute forme d'oisiveté, l'intensité du rythme et du travail en ligne par rapport à la lenteur ressentie en face à face, etc.

L'activité didactique se déroule sur une plateforme Moodle, sur laquelle sont enrôlés tous les étudiants, dans des pages des disciplines scolaires correspondant à leur formation spécifique. Ils ont accès à tous les matériels, chargés à raison hebdomadaire par chaque enseignant. Lors du cours une session de chat et ouverte, qui permet une communication écrite directe.

L'un des grands minus de cette version de plateforme utilisée dans l'université analysée est l'absence de la facilité audio et vidéo, qui n'est pas intégrée dans les options d'usages. Pour pallier ce manque, les enseignants choisissent d'ouvrir des séquences de communication audio-vidéo, utilisant des applications de visioconférence telles que : Zoom, Skype, Google Meet ou Teams. Celles-ci permettent de communiquer à l'oral, de partager l'écran, de transférer aux étudiants l'option de partage de l'écran. Pour Guironnet (2020), le « lever la main » pour avoir la parole et le micro rendu audible par la manipulation de l'enseignant ou de l'étudiant sont des éléments facilitateurs des plateformes, qui dynamisent le dialogue.

Malgré les difficultés soulignées, les étudiants identifient également l'apport positif de cette période et il est rassurant de découvrir leurs réponses concernant notamment l'intégration des nouvelles technologies dans l'acte d'apprendre (52,3% des étudiants) et une meilleure gestion du temps de travail (41,5% des étudiants).
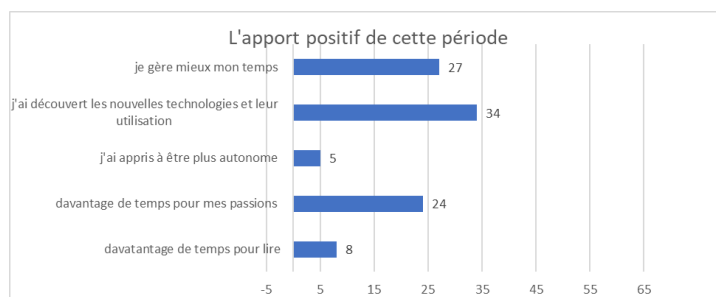
Figure 1. Qu'est-ce que cette période vous a-t-elle apporté de positif ?
Source : Questionnaire mars-avril 2021

Nous avons également souhaité interroger les avis et les préconisations de nos étudiants par rapport à l'avenir des cours universitaires. Ainsi, s'avère-t-il intéressant de remarquer d'une part le nombre d'indécis (19 étudiants, représentant 29,2% de l'effectif total), ce qui est révélateur de leur manque d'expérience, car débutants dans le monde universitaire. Et, d'autre part, les préconisations de 26 d'entre eux (40% de l'effectif) pour un enseignement hybride. Très peu d'étudiants (6) envisagent un enseignement intégralement en présentiel, alors que l'enseignement à distance est plébiscité par 14 étudiants (21,5%). Il est ainsi évident que le « distanciel » est de plus en plus envisagé par nos étudiants et considéré comme étant une modalité d'enseignement/apprentissage nécessaire et incontournable désormais.

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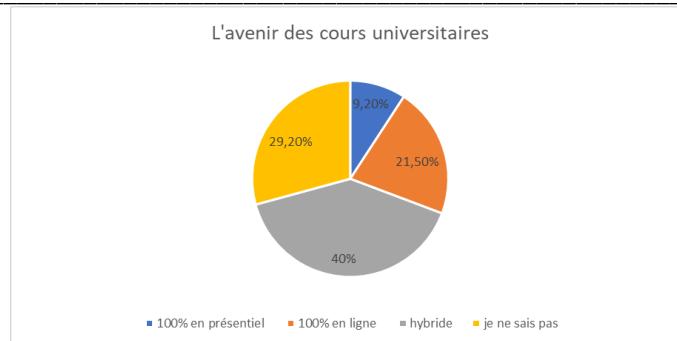
Figure 2. Quel avenir pour les cours universitaires ?
Source : Questionnaire mars-avril 2021

4.4. La composante socio-affective

Concernant cette composante, notre intérêt s'est porté sur le vécu durant les cours de français : les étudiants ont eu ou bien l'impression d'être « bien accompagnés » (47 étudiants, représentant 72,3% de l'effectif interrogé) ou bien « isolé » (18 étudiants, à savoir 27,7% du total). Les sentiments vécus par rapport à ce cours sont partagés entre l'indifférence (1 étudiant), le stress (8), le manque de motivation (4), la relaxation (19), la curiosité (44), la motivation (26), l'intérêt (1), l'absence de sentiment (5). La question portant sur l'évaluation du stress ressenti et de ses causes éventuelles, nous a offert des réponses intéressantes : l'horaire du cours est perçu comme un élément stressant par 25 étudiants, l'absence d'interaction avec l'enseignant par 18 étudiants et l'absence de la communauté de collègues par 13 étudiants. Alors que pour 24 étudiants, rien ne semble constituer un élément déclencheur de stress.

Le graphique ci-dessous regroupe les réponses obtenues à la question concernant les manques ressentis par rapport au cours de français : nous remarquons ainsi que ce qui manque le plus à nos étudiants est la présence effective dans une salle de classe (notée par le maximum par 35 étudiants), suivi par le contact direct avec le professeur et le contact direct avec les collègues.
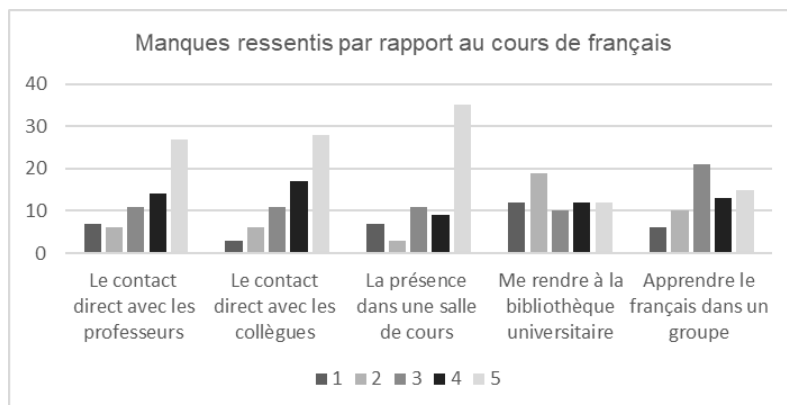
Figure 3 : Qu'est-ce qui vous manque le plus ?
Source : Questionnaire mars-avril 2021

Cette composante a un impact majeur sur l'approche individuelle des participants au cours, parce que, selon Dugas et al. (2020), « l'être humain n'agit pas comme un robot calculateur et froid, que ses caractéristiques – dont ses émotions – troublent la logique prédictive ».

L'impact du confinement est extrêmement inquiétant et l'ample étude de Bourion-Bédès, S. et al. (2021) démontre que l'anxiété lors du verrouillage en raison de l'épidémie de COVID-19 peut atteindre plus de la moitié des étudiants d'une région touchée par la maladie.

5. **Conclusions**

L'expérience de l'apprentissage en confinement est apparue au commencement comme une expérience déstabilisante. Au fur et à mesure, l'obligation et la contrainte se sont amoindries, pour faire face à l'habitude et même à la performance. Le travail en ligne représente un défi à tous les niveaux et tous les acteurs impliqués sont amenés à s'y plier. Les enseignants se sont familiarisés avec les facilités des plateformes didactiques et avec les instruments de type visioconférence. Les étudiants en première année, interrogés dans notre questionnaire ont vécu des changements en matière de leur comportement adaptatif et de leurs attentes. Ils sont conscients de l'appauvrissement à propos des expériences sensorielles : le contact avec les collègues, l'expérience de l'amphithéâtre, de l'audition d'un cours magistral avec tout le cérémonial symbolique, l'expérience de la pause, de l'activité par proximité personnelle. Mais ils commencent à constater que l'on peut fonctionner de manière optimum, en attendant l'ouverture des portes physiques de l'université.

Les étudiants qui ont subi le baptême de l'université à travers un écran ne peuvent pas faire des analyses consistantes relatives à la situation donnée. Ils se rapportent seulement à leur expérience de lycée et les arguments principaux invoqués tournent autour de la proximité physique étudiant - étudiants - enseignant - enseignants et de leurs rapports réciproques. Il y a tout un imaginaire construit autour du moment où l'on devient / l'on est étudiant. Il y a des expériences communes et des souvenirs qui se capitalisent. Or, derrière un écran, ce tableau perd de contours.

Si l'accent est mis dans certaines recherches sur la continuité pédagogique (Wagnon, 2020), dans notre cas on parle de l'instauration dans un contexte pédagogique inaccoutumé, car vécu pour la première fois. D'ici l'inquiétude initiale de la part des enseignants et des étudiants, amenés à une harmonisation et une optimisation de l'activité commune et individuelle.

Il semblerait que cette étape de passage général accéléré au numérique aurait un vrai effet de levier, pour d'aboutir à une société apprenante, qui mise sur l'éducation tout au long de la vie, car « inventer l'éducation supérieure du XXIe siècle suppose de passer à une pédagogie active, intégrant les apports du numérique » (Tadei et al., 2017 : 6).

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ECONOMIC AND SOCIAL IMPACTS OF COVID-19 IN THE PAST YEAR IN THE EUROPEAN UNION, WITH SPECIAL REFERENCE TO ROMANIA AND HUNGARY[1]

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Abstract: *The COVID-19 pandemic in early 2020 has made a big difference in the lives of all countries around the world. This study is the first part of a 9-months student research work started in 2021 February, based on literature research. Its aim is to present and summarize the major economic and social impacts of the coronavirus epidemic on the macroeconomy and industrial sectors during a one-year period. Our research is mainly based on secondary research methods - and accompanied by data from the most up-to-date statistical databases and other current research studies, we drew conclusions based on our own calculations in connection with the 27 member states of the European Union including Romania and Hungary. As a result of epidemiological measures in national economies, the role of certain sectors has shrunk, while other sectors have undergone tremendous development. The unprecedented spread of teleworking, the reduction in working hours in almost all sectors and the consequent lower wages, and the increase in the unemployment rate, have led to a decline in the value of gross domestic product for all nations, compared to the same period of the previous year. In order to save their country from the collapse of the economy, those responsible for managing them, were also forced to introduce measures that increased the country's state debt and worsened their public finance position. Certain sectors of the economy have been hit hard by the effects of the past year, but there have also been those that have flexibly adapted to the changes. The sectors responded in different ways in each country. It can be argued, however, that the entertainment industry, performing arts and other services that require a personal form of presence have suffered the most from the constraints of the past year. But in the field of information and communication, there have been positive developments in many countries using the opportunities offered by information technology. However, changes during the pandemic period have led to a further increase in wealth inequalities in our world. As a result, unfortunately, more and more people are falling into deep poverty and the number of wealthy people is also increasing. The transformation of consumers' values and income situation is having an impact on all sectors of the national economy. The question arises: when will declining companies be able to recover, will they be able to make the profits typical of their pre-epidemic management, and if so, when? Can we live in the future the way we lived in the past? Whether humanity will realize, that the growing differences between continents, countries, people are only creating larger controversies, and at last we do not only realize, but act in a responsible way for the sake of equality for all.*

Keywords: *Covid-19, European Union, Romania, Hungary, socio-economic impacts*
JEL Classification: *E00*

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1.   The appreciation of the role of the local economy

We live in the age of globalization and networking. From an economic point of view, through cross-border infrastructure networks, a country has not only trade, but also economic and even cultural relations with several other countries. That is why the COVID-19 pandemic, which appeared in the spring of 2020, has spread almost everywhere in the world, and thereby has brought about significant changes in the social and economic life of national economies. This tiny virus has shown, that everything in our world is connected to everything, and how much a tiny change can affect the lives of the whole world. (CSIZMADIA, 2020)

As a result of the pandemic, international trade turnover fell by almost a fifth. Following the outbreak, supply disruptions at companies have become commonplace. The shortage of materials occurred especially in companies that use just-in-time inventory management and procure their production equipment from distant countries. (PÉNZÜGYI SZEMLE, 2020)

As a result of travel and transportation restrictions, regional supply chains have come to the fore in global supply chains, and there has been an increasing emphasis on protecting national markets in all countries of the European Union. (CSIZMADIA, 2020)

2.   Impact of the COVID-19 pandemic on the macroeconomy

Figure 1 shows the changes in the value of some macroeconomic indicators in Romania, Hungary and the 27 Member States of the European Union, for the period 2017-2020. It can be stated that, considering the GDP growth rate, both Romania and Hungary have performed above the EU-27 average in recent years. In 2020, compared to 2019, GDP decreased by -3.9%, in Hungary it fell by -5.0%, while in the EU it fell by -6.2% However, the rate of decline was almost the same in Romania and the Community (RO: 8 percentage points, EU-27: 7.8 percentage points), but Hungary had the highest value at 9.6 percentage points. Regarding the annual inflation rate, we see a continuous decrease in Romania and the EU-27 from 2018, which is favorable for the economies, but in Hungary there is a gradual increase from 2017, which will have a cumulative negative effect on the people. In terms of the unemployment rate, during the period under review, Hungary and Romania subsequently showed lower values than the community. Examining the general government balance, we can state that in the EU it was below -1% of GDP every year, and both in Romania and Hungary it was similar. However, the year 2020 hit the economies of both countries very badly. Hungary experienced a larger decline of 6.5 percentage points compared to 2019 than Romania (5.3 percentage points), despite the fact that the general government balance of the latter nation was less favorable in 2020 (9.8). Overall, macroeconomically, the changes brought about by the pandemic in 2020, have put a significant strain on the national economies. This is also supported by the fact that between 2017 and 2020, the government debt ratio in Romania, as a percentage of GDP, increased from 35.4% to approximately 45%.
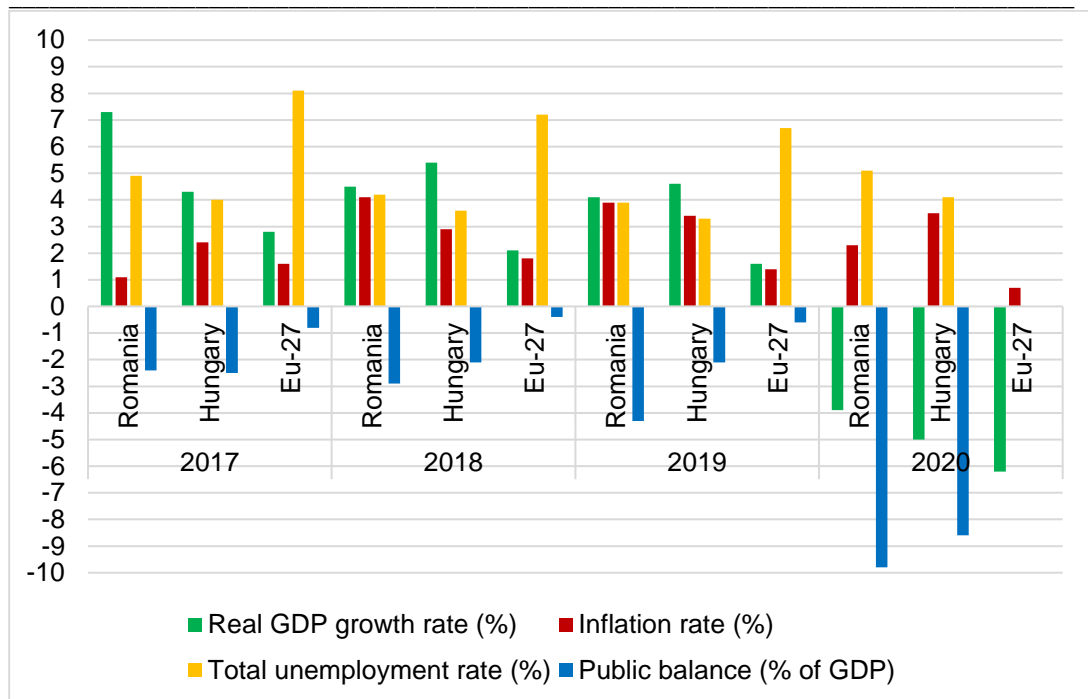
1.   Figure: Development of macroeconomic indicators for Romania, Hungary and the EU-27, in 2017-2020
Source: Own editing based on the data of EUROSTAT (2021b; 2021c); MKI (2021); Papp (2021); Csiki (2021)

The ratio of Hungarian public debt changed to a much greater extent, as its rate reached an unprecedented peak of 81.2%, which meant a 15.8 percentage point deterioration, which is 1.5 times of that in Romania. However, on average in the EU-27, public debt can reach 94% of GDP, said one of the leading economists of the International Investment Bank. (Index, 2021)

Among the Central and Eastern European Member States, the Czech Republic has introduced the largest fiscal incentive package in the region as a result of the coronavirus pandemic, accounting for 14% of GDP, compared to 8% in Hungary, 6% in Slovakia, 5% in Bulgaria, and 4% in Romania. The central banks of Hungary and Romania have also launched quantitative mitigating programs, which, combined with other liquidity measures, have significantly mitigated the risk of a financial crisis (by averting the potential threat of frozen debt markets and blocking bank lending).

This economic crisis cannot be described as a typical one, or even similar to the 2008 crisis. The global financial crisis of 2007–2008 and its effects on the industrial sectors were detailed by Kiss (2017) in his study.

Table 2 shows an analysis by Elliott Auckland, chief economist at the Budapest-based International Investment Bank (IIB). It turns out that in 2021 and 2022 the GDP growth rate in the examined regions will change in a positive direction, and as a result, Hungary's GDP may reach the level of 2019 in the third quarter of 2022. This can be almost a year earlier than in the rest of the European Union, which is expected to reach its 2019 performance only in the second quarter of 2023. Now Romania, overtaking the above, could reach it as early as in the second quarter of 2020.

Table 2. Expected GDP growth values (%)

Designation	2021	2022	Restore GDP to 2019 levels
Hungary	4.3%	4.7%	Q3, 2022
Romania	3.5%	4.1%	Q2, 2022
EU-27	4.1%	3.0%	Q2, 2023

Source: Index (2021)

3. Impact of the COVID-19 pandemic on the labor market

The pandemic has changed the way the whole world works, so it has also had a significant impact on people's lifestyles. In order to reduce social contacts, more and more companies have introduced work from home. According to the EUROFOUND survey, in 2020, 1/3 (33.7%) of workers in the 27 Member States of the European Union worked exclusively from home, 38.9 hours a week, 14.2% spent alternately half of their working time at home and half at their employer, while 52.1% of them worked outside their home (at the employer's premises or other external locations). The proportion of people working in the home office in 2020 (33.7%) is quite higher than in previous years (Table 1), thus the modifying effect of the COVID-19 pandemic in the field of work can be strongly felt. (AHRENDT ET AL, 2020)
Based on the research results of EUROFOUND, the home office is closely correlated with the level of education. In 2020, 74% of workers with higher education, 34% of those with secondary education, and only 14% of primary school graduates worked from home in 2020. Most of those working in education (more than 60%), finance (50-60%) and administration (40-50%) worked through telework. However, working from home has also occurred in industry, construction, agriculture, transportation, commerce, and health care. In terms of gender, more women worked from home than men. Telework was most popular among workers over the age of 65, followed by members aged 15-29, followed by those aged 30-49. The fewest teleworkers came from the 50-64 age group. Surprisingly, the majority were teleworkers who do not have a dependent child. The number of people working exclusively from home varied considerably per Member State. In Croatia, Poland, Slovakia, Bulgaria and Hungary, about one fifth of workers, in France, Spain, Italy, Ireland more than 40% of employees, and in Belgium more than 50% teleworked. (AHRENDT ET AL, 2020)
Prior to the outbreak of COVID-19, home office use was least prevalent in Romania, among European Union Member States. In 2010, 0.1% of Romanian workers and in 2019, 0.6% worked telecommuting. Apart from Romania, of the Member States, Bulgaria, Cyprus and Italy had less than 2% work from home. Although Romania has so far been at the bottom of the EU list of teleworkers, the proportion of people working from home has also increased since the appearance of the coronavirus. According to a EUROFOUND survey, in July 2020, 24% of employees worked in a home office. (PENGŐ, 2020)

Table 1: Proportion of home workers in the 27 Member States of the European Union

Years	Proportion of home workers in the 27 Member States of the European Union
2010	11.2%
2011	11.4%
2012	11.7%
2013	11.8%
2014	11.7%
2015	12.9%
2016	13.1%
2017	13.1%
2018	13.5%
2019	14.3%

Source: Own editing based on (EUROSTAT, 2021a)

In addition to the proliferation of working from home, there are a number of changes in the labor market. As a result of the coronavirus, more and more workers were employed part-time. In the European Union, the working hours of employees has fallen by an average of 3.7%. The largest change was in Italy, where the employment time of employees fell by 9.7%, while in Slovakia it fell by 8.7%, and in Greece and Austria, by 7.9%. Finland is an exception to the general trend, with an increase of 0.2% in employee working time. The decline in working hours occurred to varying degrees in different sectors. The effects of the COVID-19 pandemic are most pronounced in trade, catering industry and construction. Employment time decreased by 52% in the above sectors, 48% in transportation, 47% in industry, 36% in services and education, 30% in the financial sector and 24% in the agricultural sector, while there was a 23% decrease in employment time in health care workers and 21% in the public sector. (AHRENDT ET AL, 2020)

Part-time employment has become much more common for women than for men. As a result of the coronavirus, women's working hours were reduced by an average of 5.2%, while those of men were reduced by 4.9%. In Italy, Slovakia, Greece, Austria and Portugal, the emergence of the coronavirus has had a particularly large impact on women's lives. On average, women's working hours fell by 10.3% in Italy, 10.2% in Slovakia, 8.3% in Greece, 7.8% in Austria and 6.3% in Portugal. Men's employment time fell the most in Italy (-9.3%), Austria (-8.0%), Hungary (-7.9%) and Malta and Slovakia (both -7.6%). (EUROSTAT, 2020) Also, according to the EUROFOUND questionnaire survey, 10% of respondents left the labor market after the outbreak of COVID-19. 80% of them became unemployed, while 20% became inactive. Those in the latter group retired, became ill, became students, or became homemakers. Altogether, 10% of employees lost or left their jobs voluntarily. Only 3% is the proportion of those who entered the labor market after the COVID-19 pandemic became widespread. (AHRENDT ET AL, 2020)

In 2020 the coronavirus affected the most the labor markets of Spain, Cyprus and Greece. In Spain, 16% of responding workers lost their jobs, in Cyprus 15% and in Greece 14%. 12% of respondents in Hungary and Latvia, 9% in Bulgaria, France, Portugal, Romania, Ireland, Lithuania, Poland and Croatia, 8% in Finland, Denmark and Luxembourg, Austria, Estonia, Belgium, Slovenia and 7% of respondents in Italy, 5% in Germany, 4% in the Czech Republic, Slovakia, Malta and the Netherlands, and 3% in Sweden became unemployed following the outbreak of COVID-19. There is a small difference in terms of gender. On average, 9% of women and 8% of men in the European Union became unemployed. In particular, the pandemic changed the employment situation of workers aged 18-34, with 11% of women and 9% of men losing their jobs within the group. Besides the young age group, workers over the age of 50 suffered the most from the spread of the pandemic 8% of both women and men in this age group became unemployed Members of the 35-49 age group were least affected by the pandemic from a labor perspective. The employment situation of 9% of women and 6% of men changed as a result of the epidemiological situation. Research shows that more entrepreneurs have lost their jobs than employees in the European Union. Those with a secondary or lower education typically have a higher proportion of people who become unemployed than those with a higher education. (AHRENDT ET AL, 2020)

In Romania, the unemployment rate was 4.8% in April 2020, and this rate was down 7 percentage points in February. According to the Portfolio, the last time the country had such a high unemployment rate, was in the second half of 2017. According to a statement by the Romanian Institute of Statistics, in April 2020, the number of people officially registered as jobseekers, among members of the 15-74 age group, was 432,000. That number was less by 18,000 a year earlier and less by 59,000 two years earlier. Unlike the EU average, in Romania in the spring of 2020 the unemployment rate was higher for men (5.4%) than for women (3.9%). The value of the latter rates did not include unemployed people whose employment contracts were suspended after the onset of the pandemic. The number of persons belonging to the latter group in May 2020 was 430 thousand. (MTI, 2020)

According to the Statista, as of July 3, 2020, some 102,830 employment contracts have been suspended in Romania, due to the outbreak of COVID-19. In this country, tourism and catering services were the biggest losers in the pandemic, as 24,464 people could not work in that area after the outbreak. While 20,543 jobs in the manufacturing industry, a total of 8,996 jobs in the retail, trade and automotive industries were suspended. (SAVA, 2020)

4. The effect of coronavirus on the development of different sectors

Table 3 shows the change in the volume of gross value added in 2020 compared to the data of 2019, in the average of the 27 countries of the European Union, as well as in Hungary and Romania. The consequence of the COVID-19 pandemic is that in the whole quarter of 2020, compared to the same period of the previous year, the value added of the European Union economy decreased by 4.2% on average, while Romania by only 2.1%, at the same time Hungary by 6.9%. Behind these changes, we can see which sectors were most affected by the crisis. Not only in the average of the community as a whole, but also in Hungary, and not to mention Romania (-22.5), the arts, entertainment, leisure and other service sectors were most affected by the decline. Wholesale and retail trade, transportation, accommodation and catering services in the EU fell by more than 10%, but this sector in Romania was not so hard hit by the virus, it was able to adapt flexibly to the situation. In Romania, the area of production was the sector that had a harder time responding to the effects of the crisis. In Hungary, there was also a decline of over 10% in professional, scientific and technical activities and in administrative activities. However, in 2020 the EU-27 and Romania also saw positive changes compared to the previous year in terms of gross value added in real estate, information and communication, and in the sectors of public administration, education, health, defence and social work. Unfortunately, this cannot be said of Hungary, in fact, in 2020 the country was unable to increase the value of its gross value added production in any sector compared to 2019. In addition to the three sectors mentioned above, Romania has also achieved growth in the following sectors: construction, finance and insurance, professional scientific and technical activities, administrative and support service activities. Remarkable positive growth of 14.3% in information and communication.

Table 3: Volume change of gross value added in the whole quarter of 2020 compared to the same period of 2019 in the average of the EU-27 countries, Hungary and Romania

Measure	EU-27	Hungary	Romania
Agriculture, fishing and forestry	-1.3	-3.2	-9.2
Industry (except construction)	-6.1	-7.1	-9.2
Manufacturing	-6.5	-7.1	-11.6
Construction	-1.6	-8.9	6.7
Financial and insurance activities	-1.4	-2.3	2.8
Professional, scientific and technical activities; administrative and support service activities	-6.9	-11.1	4.6
Public administration, defence, education, human health and social work activities	1.4	-2.5	2.5
Wholesale and retail trade, transportation, accommodation and food service activities	-11.5	-12.4	-3.0
Arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies	-14.6	-12.4	-22.5
Real estate activities	0.8	-8.2	1.3
Information and communication	1.4	-0.5	14.3
Average	-4.2	-6.9	-2.1

Source: Result of own calculation, based on EUROSTAT 2021d data

5.   What lies ahead of us in the future?

One of the most serious consequences of the spread of the coronavirus is the further intensification of wealth inequalities. The non-profit organization Oxfam estimated in April 2020 that the COVID-19 pandemic could push nearly half a billion people, 1/16 of humanity, into deep poverty. Huge income inequalities are also shown by a study by Knight Frank, according to which the number of billionaires in the world is expected to increase by 27% over the next 5 years, further increasing social inequality among members of society. The number of people in the latter group will grow at the fastest pace in 6 Asian, 5 European and 3 African cities. Sweden is among the top 10 countries in the European Union in terms of the growth rate of the rich, and also Romania, not surprisingly, based on its analysis so far. (ÁRGYELÁN, 2020) The future impact of this negative process will only further strengthen the economic model in which our current economy operates, which is no longer sustainable. The world should think in an economic model in which the more realistic distribution of goods takes place with emphasis on natural goods and factors. To do this, on an individual level, personal responsibility must be strengthened in everyone. The resurgence of this personal responsibility has already shown its effect in defence against the pandemic. Going further, we consider it important to spread the attitude that everyone should consume only what and how much they need. Even though we live in a consumer society, let's live much more consciously and find our way back to the natural foundations instead of further increasing the distance between people using artificial intelligence. Let's create a world we would love to live in. We can start this by changing our previous habits on an individual level, reviewing them, and not wanting to adapt to expectations, established patterns, but to get to know ourselves and live accordingly. We may realize that we can cope with much less material goods and then get more for others!

It is uncertain, how long we can still feel the adverse social, economic and employment effects of the COVID-19 pandemic in the European Union. According to an analysis by Boston Consulting Group, the biggest hit of the pandemic affected international trade and had a lasting impact on it. Even if we manage to restore the 2019 status in this field by 2023, for sure, the map of the world economy will be significantly rearranged. Not only have the economies of many nations become unstable during this period, but geopolitical and domestic tensions have also increased, and a positive solution remains to be found. (PÉNZÜGYI SZEMLE, 2020) Nevertheless, according to a EUROFOUND survey, 68% of EU respondents were optimistic about their future. (AHRENDT ET AL, 2020)According to the report of the World Economic Forum, Hungary's preparedness for the next decade is just sufficient. Only our digital infrastructure preparedness is more favorable than that of the other three Visegrad countries. The most important aspect of competitiveness is to ensure a long-term vision for the economic operators. Without it, the willingness of the economic sector to take risks and the willingness to invest will decrease significantly, which will have an adverse effect on the further development of the economy. Furthermore, maintaining a single tax rate system in the event of a crisis will further worsen the economy's chances of recovery, so it would be worthwhile to reintroduce the multi-key form of taxation to the country with a fairer burden-bearing in mind. (PORTFOLIO, 2020)

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TEACHING BUSINESS ENGLISH FOR ACADEMIC PURPOSES

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Abstract: *Research and experience have long indicated that the acquisition of the mother tongue is different from the acquisition of a non-native language. Also, the efforts and the cognitive impact of language learning are different in childhood compared to adulthood, whereas young people and adults differ in the way they learn and should be taught a foreign language. Learning a new language at the level of a native speaker is a dream all students share, but it may well be impossible and also irrelevant in the context of the ever-changing landscape of a living language. Furthermore, it is common knowledge that the acquisition of a foreign language due to natural exposure or immersion offers better results than its acquisition in a formal learning environment. To complicate matters even further, studies show that acquiring a second language is usually much more difficult than acquiring a third language, for example. Despite all these though, the job of a language teacher, especially of adult students, needs to serve its purpose as well as possible. This article will look into some of the modern trends of teaching not just a foreign language (English), but a specialized one (Business English) to undergraduates in the context of a Romanian university. How can a teacher better accomplish this task? How useful can Business English prove to be to students taking it as a compulsory subject, not by choice? Are there methods to improve its acquisition, especially in the context of the current pandemic? The article will take a closer look at all these, with practical examples of good practices.*

Keywords: *Business English, teaching, foreign language acquisition*

JEL Classification: *A1; A2; A3; Y8*

Historical background of English as a second/foreign language

The history of teaching English as a foreign language spawned from the needs of multilingual societies, where people of various origins had to communicate in order to live. It is as old as Colonialism, when church people would try to instill a sense of religion together with language knowledge in the new-found people of mysterious lands. The more organized form of teaching a language per se appeared much later though, some authors like Cavanaugh claiming it was 'a truly American educational situation' that 'grappled with the problem of how to teach those who do not speak the common language' and 'wrestled with the question of what the common language should be' as 'the problem of a multilingual society is, of course, inherent in the problems of a multinational society'. (Cavanaugh, 1996)

The online dictionary of teaching English as a second language claims, along the same line, that the teaching of English as a lingua franca of business communication began as long ago as the 15th century, when the British trade routes were becoming larger and larger. However, the proper education in English began much later, just as in the case of the 'American situation'. The purpose of this initial spread of English was to help the growth of the Empire 'by passing a British world view down to the lower classes through legislation and local influence' while at the same time educating the 'upper-class colonists and local government officials, indoctrinating them with British ideas and culture, including the English language' (ESL dictionary, 2021). This is the main reason of English being the most learned language across the world for a very long time and perhaps the most studied by authors of second language acquisition.

The indigenous people in various territories across the world could not be taught in their entirety the new language of English, nor their language be forgotten completely, so a bilingual system was put in place. This was also helpful for the governance of the new lands as it brought the support of the population 'while holding to the beliefs and practices of the British' in the case of those in charge (Merriam-Webster, 2021). As David Crystal notes, 'a language has traditionally become an international language for one chief reason: the power of its people – especially their political and military power […] The history of a global language can be traced through the successful expeditions of its soldier/sailor speakers. And English has been no exception' (Crystal, 1997). However, it was the economic growth which ensured that one language, particularly English in this case, would hold its place as a lingua franca. The advent of technology ensured easier ways of communication and the media spread to extents never encountered before and these two factors combined to ensure the world domination of English. 'British political imperialism had sent English around the globe, during the nineteenth century, so that it was a language 'on which the sun never sets'. During the twentieth century, this world presence was maintained and promoted almost single-handedly through the economic supremacy of the new American superpower. Economics replaced politics as the chief driving force.' (Crystal, 1997).

Although English is not an official language in too many countries outside the Commonwealth and the United States, it remains the most studied secondary language in the world.

Source: Studies by the British Council (2016) and Pearson Learning/GSV Advisors (2013)

Figure 1: The popularity of ESL across the globe

Some linguists believe that it is no longer the exclusive cultural sign of native English speakers, but rather a language that absorbs aspects of cultures around the world as its influence expands. This has a two-sided effect: that of a continuous enrichment of the English lexicon with the addition of innumerable words from foreign cultures, but at the same time a bad influence on the existence and use of local languages, some of which being brought to the brink of extinction. For example, by exercising its domination over Wales, Scotland and Ireland, England imposed, in the past centuries, English as the main language while Welsh, Scottish and Irish were excluded from schools and administration. It was not until the 20th century that the United Kingdom government initiated a reanalysis of the

problem, stimulating the reaffirmation of these ancestral languages of the islanders and even granting them the status of a second official language, after English. However, few people still speak these languages and its users are of old age, whereas the interest in their existence has greatly diminished. If these will survive or not, only time will tell. As David Crystal observes, 'the arrival of English as a global language could directly influence the future of these or many other minority languages. An effect is likely only in those areas where English has itself come to be the dominant first language, such as in North America, Australia and the Celtic parts of the British Isles. The early history of language contact in these areas was indeed one of conquest and assimilation, and the effects on indigenous languages were disastrous'. (Crystal, 1997)

Context of teaching English as a second language
However, English as a language has developed immensely over time by assimilating influences. The lexicon of the language has words borrowed from over 300 languages and much if it is of Classical and Romance origin. The high degree of development of English has to do with it being alive, quite possibly one of the most dynamic and open to change language, particularly due to the fact that it is so widely used on the globe and in so many international contexts, benefitting from such a large input from other languages and cultures it co-exists with. Tom McArthur, the reputed Oxford linguist regards with circumspection the current status of English, with its variants, traditional and 'innumerable varieties' ranging from high to low registers, raising an important question: 'What does a lingua franca mean…with regard to English? […] The answer…had to be Standard English… but whose Standard English and what in any case constitutes the standard for a language whose users are counted in hundreds of millions worldwide?' (McArthur, 2001). He also claims that the ESL teaching would benefit from a single supranational standard language, offering the examples of Australia's and Canada's efforts to create an endonormative standard combining elements of the two longest existing exonormative standards of British and American English.

David Graddol also comments for a British Council research study that English has been affected by patterns of trade and more recently by work habits – including, it must be said, the last year's shift towards extensive online teaching. The author talks about the second language speakers being 'drawn towards the inner circle of first language speakers and foreign language speakers to the outer circle of second language speakers' (Graddol, 2006), this migration changing the needs regarding English as the language itself is changing and diversifying. There is a widespread belief among specialists that more and more people are becoming bilingual, especially since the age of learning a new language has dropped to one-year olds being taught English by private educators. In fact, with the world's population fluently speaking more than one language on a constant basis, the future of English may be ambiguous to a certain extent, as it may, at some point, become a second language worldwide, rather than the dominating lingua franca. These days, in truth, many companies consider English as a pre-requisite when recruiting: it goes without saying that future employees already speak English and the need of a second (or third, in fact) language emerges. Children have foreign baby-sitters who talk to them in English at all times, families are mixed and if not, they travel more than it used to happen in the past, most kindergartens offer classes of English from the start, state schools have included it in their curricula everywhere in the world and there is an abundance of private and language schools that teach children intensive English from an early age. There is also the question of the technologized global world we live in today and the youth being exposed to electronic devices from their first year of existence: their parents' smart-phones or tablets, computers and laptops, console and video games. Children today are tech-savvy and extensive tech-users, with English being a main tool for technology. For example, children spend hours playing computer games networking with children of similar age and interests across the

globe and the new lingua franca of their interaction is obviously English. If for example in the post-revolution years, Romanian children got exposed to cartoon channels that were mainly in English, thus learning it from their favourite characters, the Romanian children of today learn the language from the websites they visit, from the menus of their devices, from youtube or their video games. Their level will of course vary, there might be issues with their knowledge, but an increasingly number of students nowadays present this pattern. Specialist literature worldwide is struggling to analyze this phenomenon and its possible outcomes, psychologists, educators and parents are concerned with this fact, especially since the virus crisis of the last year has moved everything online - including face-to-face schools and courses. There are numerous opinions and studies, most of them raising the alarm, particularly from the point of view of children's healthy developments, but the situation is what it is and there is no turning back from it.

English for specific purposes
Discussing the characteristics of ESP since its advent in the world of English learning, Hyland states that 'ESP has consistently been at the front line of both theory development and innovative practice in teaching English as second/other language. Assisted by a healthy receptiveness to the understandings of different perspectives, ESP has consistently provided grounded insights into the structures and meanings of texts, the demands placed by academic or workplace contexts on communicative behaviours, and the pedagogic practices by which these behaviours can be developed. ESP is, in essence, research-based language education and the applied nature of the field has been its strength, tempering a possible overindulgence in theory with a practical utility. The success of this marriage of theory and practice has, I believe, been achieved because of clear emphasis on the idea of specificity, a concept fundamental to most definitions of ESP' (Hyland, 2002). The author pleads for a need of in-depth research in the field, as this will help educators be more prepared for their students and cover the linguistic aspects of ESP: 'its heavy dependence on a strong research orientation…highlights the importance of target behaviours …which, in turn, has influenced the kinds of data we collect, the ways we collect it, and the theories we use to understand it.' (Hyland, 2002)
Authors like Swales defines ESP as part of the larger field of Language for Specific Purposes (LSP), more precisely: ''the area of inquiry and practice in the development of language programs for people who need a language to meet a predictable range of communicative needs." (Swalws, 1992), whereas Dudley-Evans and John describe ESP following a three-level model: its purpose is to meet the student's needs only, so it is very specific, it only uses core methodology and activities adapted to the purpose, it focuses on specific activities designed to teach grammar, lexis, register, study skills, discourse and genre suitable to the needs of the learners. Apart from these fundamental values, there are other five more flexible characteristics of ESP: its direct relation and influence on specific disciplines, the use of a differentiated and specific methodology than that of General English courses, its usefulness mostly to adult learners, either university students, in-company learners or people opting for a specific language institute and sometimes for high-school students in a specific context, ESP may be leveled from beginners to proficient learners but it is mostly taught to intermediate students onwards, as the majority of ESP courses imply some previous language skills (Dudley-Evans, John, & Jo, 1998). Being practically-orientated, Dudley-Evans and St John description of ESP is that of a distinctive methodological approach which highlights the more specific learner needs and a set of teaching patterns that take into account the fact that students often have in-depth knowledge in the field; hence the need for the instructor to be well-prepared, to undergo research on the matter prior to classes and to make sure all lessons are well-prepared in advance. Obviously, there is no need, nor real possibility to match the students' level of expertise, particularly if they are top-ranking executives or people with large experience of the field. However, courses need to be

updated and relevant on all occasions, as another characteristic of ESP courses, particularly English for business, is their applicability on the job market in real time. Usually people taking up Business English courses are people who need it, rare are the cases of people studying for it for themselves, as it may occur with General English.

Hutchinson and Waters discuss the advent of ESP as a response to certain emerging trends in the world of languages: firstly, the world advances in science, technology and economy that required more language knowledge to deal with these changes; secondly the revolution in linguistigs, 'the greatest expansion of research into the nature of particular varieties of English'; thirdly and most importantly a focus on the learners of the language 'seen to have different needs and interests, which would have an important influence on their motivation to learn and therefore on the effectiveness of their learning', which introduced real-life materials into the classroom and brought a focus on the needs of the students themselves, be it technology or commerce. This new teaching approach meant highly relevant courses for highly motived students. 'All three factors seemed to point towards the need for increased specialization in language learning.' (Hutchinson & Waters, 1987)
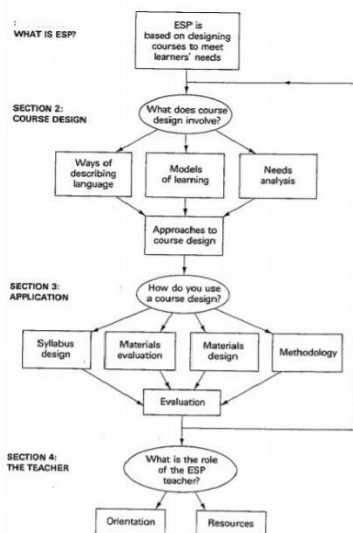
Figure 2. Hutchinson and Water's outline of a learning-centered approach to ESP (Hutchinson & Waters, 1987)

Business English

Business English is part of the wider category of English as a second language (ESL) or English as a foreign language (EFL), but it is also considered an ESP (for special purposes) type. Considering the above described expansion of the language itself and its important characteristic as being the world of trade, commerce and communication, it is only normal that Business English has gained such a high profile. If English was a global market - Business English would be its main currency. The term Business English is encompassing and includes all language items implied by business activities, spoken or written: business related vocabulary, important business communication skills like presentations, negotiations, meetings; contract-drafting, business letters, emails or report writing. It has a very specific character and very typical needs: for example, verbal communication (speaking skill) is of paramount importance, as most business is being done this way and less in writing. Grammar is obviously being studied, too, but always in close connection with a specific vocabulary and with a practical outcome, not per se as it might happen in a linguistic course,

for example. The main characteristic of Business English, especially taught in-company, is its practicality and applicability. People learning Business English do that for a practical and often immediate reason.

Business English appeared somewhat later in the field of research and then in teaching practice, as the main interest of ESP was on its Academic field and perhaps the Technological one. Bargiela-Chiappini and Zhang even claim that 'it was not until the 1990a that discourse analyses, contrastive ethnography, laid the foundation of a multimethod approach to business discourse […] literature on business communication considerably enlarged the original, narrow view of Business English as the teaching of the language for vocational purposes through linking linguistic performance with actual business activities' (Bargiela, Chiappini & Zhang, 2013).

There are also authors who claim there are important differences between English for Academic Purposes (EAP) and English for Business Purposes (BE), as the first deals with generic skills or language that may be useful across a range of disciplines or purposes, whereas the second is more customer-oriented and more practical in its approach, sometimes up to the point of establishing the content or curriculum with the input from students. BE resides more in the area of ESP, argues for instance Ken Hyland, claiming tis is 'largely due to ESP's distinctive approach to language teaching based on identification of the specific language features, discourse practices and communicative skills of target groups, and on teaching practices that recognize the particular subject-matter needs and expertise of learners' (Hyland, 2002).

However, the focus of the ESL world on Business English legitimizes its existence, it has been in high demands for decades now, never stopping, merely adapting to the needs of the learners and to the realities of the world around. The interest of the job-experienced learner is constantly taken into consideration by teachers, language schools and book publishers, who all adjust to the interest and needs of the learners in order to create content to respond to their demands. This is starting to show now, in times of pandemic, by the adaptation of teaching materials and format of courses to best suit the changes brought by the online medium.

Ruth Spack argued as early as 1998 the legitimacy of language teachers dealing with English for specific purposes, as they might lack the expertise and confidence to teach subject specific conventions, which might be better suited for subject specialists themselves. However, the specialists might be focused on research or their own field of expertise and might lack the methodology to do so, or simply have no interest in sharing their knowledge by teaching it to others. Another of Spack's much debated points was that English for specific purposes such as Business English might be too difficult for some students with lower levels of English; this might indeed be true, especially in the case of undergraduates of a university when students do not get to choose what subjects they have to study, like in the case of many Romanian universities; however this is not the case of adults taking up English for Business on their employer's request, as they might be highly motivated precisely because of this reason. Spack also claims there are generic skills and forms of language that are the same across a range of disciplines, professions, or purposes. This is true to a certain extent, as Business English for instance does have a highly specialized vocabulary, as well as very specific needs: language for presentations, for meetings and for negotiations (Hutchinson and Waters, 1987).

In Romania, Business English is taught to undergraduates in universities, as well as to Master's students in certain specializations, as part of their Business studies programme, for example in a BA, or at a faculty of economics. We are thus dealing with ESP as well as EAP at the same time. The content is adapted to the students' main needs, but less than in a language school, for instance. There is no opportunity for initial testing, nor for individualized feedback at all times, as the numbers of students are rather large. Also, there is no negotiated curriculum, nor immediate response to students' requirements – as with any

state institution, change takes time. However, the teaching materials are suitable and reflect the international market changes. Teachers work hard to offer students a real-life environment that reflects the business environment, although the classroom space and time does not always allow for role-play, for work in pairs or small groups or for a very interactive lesson. The pandemic meant more online teaching, obviously, and this allows for even less flexibility, but at the same time teaching becomes more technologized and students are happier this way. Be it face-to-face or online, the Business English teacher needs to take into account relevant topics such as real-life texts in reading, letters of intentions and resumes in writing, the business vocabulary, or topics like advertising or management, to give some examples. It is not an easy job and preparation time may be quite long, but at the same time, a BE university course needs to reflect the real world and respond to the needs of the market, as its main purpose is to prepare students for their future jobs.

The future of Business English looks bright; it is however important to take into account the role of Business English in the development of students and in the context of their studies. It is evident that many institutions offer special courses to young people in order to improve their abilities. However, more active actions and sophisticated multidisciplinary approaches towards Business English and English for Specific Purposes will encourage the researchers to get closer and to share their investigation with the community interested in the same field that will definitely lead to the new openings. Globalization will continue to fuel new demands and promote new visions not only towards of Business English but of the language itself. Teaching Business English in the challenging environment of today means being open to the changes on the job market and integrating technology into teaching, even beyond the restrictions of the pandemic. Teachers need to be flexible so as to adapt to newness successfully and be prepared for the next waves of change.

Or, as Dana Poklepovic writes for the blog of BESIG (Business English Special Interest Group of the International Association of Teachers of English as a Foreign Language): 'Teaching language structures is not enough to help learners interact effectively. To overcome this challenge, we'll need to integrate interpersonal and soft skills into the BE syllabus: for example, how to build trust, to be assertive, to give feedback, making effective questions, building relationships… Starting from a higher-level language level base, we may see an increase in the demand for short, more specific courses; e.g. English for Accountants, Legal English… This technological progress will impact on how we deliver our classes. Whether we teach face-to-face or online, learners will demand flexible learning formats. We can offer flexibility, for example, by including mobile-learning apps that allow students to access material, practice speaking, listening and also to share their files and videos with the group… Teaching intercultural aspects will be commonplace. In terms of language teaching, the focus will be on developing fluency and listening skills as well as working on quick response time' (Poklepovic, 2018).

All these are actual, updated teaching trends that need to be taken into account by language instructors, be it in an academic teaching context or elsewhere, because it is obvious that Business English will continue to flourish as long as there will still be a business world to put it to good use.

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ANALYSIS OF CROSS-BORDER COOPERATION IN THE CONTEXT OF SUSTAINABLE REGIONAL DEVELOPMENT

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Abstract: *The purpose of the article is to study the aspects of cross-border cooperation, analyzing the existing situation, barriers and difficulties in cross-border cooperation in the context of sustainable development. To carry out the research, the following methods were used: general scientific methods, in particular: generalization methods - for researching the essence and features of cross-border cooperation; systematization method - to determine the types of formation and implementation of interregional cooperation; Today, despite the development priorities and the main measures highlighted, there are a number of discouraging elements in practice. These are hidden in cross-border imbalances (social, technological and economic potential; information resources; human and social capital; institutional rules, laws and procedures), which do not allow for a long time further socio-economic development problems. The study of the development of European programs for regional development and cross-border economic cooperation allows to determine the important role of the institutional component of sustainable development, which has an effective impact on the environment of cross-border imbalances. The results of the study aim to develop the practice of cross-border cooperation in the context of cross-border imbalances in the context of sustainable development.*

Keywords: *Cross - border cooperation, cooperation programs, cross - border region, sustainable development.*

JEL Classification: *F2, F3, F5, O18*

1.Introduction

The need to address common problems in the cross-border region - adjacent border areas of neighboring states, such as: improvement and development of cross-border infrastructure, environmental protection, shared use of water resources, spatial planning, requires mutual and beneficial action in same time for both parties. At the same time, improving and deepening cross-border cooperation opens up new opportunities and reserves for intensifying economic activity in the peripheral territories of the regions, mobilizing the potential of natural resources and increasing competitiveness. These factors also guide the need to coordinate the development of cross-border regions.

One of the ways to achieve the objectives of local and regional development in the conditions of the new territorial organization of power is to intensify cross-border cooperation. In this context, we are talking about strengthening economic and humanitarian ties between the EU border and adjacent countries, inter-territorial cooperation in solving common problems, implementing joint cross-border projects and initiatives to realize the development potential of adjacent territories.

However, in order for border areas to use their geographical location and cross-border links as a competitive advantage, urgent issues need to be addressed in cross-border cooperation. This involves a series of steps to ensure cross-border cooperation on an inclusive transparent basis, the implementation of effective state support and the assistance

of territorial communities to achieve a sufficient level of competitiveness in the "fight for European funds".

2. Current state of cross-border cooperation

Cross-border cooperation generates a high level of interaction between neighboring countries, which leads to the creation of a safer and more predictable regional space (Rădoi, 2020).

Cross-border cooperation can be defined as "any type of concerted action between public and / or private institutions of border regions in two (or more) states" (Sousa, 2012).

At the heart of cross-border cooperation is the process of establishing links and contractual relations in border areas to find solutions to common and identical problems, and the "philosophy of cross-border cooperation" is that two adjacent border regions cooperate in developing plans and priorities, expand together, rather than working separately and then reaching an agreement on economic development plans. Cross-border cooperation consists in involving all social groups and administrative bodies for economic growth (Cross-border Collaboration and Portfolio Management of Research Infrastructures, 2017).

The Madrid Convention defines cross-border cooperation as "any joint action aim to strengthen and deepen good neighborly relations between territorial communities or authorities under the jurisdiction of two or more Contracting Parties and concluding any agreements necessary for this purpose" (Official Journal of the European Union, 2012).

There are four levels of implementation of cross-border cooperation:

- at international level: the policy of common European interests is implemented, the coordination of national regional policies for a balanced development of the European space is achieved;
- at state level: a national policy is designet to develop the cross-border cooperation and national interests are harmonized with the European ones, as well as the harmonization of national and regional objectives;
- at regional level: the regional policy of cross-border cooperation is implemented taking into account the interests of the state and local authorities, the coordination of actions between the regions of neighboring countries is achieved;
- at local level: the coordination of local government development plans is done with significant attention to regional and national interests, there is a concrete cooperation between the subjects of border areas.

Cross-border cooperation has become a factor that promotes social equality and is a tool for the development of all activities of local and regional border authorities in and today is introduced in various aspects of daily life in Europe (Medeiros, 2019).

- Cross-border cooperation is a specific field of international economic, political, environmental, cultural, educational and other international activities carried out at regional level, which, covering all general forms, have the following characteristics: presence of the border and the need for its arrangement, shared use of natural resources and finding a common solution to eliminate environmental security problems, wider mutual communication of neighboring populations and personal connections, and last but not least a much greater emphasis on infrastructure (roads, services sector, road infrastructure) (Nienaber & Wille, 2019).

3. Cross-border cooperation in the form of Euroregions

The most widespread form of cross-border cooperation in Europe is considered to be cross-border cooperation in the form of Euroregions. Euroregions are characterized as a form of cross-border cooperation between local or regional authorities in two or more states with a common border, which aims to coordinate mutual efforts and implement measures agreed in different spheres of life in accordance with national laws and international law to address

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common issues and in the interests of people living in its territory in different ways. sides of the state border.

Cooperation within the Euroregions promotes the development of integration processes in the cultural, educational, economic, communication and other spheres, creates opportunities to accelerate the adaptation of European legislation, determines an increase in the living standard of the population located on the border territories.

Due to the functioning of the Euroregions, a mechanism for the formation and development of international economic relations in cross-border regions can be created, this being presented in figure no.1
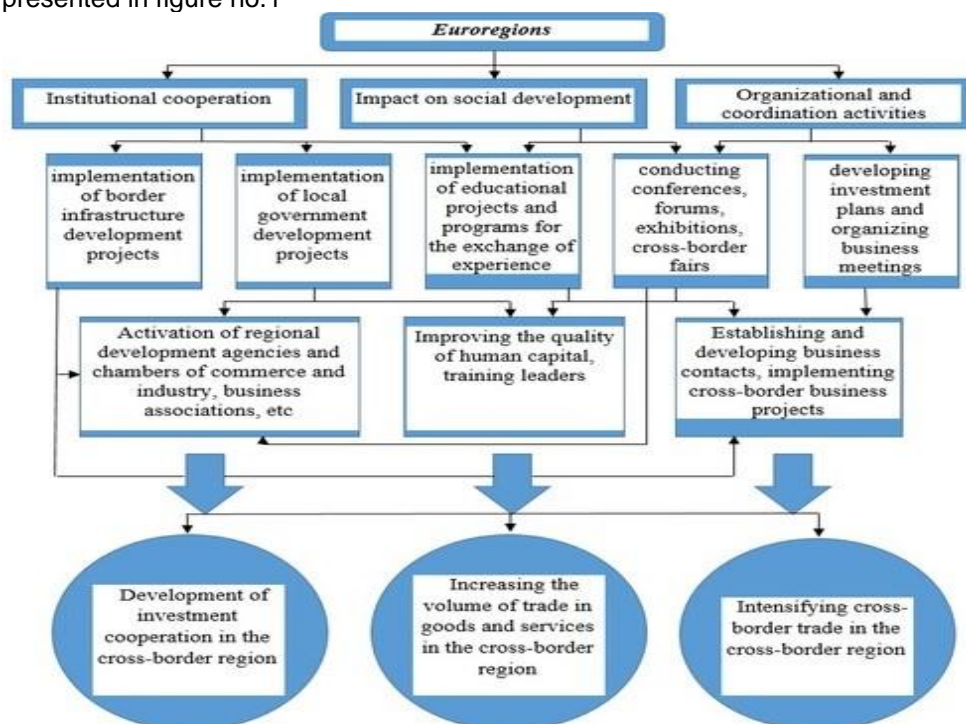
Figure no. 1 The mechanism of formation and development of international economic relations in cross-border regions
Source: own processing according to Practical guide of cross-border cooperation

The characteristics of the functioning of Euroregions as a form of cross-border cooperation are:

- Legal aspects of the functioning of Euroregions - the creation of a Euroregion does not lead to a new administrative-territorial entity with the status of legal person, the legal regulation of each member of the Euroregion is carried out in accordance with the current legislation of the state to which it belongs. they have no power to replace the authorities operating in the territory of other Member States.
- Euroregions do not act against the interests of the national state, they are not supranational entities, in their activities they do not replace the foreign policy functions of the states (political features).
- In the vast majority of cases, Euroregions cover territories that have a common historical past and have even been part of a state; Euroregions sometimes include territories that in the past belonged to a state, was contested by a neighboring one, which has a common border with it (historical features).

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- The Euroregion usually contains multinational territories or regions inhabited by members of several ethnic groups. In many cases, adjacent border regions host a national minority, which represents the national majority of the country on the other side of the border (characteristics related to the ethnic composition of border areas).
- The territories or regions that make up the Euroregions are peripheral to the administrative centers in their countries.
- All territories or regions that are part of the Euroregions have common cross-border issues that require a concerted effort by the territorial communities or the authorities of the neighboring countries. Usually, such issues include environmental protection, development of border infrastructure, transport and communications, rational use of labor resources, ensuring the conditions for the development of ethnic minorities.
- Existence of clearly defined common interests of Euroregion members. Typical for this group are the commercial and economic interests, taking into account the place of the member regions in the interterritorial division of labor, in the field of common development of tourism, mutual services across the state border, creation of a network of cooperation in science, education and culture. The definition of a common space development strategy is a universal area of common interest for the members of any Euroregion.

4. Barriers and difficulties in cross-border cooperation

Despite the high importance of cross-border cooperation in regional development, it is important to note the existence of systemic shortcomings of state policy in this area, which make it impossible to use it effectively in regional development.

The main barriers and problems in cross-border cooperation can be: legal and administrative barriers; language barriers; difficulties crossing the border; economic inequalities; lack of interest in cooperation of the authorities; socio-cultural differences; lack of trust; other barriers. Therefore, I will present in more detail some issues in cross-border cooperation.

Problems of creation and development of European territorial cooperation associations in different non-EU countries.

Here we note the lack of awareness of communities about the essence of these cross-border cooperation, the legal algorithm for their creation and the opportunities they offer.

There is no methodological support for communities (no methodological recommendations developed for the formation of cross-border cooperation between EU and partner countries) and information among communities with the involvement of specialists and experts to inform representatives of cities, villages and territorial communities. In addition, a significant shortcoming is the non-use at local level of the practice of organizing business meetings of representatives of local communities abroad (in regions with experience in establishing cross-border cooperation), to learn experience and study this organizational form of cross-border cooperation. "inside" border.

Information support.

A separate issue in the development of organizational forms of cross-border cooperation (typical of both Euroregions and other types of cooperation) is, in general, the insufficient level of interactive information assistance and support of cross-border associations, which is characterized by:

- the low frequency of updating of websites specific to cross-border cooperation or their absence;
- the insufficient presence of the information base on cross-border cooperation on social networks and the lack of opportunities to distribute audiovisual material on popular video services (eg YouTube);

- low level of reflection in the information space of successful cases and projects implemented in cross-border cooperation, which could help to promote its positive image and, in general, to promote different forms of cross-border cooperation.

Issues related to the non-use of the potential of cross-border and territorial cooperation programs within the implementation of regional / local development strategies. The use of cross-border cooperation as an effective tool for regional development is hampered by the lack of a unified approach to cross-border component reflection in regional and local development programs and strategies, which restricts both the possibilities of coordinating them with cross-border cooperation programs for 2021-2027. and the opportunity to realize the competitive advantages associated with their position at the border.

5. Factors underlying the creation of the cross-border cooperation strategy

Analyzing the European Union's regional development policy, one can identify a set of important factors that emphasize the creation of a development strategy.

- *The existing economic conditions are taken into* account.

European experience clearly shows that a level playing field for business and other economic activities, offered at European level and in the common market, is fundamental to the development of the EU economy. At the same time, the success of growth strategies depends to a large extent on their interaction with individual national strategies related to specific sectors: taxes, the labor market and so on. Favorable macroeconomic conditions and an appropriate microeconomic environment (regulatory policy, business climate) are preconditions for the implementation of effective strategies to help lagging regions. If the strategies of national governments aim to limitin the independence of the regions, then the resources that could be directed towards their economic development are spent on combating the higher authorities.

- *Development of individual strategies with a set of appropriate measures*.

The accumulation and development of knowledge and skills in the region is a decisive factor that can ensure the long-term development of the region. Therefore, economic development strategies must be developed taking into account the specifics of the region, adapting them to the needs and aspirations of its inhabitants. From the wide variety of means to achieve the goal, it is necessary from the outset to form an appropriate set of measures aimed at implementing such an individual strategy. Although prestigious investment projects play an important role and can be a starting point or a catalyst for future benefits.

- *Stability of funding and coordination of programs*.

The key to the successful implementation of regional programs in the EU is the planning period, which is set by adopting an appropriate budget to fund them. This ensures the long-term stability of investment in projects, thanks to the strategic vision and protection against political changes.

- *The need for international cooperation.*

Stimulating cross-border and interregional cooperation is an element of the EU's regional policy since its establishment, it contributes significantly to the regional development of the constituent parts of the Union. On one hand, the opportunity to encourage constructive contacts between regions beyond the EU's external borders has helped many countries to properly prepare for EU accession responsibilities and has shaped the positive attitudes of their citizens towards future accession. On the other hand, cooperation between regions within EU borders has strengthened relations between territorial communities, sometimes relatively divided or isolated. The ability to bring together the regions of several countries with common problems contributes to a practical and constructive approach to common development.

- *Recognition of the positive and negative consequences of urbanization*.

In Europe, as in other parts of the world, urban agglomerations (or areas of large cities) are seen as key factors in economic growth. The European experience demonstrates the ambiguous effects of economic concentration on the spatial development of countries. Europe, with its relatively high population density and high land prices, faces challenges from large cities, such as overcrowding, pollution and crime. Therefore, the economic benefits of urbanization must be weighed against the costs associated with solving these problems.

- *The importance of small and medium-sized cities.*

Europe is convinced that economic growth is not just about big cities. The role of medium-sized cities is to combine large and small cities and remote rural areas into a single entity. Medium-sized cities also play an important role in promoting integration, developing connections and strengthening economies of scale. Their equally important function is to reduce the depopulation of rural areas.

- *Emphasis on job creation and capital formation.*

Local development plays an important role in stimulating economic growth in underdeveloped regions. Significant poverty reduction in these areas can be achieved by developing programs that involve the creation of new jobs. In addition, Europe is characterized by relatively low geographical mobility of workers. As a result, strategies to promote local employment and capacity-building initiatives so that underdeveloped regions can reap the benefits of direct links with the general economy.

Conclusions

In general, cross-border cooperation between the European Union and third countries is achieved through certain cooperation programs. These programs largely enable the sustainable economic growth of the participating countries.

For the successful implementation of cross-border cooperation programs, it is necessary to create a favorable environment that involves:

• the existence of a high-speed communication infrastructure, such as airports, motorway networks, high-speed internet access, etc., which will facilitate the mobility of people and goods;

• the availability of specific resources that distinguish these regions and constitute their difference; such factors may be the emergence of transnational companies that have a prestigious brand, whose location attracts other companies and causes a cumulative effect; the concentration of such enterprises develops a certain industrial culture, increases the qualification of employees, product quality, promotes cooperation, activates training mechanisms. A significant element here is the position of transnational firms and the degree of their territorialization, as these firms can greatly facilitate the entry of local enterprises into global networks;

• the presence of a number of institutions and organizations engaged in the provision of services in the international sphere, this refers to the activities of export-import enterprises, the activities of various training centers in the field of international development and management;

• the existence of public and private organizations that facilitate international trade, such as exporters' clubs, international services of chambers of commerce and industry, etc.

In the context of regional development, the important directions for deepening cross-border cooperation must be to stimulate new forms of business, activate investment potential, create new jobs, build high-quality infrastructure and improve the quality of life. Considerable attention must be paid to the formation of technology parks, the introduction of new technologies, etc.

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RESULTS AND PERSPECTIVES IN IMPLEMENTING REGIONAL OPERATIONAL PROGRAM

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Abstract: *Increasing the efficiency of structural funds and the rate of absorption is one of the opportunity that Romanian economy has to maximize. The article presents a general analysis on the absorption of Regional Operational Program for the financial programming period 2007-2013. This evolution is being regarded in the context of improving the efficiency of the Regional Operational Program for the present financial programming period 2014-2020, in order to use the experience accumulated and to increase the absorption rate.*

Keywords: *Regional Operational Program, structural funds, economic performance, regional development strategies.*

1. Introduction

Romania, as a member state of the European Union since 2007, has assumed a national development policy that ensures convergence with Community policies, objectives, principles and regulations, in order to ensure a balanced socio-economic development leading towards reducing development gaps with the European Union (Blom-Hansen, J., 2015; Caldas, P. et al., 2018). The framework documents underlying this policy are the National Strategy of Romania and the National Development Plan, two strategic documents focused on a balanced development and on the diminishing of development gaps compared to the European Union.

Community policies that support balanced development at European Union level are implemented at Member State level through specific funds and programs, adjusted to the particularities of each Member State (Coppola, G. et al. 2020; Crescenzi, R. et al. 2020). The National Strategic Reference Framework established at national level, is structured on specific thematic priorities and aims at developing the basic infrastructure at European standards, ensuring the interconnectivity of the European space, the objective being to develop a stable and attractive environment for those who want to live, work and invest here (Hagemann, C., 2019; Pîrvu, Ramona et al. 2018).

Differences and gaps in economic development are also found between regions at national level. These development gaps have been the basis for drawing up a regional development strategy aimed at promoting balanced territorial development. These strategies aim to respond to the needs of territorial development, focusing on a coherent development of investments and planned strategic actions (Fiaschi, D. et al. 2018). The long-term strategic objective in terms of regional development is to affirm the regional and European identity of our country, which has a major role in ensuring European interconnectivity but also a bridge between Europe and Asia (Incaltarau, C. et al. 2020; Kersan-Škabi´c et al. 2017).

At the level of the national economy there can be identified a series of generalized problems at the regional level, which determine an unequal development in the territorial plan: (1) the relatively large number of subsistence and semi-subsistence farms, with average areas less than 2 ha; (2) low productivity in agriculture, due to lack of financial resources, inefficient use of existing resources, lack of qualified staff in modern agricultural practices, lack of

managerial and marketing skills, all doubled by poor infrastructure; (3) the significant gap between the import and export of agricultural products; (4) the lack of organized trade chains for agricultural producers, as they are not represented by specific bodies; (5) poor basic infrastructure; (6) large areas of land affected by natural risk factors such as floods, earthquakes and landslides, desertification and insufficient water sources.

These development problems identified at the regional level become even more obvious when we compare the rural and the urban environment, unlike the European countries where the transition from urban to rural area is almost insignificant. To solve these problems, the European Regional Development Fund was created at European level. In Romania this fund can be accessed through the Regional Operational Program. The main objective of the Regional Operational Program is to accelerate the economic growth of disadvantaged regions, aiming that the development gap between the best developed and the least developed Region, in terms of Gross Domestic Product not to increase in the programming period, compared to the present situation. In order to make the best use of structural instruments and in compliance with Community policy objectives, each Member State has an obligation to monitor, evaluate and control expenditure from the Structural Funds and to publish data on the state of implementation of these programs (Herta Todtlinğ-Schonhofer,̈ et al. 2014; JurgeňPucher, et al. 2015).

The Regional Operational Program 2007 – 2013 had as specific objectives: (1) increasing the economic and social role of urban centres through a polycentric approach; (2) improving the accessibility of regions, in particular urban centres and their links; (3) increasing the quality of the social infrastructure of the regions; (4) increasing the competitiveness of regions as business locations; (5) increasing the contribution of tourism to the development of the regions. In comparison, the current Regional Operational Program 2014 – 2020 aims at: (1) promoting technology transfer; (2) improving the competitiveness of small and medium enterprises; (3) supporting the transition to a low-carbon economy; (4) supporting sustainable urban development; (5) improving the urban environment and preserving, protecting and sustainably capitalizing on cultural heritage; (6) improving road infrastructure of regional importance; (7) diversification of local economies through sustainable development of tourism; (8) development of health and social infrastructure; (9) supporting the economic and social regeneration of disadvantaged communities in urban areas; (10) improving educational infrastructure; (11) the geographical extension of the system of registration of properties in cadastre and land book and (12) technical assistance (Romanian Govern 2007, 2015).

The general aim of the program is to contribute to reducing regional disparities as well as disparities within regions, between urban and rural areas, between urban centres and neighbouring rural areas, respectively even within cities, between more developed areas, more attractive to investors and unattractive areas, making better use of regional synergies. Thus, a balanced development of all regions of the country is pursued, possible through an integrated approach, combining public investment in local infrastructure with active policies to stimulate investment and capitalize on local resources.

2. Regional Operational Program – regional objectives

The general objective of the Regional Operational Program is to ensure a balanced economic and social development at territorial and sustainable level, for all regions of Romania, by developing infrastructure and business environment that meet the needs and capitalize on specific resources within each development region.

Development strategies implemented at regional level give priority to lagging regions and areas that are deficient in terms of development, infrastructure and need public support and intervention to deal with the negative consequences of development trends, and not to contribute to the deepening of the existing development gaps. The strategic vision of the

Regional Operational Program in terms of balanced territorial development is based on the following elements: (1) the importance of balanced development of all regions by recognizing the urban dimension, respectively the development of urban development poles and the area in their immediate vicinity; (2) the development of higher urban functions in order to create a critical mass that will generate demand for services and stimulate more and more post-industrial activities; (3) promoting a bottom-up approach, starting from local development needs, not from the national level; (4) ensuring the preconditions for economic growth, namely the development of local and regional infrastructure on which to achieve growth and, subsequently, economic development; (5) ensuring accessibility, including to mountain areas, respectively to and within congested urban areas; (6) attracting back to the region the Romanian emigrants and avoiding the economic isolation of the disadvantaged regions or areas; (7) capitalizing on local resources through a balanced development, including the tourist potential.

The purpose of the Regional Operational Program is to contribute to the achievement of the strategic objective of ensuring a balanced development by complementing national sectoral interventions and actions with regional and interregional specificity in order to ensure and support economic growth. The Regional Operational Program supports all actions aimed at improving safety standards, reducing negative effects on the environment, reducing climate change, protecting transport infrastructure from natural disasters, and eliminating dangerous traffic points.

In order to contribute to the achievement of the objectives of the Europe 2020 Strategy for smart, sustainable and inclusive growth, the new framework in which the Regional Operational Program is implemented has the following thematic objectives:

Figure 1: Objectives for Regional Operational Program

3. Achieved results and perspectives in implementing Regional Operational Program

The results obtained in implementing Regional Operational Program 2007 – 2013 can be analyzed, respectively valorized by improving the absorption process for current financial program, 2014 – 2020 and for the next. The value of community funds (European Regional Development Fund) allocated for the Regional Operational Program for the period 2007-2013 was 3,966,021,762 euros. Conclusions can be drawn by analyzing the entire process. Thus, considering the end of October 2016 the stage of implementation for Regional Operational Program was as follows:

Figure 2: Regional Operational Program 2007 – 2013 implementation stage reported to structural funds allocated
Source: Evaluation Report, *Interventions Evaluation ROP 2007-2013,* 2019.

Implementing the 4,491 projects completed by March 15, 2017, there were created 24,994 jobs. By the same date, there were 10,056 financing applications submitted requesting approximatively 8.62-billion-euro contribution from the European Regional Development Fund, representing 217% of the European Regional Development Fund allocation related to the Regional Operational Program.
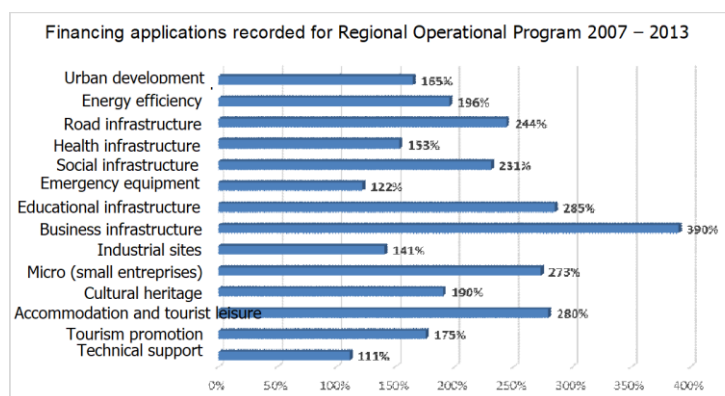
Figure 3: Financing applications recorded for Regional Operational Program 2007 – 2013 at March 15, 2017
Source: Evaluation Report, *Interventions Evaluation ROP 2007-2013,* 2019.

At the same moment there were 4,491 completed projects, with a total eligible value of 3.67 billion euros, of which the European Regional Development Fund contribution was 2.93 billion euros (representing 74% of the European Regional Development Fund allocation of the Regional Operational Program).
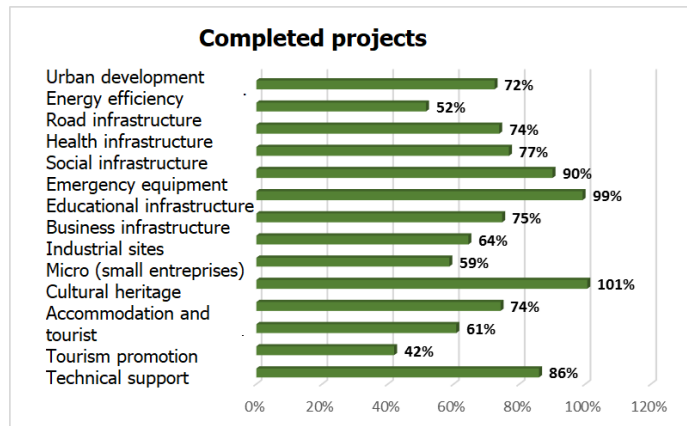
Figure 4: Completed projects implemented from Regional Operational Program 2007 – 2013 at March 15, 2017
Source: Evaluation Report, *Interventions Evaluation ROP 2007-2013,* 2019.

Compared to 2014, there is a 68% increase in the number of completed projects and a 123% increase in the European Regional Development Fund contribution to completed projects, from 1.3 billion euros in 2014 to 2.93 billion euros in March 2017.
At the level of domains, the advance over the average of the program registered by the field of emergency equipment, micro-enterprises and social infrastructure is noticeable.
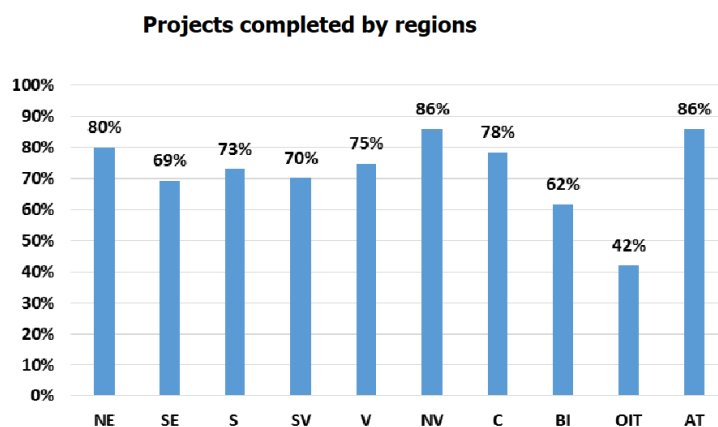
Figure 5: Completed projects implemented from Regional Operational Program 2007 – 2013 by regions at March 15, 2017
Source: Evaluation Report, *Interventions Evaluation ROP 2007-2013,* 2019.

At the regional level, the North-West, North-East and Central regions stand out, given that all regions recorded values of over 60%.

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Table 1. Financial allocation from Regional Operational Program

- Euro-

Objective	Total financial allocation	Basis calculation for European contribution (public)	Certificated expenditures	Public contribution	Certificated rate (%)
Urban development	1.438.989.380	public	1.236.173.329,66	1.236.173.329,66	85,91%
Road infrastructure	952.105.021	public	797.627.591,39	797.627.591,40	83,78%
Social infrastructure	864.474.865	public	739.396.046,21	738.900.182,02	85,47%
Business infrastructure	561.685.142	public	593.957.676,21	504.886.013,44	89,89%
Tourism development and promotion	717.378.873	public	624.415.460,31	571.896.611,04	79,72%
Technical assistance	131.506.650	public	115.869.083,55	115.869.083,55	88,11%
Total	**4.666.139.931**	**public**	**4.107.439.187,33**	**3.965.352.811,11**	84,98%

Source: Evaluation Report, *Interventions Evaluation ROP 2007-2013,* 2019.
Note: Some of the amounts included in the final payment application were certified under reservation.

Cohesion policy covers all European Union states and each region. However, according to the rules of allocation, most funds are concentrated in regions with a Gross Domestic Product (GDP) per capita below 75% of the European Union average. Reducing disparities between regions is an objective that can be achieved through the mechanism of financial allocations implemented through the Regional Operational Program. Regional analysis shows discrepancies also at regional level. Regional strategies aim to reduces these disparities within a region, but there are still certain limits to action, depending in particular on the demographic level of each region. Furthermore, the regional policy framework is being established at national level, and implemented at regional level, so the instruments are not particularized depending on the regional specificities.

The small and medium enterprises sector remains a strategic sector for Romanian economy. In the context of last years, is extremely important to provide financial and non-monetary assistance to SMEs in order to reduce the large differences in economic competitiveness compared to the European average. The efforts should be focused on increasing labor productivity through reducing technological gap, that will contribute to the diminishing of production costs. Also, this program represents an opportunity for SMEs to invest and support the innovation process in sectors with regional development potential. SMEs can obtain support regarding the participation on the EU internal market, the development of exports. Regional Operational Program is promoting also the concept of circular economy and the involvement of SMEs in international research, development and innovation projects.

Depending on the category to which SMEs belong, they have distinct needs. Therefore, it had to be considered to adapt the types of support according to these different needs. Thus, the conclusion is that the Regional Operational Program proposes financing solutions based on the distinct needs of SMEs. Equally, the Regional Operational Program is only one of the financial instruments for implementing public policies to support the development of SMEs and cannot come up with financing solutions for absolutely all the problems of all SMEs in all sectors of the Romanian economy, given the restrictions brought by conditions in implementing European Structural and Investment Funds (ESF), but also the limit of the available budget.

Romanian SMEs have access to all existing sources of financing in the market under the conditions established by the respective programs and sources of financing based on the financing priorities and the principle of ensuring complementarity. The Regional Operational Program is the only operational program, which for the 2014-2020 financing period supports investments for improving the competitiveness of small and medium-sized enterprises, the agricultural sector and the fisheries and aquaculture sector. This objective was developed based on the results achieved for the 2007-2013 programming period. This is the reason to continue the analyze of the economic performances of SMEs that have implemented projects for business development even after the sustainability period. This analyze should be conducted also on economic sectors and to compare the results obtained by this SMEs. The institutional system for coordination, management and control of the ROP 2014-2020 has made efforts to apply a more standardized and, at the same time, more simplified approach to the submission, evaluation, contracting, monitoring and control processes. This approach focused on the needs and response capacities of the target group of beneficiaries. This standardization aims to diminish the bureaucracy in project management, but in the same time underlines the SMEs needs to have specialized employees, which will implement the projects.

The partnership principle was very well implemented in the programming phase and requires follow-up in the implementation stage as well. Both the documentation carried out at the level of international practices and the field findings show that we can improvement the implementation of the partnership principle. This partnership principle assures the visibility of the projects and the results obtained in implementation, allowing to the partners to exchange good practices and also to collaborate. This concept of partnership can change the SMEs behavior from competition to cooperation and collaboration, if it is implemented in real activity. Still, there is the risk that the involvement of partners was only a formalist exercise, usually done to obtain high score in evaluation stage of projects.

Challenges for the future: SMEs sector needs a public policy to support the internationalization of the activity of the business sector on multiple levels and directions of action. The existing public policy is being focused on promoting export activities and its results are far from being efficient. Regional initiatives and subsequent financial instruments to support the internationalization of SMEs cannot go beyond the national regulatory framework. Therefore, strictly consistent with the regulations underlying the use of the FESI, the ROP's intervention in this area is limited to support measures to improve economic competitiveness in order to stimulate exports as a first step in the internationalization strategy.

4. In conclusion

Regarding the achievements obtained in phases of the implementation cycle, the main conclusions resulting from the analysis are: (1) communication improvement: introduction of the help desk information and support offices. There was developed desk information

departments in order to assure the support of the applicants, including during the clarification period. Still, remains the need to improve the operational procedure, training and introduction of a mechanism for exchanging experience and lessons learned in the communication relationship with SMEs and other categories of program beneficiaries; (2) increased quality of the guidelines specific to the various calls – the corrections that have been made and the improvement of the guidelines prove that it is a learning process that the implementation system is still going through with the understanding of the specifics of the SMEs sector that it being financed; (3) implementation of an application special designed to respond horizontally to all operational programs whose source of funding is FESI, eliminating physical documentation in sending a project proposal for evaluation, as well as for implementing projects. The application assures increased transparency in the management and use of FESI. Therefore, it is an "asset" of the operational programs that needs to be maintained and improved, into a modernized formula that better meets the specifics of the Regional Operational Program.

Within the current financial programming period, new types of financing instruments are proposed, namely: (1) the joint action plan – represents a group of implemented projects, which are in the responsibility of the beneficiary, this being seen as part of the program; (2) integrated territorial investment – represents an integrated approach of urban or territorial development strategies that involves investments made from several priority axes, being able to combine financial assistance from one or more operational programs; (3) local development placed under the responsibility of the community – is a way of development achieved through local development strategies, these strategies are developed on integrated and multisector areas, being placed under the responsibility of the community, respectively Local Action Groups, groups that bring together representatives of local socio-economic interests from both the public and private sectors; Local Action Groups are responsible with the development and implementation of local development strategies.

The objectives of Regional Operational Program should be reconsidered in the framework of pandemic influences upon different economic sectors. This approach could help SMEs to reconsider the productive fluxes and to adjust their offer to the tendencies recorded on the market demand and their activity to current restrictions and conditions.

5. Acknowledgements

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POLITICAL CORRECTNESS IN BUSINESS COMMUNICATION

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Abstract: *In a world increasingly trying to erase past inequalities and discriminations, words must communicate intent as much as ideas. We live in politically correct cultures, where unspoken rules of respectability govern conduct in cross-cultural interactions, meaning interactions among people of different races, genders, or religions. Therefore, it is essential to use politically correct language to avoid offending the audience. Even if it is not intended, failing to do so can have devastating effects professionally and personally. As it is frequently seen in the media, writing or speaking without using politically correct or inclusive language can have a negative impact that proves impossible to take back, especially in today's age of social media and online content sharing. Politically correct means expressing yourself using neutral, unbiased, and inoffensive language that does not degrade, demoralize, or discriminate against another person or group. Inclusive language considers all perspectives without exclusion, inferiority, or stereotyping. Conspicuous prejudice and discrimination in the workplace are far less acceptable today. Laws now protect traditionally underrepresented groups from flagrant discrimination in hiring and promotion, and political correctness has reset the standards for politeness and respect in people's daily interactions. Yet, in spite of the progress mentioned, political correctness is an equivocal term. While it has helped many traditionally underrepresented employees to experience their workplace as more inclusive, the rules of political correctness can prevent employees from developing effective relationships across differences that might divide groups. The paper attempts to analyze the rise and enforcement of political correctness rules related to the ongoing economic processes in the new economy of the world. In this new economy, the organizational boundaries between states and firms become unclear and, apart from conceiving a new vocabulary able to express the changes the firms are undergoing, when speaking or writing, all members of the audience should be included and addressed using inclusive language.*

1. Introduction: The History of Political Correctness

In recent years and decades, we have been paying more attention to our words. Society, in general, has been moving towards non-discriminatory language. How did this come about? Why do we consider some words more ethic than others? No society has ever permitted total freedom of speech without any restrictions whatsoever and it is hard to see how it could. Therefore, in the contemporary world there are many restraints on free speech. A large number of employers place restrictions on their employees' freedom to speak about their work or to go to the press. For instance, a woman who would like to become a partner in a company does not say anything when she is ignored even though she knows she is perfectly capable of becoming one for fear of not confirming the notion that women do not have what it takes to become partner. Or a coloured individual passed over for promotion might wonder

whether his race has anything to do with it, yet he is reluctant to raise this concern because he would be perceived as the one "playing the race card. These restrictions are usually presented as matters of respect for authority, or not bringing the company into dispute or just good manners, but they remain restrictions on freedom of speech nonetheless.

The idea of political correctness (abbreviated to PC) has received a lot of attention for many years now. The term is typically associated with the "censorship of policies, actions and language" (Kaufman, 2016) seen to disadvantage or offend a particular group of people in society, and the development of ways to fix such social injustices.

According to predominantly conservative critics of what they call the "political correctness movement," the term involves, again, censorship and social engineering, and has influenced popular culture, such as music, film, literature, arts and advertising. The term "political correctness" is often used to ridicule either the idea that carefully chosen language can promote certain social advantages and relationships, or the belief that the resulting changes benefit society.

Yet, on the other hand, according to Messer-Davidow (1993), the term "political correctness" is part of a larger attack on social equality or political progressivism. People using the term in this sense argue that expressing an opinion about the use of language cannot in itself represent intolerance or censorship. Also, there is a concern expressed by those who use the term in a derogatory fashion regarding the "potential dilution of speech and the failure to express important problems concerning the society." (Pop, 2013) They claim that people's freedom of speech might be inhibited, people being afraid that when expressing their opinions they might offend some group.

The term "political correctness" proves quite difficult to define. The definition of politically correct language might relate to words that focus on empathy, fairness and justice. Words and phrases that have been accepted and entered into our day to day vocabulary that enhance the inclusion of individuals or groups of people, usually found in minorities in our societies and communities. Noam Chomsky at some time defined it as a "healthy expansion of moral concern" (Allan and Burridge, 2007:90).

The phrase "politically correct" actually emerged approximately 50 years ago. However, it once appears in a U.S. Supreme Court decision in 1793, within the context of the case 'Chrisholm v. Georgia' wherein Justice James Wilson points out that it is not politically correct to say the "People of the United States" as this should be replaced with "The United States" (Allan and Burridge, 2007:90) instead. Even though this is a proof that the term "political correctness" appeared early in the language, in fact, it was rarely used until the 1960s. Other claim that during that time period it may have been adapted by the American New Left from former Soviet and Chinese ideological speak in which the term indicated whether the members followed the ideologies of the party (Perry,1992:90). Thus, in the 1960s and 1970s, the term "political correctness" acquired a rather negative connotation; it was used to refer to the fellow members of one's party "who toed the party line very strictly and whose behaviour was therefore seen as 'ultra-correct'" (Goddard and Patterson, 2000:69).

Ely, Meyerson, and Davidson (2006) define political correctness as a situation "where unspoken canons of propriety govern behaviour in cross-cultural interactions—that is, interactions among people of different races, genders, religions, and other potentially charged social identity groups".(p.1) Compared to the current definition of the term, it becomes sufficiently clear that it does not possess the same meaning any longer. The conservatives transformed the notion of "political correctness" to pretend that "a left-wing movement based in liberal academic circles was trying to create a new doctrinaire political orthodoxy through social engineering which included changing words and phrases that some groups found offensive." (Pop, 2013:7)

The late of the 1990s saw a decline in the use of the term. Yet, we can state that, nowadays, it is both an active behaviour as well as an intentional avoidance of using words and

expressions which could imply "a sense of exclusion and marginalization of people who are considered to be socially disadvantaged or discriminated against." (Tokarev, 2016)

Moreover, words that were commonly used in the past are nowadays completely out as many organizations and authorities have also come up with language, policies, and measures that are considered as alternatives to discriminatory words and always adding to the ever-growing politically correct language list.

2. Political Correctness – A Double-Edged Sword

Cultural diversity in particular is essential to one's growth, ability to solve problems and to innovate. But, quite often, when faced with diversity the unconscious judgment of others who appear different makes it all but impossible for one to collaborate and solve problems. The more judgmental one is the more fundamentalist he/she is.

Through the avoidance of challenging topics (political correctness) it has been created an environment that hinders people's ability to live and work comfortably with those who are different from them. Political correctness has probably become a bigger problem than the problem it was intended to address. On the one hand, it has helped make societies more unprejudiced by pushing them away from offensive stereotypes and discriminatory language. Political correctness has certainly made some positive contributions to the pursuit of social equality. The use of PC language has helped people shift away from discriminatory speech, for example. The PC focus on language and naming has also helped improve the visibility of people's natural diversity, which has resulted in the productive strive for better and more accurate representation of human experiences. Collectively, these changes benefit all people because they help improve society by making the treatment of everyone in it more equal.

On the other hand, it has led to new obstacles by increasing in-group hostilities and reducing opportunities for dialogue and mutual understanding. First of all, meaning is subjective and constantly changing. As Kai Sherwi (2017) argues, some thoughts, phrases, and actions are "correct" while others are not creating an ever-tightening noose around the freedom of speech and expression. The columnist states that no matter how uncomfortable people are with inflammatory language or actions, it is crucial to recognise it as a small price to pay to maintain a democratic system that promotes free expression as a basic pillar of society.

Therefore, it is not surprising that PC discourse has led to in-group hostility. Focusing on politically correct language has encouraged the practice of being constantly aware of another's speech, perhaps most noticeably amongst members of the same community. Thus, in business, this practice has resulted in the transformation of what were initially intended to be "safe spaces" into hostile environments, which is not only counterproductive, but also affects the atmosphere where these people/ employees are supposed to spend quality time, contributing to the welfare of the company.

3. Political Correctness and Business

When talking about political correctness at the work place, one might wonder how people can be authentic and productive if they are constantly worried about offending their colleagues through language that could be perceived as offensive. Some people consider political correctness a necessary social norm as it can keep workplaces civil and employers safe from lawsuits. Others consider political correctness a threat on productivity, thus hindering creativity and free speech.

There have been voices worrying that political correctness suppresses free speech throughout the media for decades. Also, there have been many books written on how PC culture negatively affects everything from enterprise organizations to comic book conventions. It is a fact, that in the USA, for instance, according to a recent study, most Americans dislike PC culture and believe it is a problem in their country. (Mounk, 2018)

However, research actually shows that groups of people who have been exposed to PC culture come up with more innovative ideas than those who have not. According to a study carried out by Cornell University, researchers found that "by imposing a PC environment,

they had made it easier for men and women to speak their minds in mixed company. They had 'reduced the uncertainty' that can come with interacting with someone from the opposite sex." (Demby, 2015)

In spite of the commitment to equity that underlies political correctness and the shifts in norms wrought by that commitment, there is still the concern regarding the barriers that political correctness can pose to developing constructive, engaged relationships at work. As an article in *Harvard Business Review* states, "I[i]n cultures regulated by political correctness, people feel judged and fear being blamed. They worry about how others view them as representatives of their social identity groups. They feel inhibited and afraid to address even the most banal issues directly. People draw private conclusions; untested, their conclusions become immutable. Resentments build, relationships fray, and performance suffers." (Ely et al, 2006)

3.1. Business Communication. Rules of a Political Correct Business Communication

Business communication is the process of sharing information between people within and outside a company. In the age of digital, global businesses, it is essential for organizations of all sizes to effectively communicate not only within their organization, but also with shareholders, vendors, clients, and customers. Effective communication is the basis of significant business processes and must be efficient so that personnel can successfully share and communicate information that helps to run a successful enterprise. Therefore, effective communication is critical for a business to operate efficiently. While budgets, operational procedures, project timelines, and the bottom/top line of an organization are often the focus of Board meetings, effective, honest, and ethical communication principles do not always receive the same level of focus. According to Blue Source, most employees (97%) consider that communication has a real impact on everyday tasks. (https://www.bluesource.co.uk/20-astonishing-stats-business-communications/)

Therefore, effective business communication is a concrete principle that businesses need to apply on a daily basis. Statistics show that effective business communication has a significant effect on workplace productivity. Blue Source indicates that productivity goes up by 25 percent in businesses with connected and engaged personnel, and, at the same time, 44 percent of employees want more broad adoption of internal communication tools, suites, and apps. (https://www.bluesource.co.uk/20-astonishing-stats-business-communications/)

This shows how important effective communication is in a business: the employees are able to work better and operate within a team in a more effective manner when good communication practices are used.

Today the business environment is flooded with people from different cultures and ethnicities. Today, when professionals address the reader, they are communicating with a mixed group of nationalities: people of different age groups, ethnicities, economic backgrounds, marital statuses, and genders.

Language is a reflection of the socio-cultural environment of any given society. Words, phrases, titles, and designations are derived from the prevailing conditions in a society. The English language as we know it today has evolved through the ages. Many of the words, titles, and phrases that were appropriate in yesterday communication are considered discriminatory now, as the society continues to rapidly change.

Recently, there have been attempts to broaden the concept of non-discriminatory language beyond its application to gender to consider traditional language that discriminates against people on the grounds of: race, ethnicity, religion, age, sexual orientation, physical ability or physical appearance.

Here are some common examples of politically correct terms that should be used in business communication:

Gender related terms

More and more women have entered the corporate world, causing a number of gender-biased terms to be inappropriate. Even so, gender discriminatory language is one of the most prominent pitfalls that professionals face when writing a business document. The following are some of the rules one needs to follow to keep one's business writing free of gender-discriminatory language.

   a) *Use neutral job titles*

Professions that were considered male props are now open to both men and women, hence the terms and titles used to denote a certain profession ending in "man" have been revised. See the following examples: policeman -- police officer; mailman -- mail carrier; chairman -- chair.

   b) *Use neutral salutations*

If the recipient is unknown, neutral salutations should be used. If you do not know the gender of the recipient who will receive your communication, avoid opening your letter with "Dear Mr." or "Dear Gentlemen." In today's business environment, one cannot assume the sex of the recipient. A simple "To whom it may concern" will work well.

   c) *Avoid the use of masculine pronouns*:

Generally, while speaking or writing, the masculine pronouns such as *he*, *him*, and *his* are used as a blanket term to refer to any group. In a mixed group, such blanket terms tend to negate the individuality of women. Since English does not have a third person, singular, gender-neutral pronoun, there are ways in which you can prevent this problem:

-   use a gender-neutral term such as *they*, but make sure it matches a plural antecedent;
-   avoid using any pronouns by redoing the sentence;
-   use "he and/or she" following a singular noun;
-   occupational nouns and titles - in the past, certain nouns and titles for occupations were created for women. More often than not, these titles were derived from their male counterparts. Today, these terms are not used anymore, as they imply women's dependence on men. Words like "actress," "waitress," "poetess," and "salesgirl" have been dropped from politically correct vocabulary.

Derogatory terms

Derogatory terms include words that tend or intend to play down, depreciate or denigrate and can often be considered offensive. Derogatory words have the power to hurt and potentially cause violence or other forms of hostility. The origins of these depreciating terms can depend on geographic location, history and culture of a particular region. The list of derogatory words based on religion, race, ethnicity, sex, colour and disability among others is growing as people find new words to categorize a particular group with the intent to demean or persecute. Derogatory terms are deep-rooted in our society. They can often be heard in the workplace, music, movies and social media. Referring to someone as "bitch," "redneck," "gay," "retarded," "nigga," or similar words while playfully joking around is still offensive. By using these terms, it associates members of a particular group with behaviour, beliefs or actions that are extremely negative. People can use these so called jokes or terms as a way of expressing how they truly feel.

   a) *Derogatory religious or racial terms*

In a cross-cultural business environment, it can be damaging for somebody's professional reputation if they use words or phrases that have a derogatory connotation as far as religion or race goes. Language is what connects one human being to another; if one uses certain stereotypes in addressing or referring to someone, it can have a deep impact on the other person. Resentment, anger or pain are some of the feelings that people might experience if they are labelled a certain way. References to race, religion, or culture should be avoided in business communication. Terms such as "Blacks, "Japs," "Orientals," and "Jews" are not acceptable.

   b) *Derogatory terms for physical handicaps*

Terms such as "dumb," "crippled," "retarded," or even "handicapped" are considered offensive in today's world and should be avoided. Instead, using the term "person or persons with a disability" would be appropriate.

Jargon

According to Pop and Sim (2014), "professionals from different fields and academics are famous for their pervasive use of jargon, but they are not alone. Sometimes, employees use a great deal of jargon which is not part of the wider industry, but unique to that office environment. The reason is to use words shortened to make communication faster." (p.113) Jargon inadvertently occurs in a professional's communication. While it is fine to use it with readers who are part of the closed user group that understands that jargon, it is counterproductive to use jargon with a person who is not in the field. This alienates and puts off a reader. Not every person in the world would know what GDP or PoP is. The message is lost. For example, when using GDP, the writer should mention Gross Domestic Product in brackets for the benefit of the reader.

Slang

Slang is a type of language that is informal and playful. It often changes over time. The slang of the past is different than the slang of today, yet some slang has carried over into the present. Slang also varies by region and culture. The important thing to understand is that slang is casual talk, and it should be avoided using it in formal contexts. Slang is meant for informal communication and while talking to an informal group of people. Written business communications should never contain any form of slang. Written communications are usually created for customers, management, investors, or other more formal audiences. Using slang in business communication could cause the reader to not take the business seriously and could possibly have disastrous results.

Also, one has to consider that more modern slang terms may be misinterpreted or misunderstood by the reader. This could be due to age or someone who uses English as a second language.   Thus, embarrassing situations should be avoided by leaving slang completely out of written documents and communications.

In the same time, if instant messaging is used in an office, then it is probably going to be difficult not to use some form of slang. Employees are most likely going to type instant messages similar to the way they text, as it is an informal way to communicate. The same situation applies to emails, but it might get a little bit more complicated in this case. If team members working on a project are emailing documents or information back and forth with each other, the emails will likely include varying degrees of slang. However, when those emails turn into progress reports or project updates addressed to upper management or outside parties, slang should be avoided. Also, slang must be never be used when emailing customers.

Titles and naming practices

Getting titles right in business correspondence is vital. It is best to address people by their full, correct title, no matter how extraordinarily long that title may seem to others. First names are reserved for family members and close friends. Until you are informed otherwise, or have developed a personal relationship, it is very important to refer to a counterpart with his or her title The title "Mr." immediately identifies the reader as a man. Titles for women are the sensible area. "Mrs." or "Miss" not only identifies the recipient as a woman but also are indicative of her marital status. In today's business world, the use of Mrs. or Miss has been dropped, unless a woman specifically asks to be addressed that way. Instead, the more neutral title "Ms." has been brought into use, or writing out the entire name, i.e., "Dear Alice Smith."

4. In conclusion

The world is becoming a more global environment. Workplaces exist without walls, individuals drift through borders, and true progress is seeing a world of humanity more than

individual nations. In these times, some argue political correctness in the workplace is a good thing. Others say it has a negative effect on communication. But the fact is that in today's world of business, prejudices and discrimination are not acceptable. There are laws protecting people of different races and ethnicities from discrimination in hiring and promotion. In spite of that, there are voices arguing that political correctness might create a restrictive and fearful atmosphere at the workplace. Because of the rules governing the concept, the employees sometimes find difficult to develop effective relationships among themselves, cautiously tackling these issues.

It has been said that "political correctness" consumes resources by denying or delaying management attention from real problems. Businesses move forward because people focus on making the business better, not by being so much concerned about one's self-esteem.

There are many reasons for which the topic of political correctness in business communication deserves to be studied further in detail. There are voices saying that political correctness in itself has begun to isolate individuals. While the initial intention of political correctness was to reject derogatory terms in order to create more respect for one another, it has, in the end, made society more uncomfortable with people who fit the conditions of these politically charged terms.

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LA TRADITION – VECTEUR IMPORTANT DE PROMOTION ET GAGE DE QUALITÉ. LE CAS DES PRODUITS ROUMAINS DU TERROIR (TRADITION - IMPORTANT PROMOTION AND QUALITY GUARANTEE VECTOR. THE CASE OF TRADITIONAL ROMANIAN PRODUCTS)

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Abstract: *This paper illustrates some of the ways in which producers and traders of traditional Romanian products in the agri-food sector manage to promote their products on the international market using digital media. They used to be present at international trade fairs and exhibitions or in the traditional media. In recent years and especially during the Covid pandemic19, promotion has moved online, on enterprise websites, on social networks and on eCommerce platforms. Using the concepts of discourse analysis, we will show that the discourse promoting regional specialties contains references to tradition - as a guarantee of authenticity, originality, and value of the product, to health - being genuine products made with natural ingredients, in small factories or even in peasant households, with respect for quality and manufacturing stages - the most well-known Romanian products already having the status of a brand with a protected geographical indication. It is a discourse about exceptional products. Based on recipes that are about 200 years old, perfecting the manufacturing processes and raising the tradition to the rank of art, the producers manage to offer specialties that give any meal refinement, and even luxury. Foreign tourists taste these products for the first time during the holidays spent in the agrotourism pensions in Romania, and then they look for them in the Romanian stores in their countries or on the eCommerce sites.*

1. Introduction

Le marché des denrées alimentaires est extrêmement concurrentiel. De nombreux produits très divers, fabriqués à l'aide de technologies de plus en plus innovantes, ne cessent d'entrer sur le marché, en attirant surtout grâce à leur *caractère de nouveauté*. Face à cette évolution rapide, les spécialistes de la communication et du marketing sont confrontés à de nombreux défis quand ils doivent promouvoir des produits traditionnels.

Selon le Règlement (CE) N° 509/2006 du Conseil du 20 mars 2006, on entend par « traditionnel » un produit « dont l'utilisation sur le marché communautaire pendant une période faisant apparaître une transmission entre générations a été prouvée : cette période devrait correspondre à la durée généralement attribuée à une génération humaine, à savoir au moins vingt-cinq ans ».

Il existe encore la possibilité de participer à des salons spécialisés ou à des foires internationales, de faire de la publicité dans les médias traditionnels, mais de nos jours aussi bien les créateurs de contenus que le public préfèrent les médias numériques. La présence sur la Toile est essentielle pour que le message promotionnel arrive à un grand nombre de personnes.

Les principaux supports de la communication numérique sont les sites web d'entreprise, les réseaux sociaux et les plateformes d'e-commerce. En général, les fermiers individuels et les

petits entrepreneurs recourent à Facebook ou à Instagram, alors que les grandes entreprises agricoles ont leurs propres sites web.

Dans la présente communication nous allons illustrer les moyens par lesquels les produits roumains du terroir sont présentés et mis en valeur sur le support du *site web* – un dispositif de « construction du sens » (Meunier, 1999 : 89) qui assure aussi bien l'information que la « séduction » du public.

Le site web accueille un grand nombre d'informations, que l'on peut mettre à jour constamment. Selon Rouquette (2017 : 6-11), un site internet donne une meilleure visibilité à l'activité de l'organisation. Nous allons montrer que sur les sites web des entreprises du secteur agroalimentaire, la principale stratégie promotionnelle consiste à construire un discours axé sur *le caractère d'exception* des produits traditionnels.

Notre corpus comprend les sites web des entrepreneurs roumains qui produisent et commercialisent des produits labellisés. Parmi les 3400 dénominations de produits protégés de toute l'Union Européenne en 2021, la Roumanie en détient sept.

2. Les indications géographiques et la bonne réputation des produits

Afin d'éviter l'utilisation frauduleuse des dénominations et la contrefaçon des produits originaires de régions spécifiques, liés à un savoir-faire traditionnel, les producteurs demandent des certifications de qualité de la part de l'Union Européenne :

- AOP – Appellation d'origine protégée (chaque partie du processus de production, de transformation et de préparation doit avoir lieu dans une zone géographique déterminée)
- IGP – Indication géographique protégée (au moins une des trois étapes que constitue la production, la transformation ou la préparation doit avoir lieu dans la région ; on se focalise sur la notion de savoir-faire)
- Spécialité traditionnelle garantie (ce label protège une recette traditionnelle, sans être lié à une zone géographique déterminée)
- Le label Agriculture biologique (AB)

Pour protéger les produits de montagne contre une utilisation frauduleuse du terme « montagne » et pour développer les traditions locales, la culture et le patrimoine collectif, le Règlement n° 1151/2012 de l'Union européenne a introduit également la mention facultative de qualité « produit de montagne ».

Il y a aussi des labels nationaux, qui certifient une qualité supérieure par rapport à d'autres produits similaires. Par exemple, en France on utilise :

- Le Label Rouge (les produits doivent respecter un cahier des charges et être homologués par un arrêté interministériel)
- La Certification de Conformité (garantit le respect des caractéristiques certifiées à partir d'un cahier des charges).

En Roumanie il existe le label protégé « Agriculture écologique » (AE), similaire aux termes « agriculture biologique » ou « agriculture organique » utilisés dans d'autres États membres, qui vise la production de denrées agricoles en essayant d'avoir un impact négatif très faible sur l'environnement.

Janusz Wojciechowski, membre de la Commission chargé de l'agriculture, déclarait en 2020 que « les indications géographiques protègent la valeur locale au niveau mondial ». Ces signes de qualité sont inscrits sur l'emballage des produits et ils constituent des indices qui orientent les choix du consommateur. En outre, ils sont le premier repère de la bonne réputation d'un produit.

Le marché international des produits agroalimentaires est très riche. Selon les données du Ministère de l'Agriculture et du Développement Rural (Roumanie), il y a actuellement 1427 produits traditionnels protégés au niveau mondial, dont l'Union Européenne en détient 1404.

Les produits traditionnels français, italiens, espagnols, notamment la charcuterie, les fromages, les vins, jouissent depuis longtemps d'une très bonne réputation. Pour ne donner qu'un exemple, en 2020 en France il y avait plus de 1100 produits AOP, IGP et STG (vins, produits laitiers, spécialités de charcuterie). Le classement des pays selon le nombre d'appellations fromagères enregistrées en 2020, réalisé par la Commission Européenne, indique que la France en compte le plus, suivie de l'Italie, l'Espagne, le Portugal, la Grèce et l'Allemagne. Dans ce qui concerne la charcuterie, les six principaux producteurs européens sont l'Allemagne, l'Italie, le Royaume-Uni, la Pologne, l'Espagne et la France.

Dans ce contexte, les producteurs et les fermiers roumains ont essayé de promouvoir leurs produits et de demander eux aussi des certifications de qualité. Il y a une grande diversité de produits traditionnels roumains (charcuterie, fromages, vins, alcools blancs), provenant de différentes zones géographiques, préparés selon des méthodes anciennes, mais les consommateurs étrangers les connaissent très peu. Aussi, en 2018 la Commission de l'Union Européenne a-t-elle accordé aux producteurs roumains 1,6 millions d'euros pour mettre en avant le saucisson de Sibiu aux consommateurs étrangers.

Ces dernières années, les producteurs roumains ont demandé l'enregistrement des dénominations et ont réussi à obtenir de la part de l'Union Européenne des indications géographiques pour les produits traditionnels indiqués ci-dessous, en misant sur les avantages qu'une telle certification leur offre :
- éviter l'utilisation frauduleuse des dénominations ;
- vendre à des prix plus élevés ;
- trouver de nouveaux débouchés ;
- faire connaître à l'étranger les qualités exceptionnelles des produits et les particularités de la zone géographiques d'où ceux-ci proviennent ;
- promouvoir les régions du point de vue touristique.

Les produits roumains qui ont obtenu des indications géographiques sont :
- 2019 – IGP – *« cârnaţi de Pleşcoi » / saucisses de Pleşcoi* – des saucisses fumées préparées à base de viande de mouton, de chèvre et parfois de viande de bœuf, assaisonnées de piment rouge, d'ail et de thym, fabriquées par les membres du groupe l'Association pour la promotion de la saucisse de Pleşcoi (APCP)
- 2019 – IGP – *« telemea » de Sibiu* – un fromage à pâte mi-dure fabriqué à partir de lait cru de brebis), produit par les membres du groupe l'Association des producteurs de « Telemea de Sibiu »
- 2018 – IGP – *« scrumbie de Dunăre afumată » / alose fumée de Danube* – fabriquée par Deltaica Seafood SRL (ex MIADMAR DP S.R.L.)
- 2017 – IGP – *« novac afumat din Ţara Bârsei »* – un filet de poisson fumé, issu de l'espèce appelée « novac » [carpe à grosse tête (Arystichthys nobilis)], fabriqué par Doripesco Prod SRL
- 2016 – DOP – *« telemea » de Ibăneşti* – un fromage à base de lait de vache, salé avec la saumure provenant des fontaines d'eau salée d'une localité de la région de Transylvanie, fabriqué par Mirdatod Prod SRL
- 2016 – IGP – *« salamul de Sibiu » / le salami ou saucisson de Sibiu* – une charcuterie à base de viande de porc, fumée au bois de hêtre, fabriquée par les membres du groupe l'Association des producteurs du salami de Sibiu (APSS)
- 2011 – IGP – *le "magiun" de prune Topoloveni* – une confiture sous forme de pâte de prunes, sans sucre ajouté, sans conservateurs et sans additifs, fabriquée par Sonimpex Serv Com SRL.

Ce sont des produits préparés selon des recettes et des méthodes ancestrales, avec des ingrédients soigneusement sélectionnés, dans une aire géographique délimitée. Ils font partie du patrimoine culturel des Roumains et sont porteurs de valeurs et de symboles de l'identité nationale.

La dénomination de chaque produit comprend le nom de la zone géographique où il est produit et d'où proviennent les ingrédients utilisés pour la fabrication. « L'espace » est un élément qui sert à la construction d'une identité de marque, un lieu familier où le producteur et les consommateurs se rencontrent, un « point de repère ». Nous adhérons à la conception de Şuta (2018), à savoir l'espace familier peut aider à « réactiver la mémoire », à « reconstituer le passé » et à « récupérer son identité ».

3. Les sites web des entreprises agricoles roumaines

Il y a peu d'études consacrées aux produits traditionnels roumains et elles appartiennent aux historiens, aux ethnologues, aux spécialistes du tourisme, du marketing ou de la communication culturelle.

Dans leur communication concernant la perception de la population sur quelques produits considérés comme traditionnels roumains, Becuţ et Marinescu (2015) affirment qu'ils ne sont que des instruments de marketing, entrant dans « le paradigme du commercial et du consumérisme » et « s'éloignant toujours plus du local et de l'authentique » et que le terroir « devient plutôt une image qui vend ».

Csergo (2016 : 193) s'intéresse au patrimoine alimentaire en essayant de montrer que le domaine alimentaire, notamment la gastronomie, pourrait être considéré comme « un domaine culturel et patrimonial à part entière », ce qui aurait des impacts sur les marchés.

Nous avons consulté les sites web des fermiers individuels et des entreprises qui fabriquent des produits agro-alimentaires labellisés, pour voir la manière dont ces produits, très aimés par les Roumains, sont présentés à un large public. Il s'agit en général d'entreprises familiales ou de PMI. Nous avons examiné la construction du discours, en utilisant les méthodes fournies par l'analyse française du discours, à savoir les procédés de mise en thème de l'information : sélection et hiérarchisation des données, mise en page, mise en titre, opérations énonciatives (Florea, 2007).

Notre corpus est formé des pages d'accueil, des sections dédiées à la présentation de l'entreprise et des produits. Nous considérons que la manière dont l'information est sélectionnée, organisée et hiérarchisée nous donne des indices importants sur l'identité de l'entreprise et sur le mode de mise en valeur des produits.

Depuis quelques années, les entrepreneurs roumains du secteur agroalimentaire ont commencé à créer leurs propres sites web. Tous les producteurs et les commerçants des produits labellisés indiqués ci-dessus ont un site web.

Malgré le désir des entrepreneurs de se lancer sur le marché international, la plupart de leurs sites web ont uniquement une version en roumain (Aldis, Angst, Sonimpex Topoloveni, Mirdatod, Deltaica, Doripesco, Gabioti).

Pour s'assurer une audience plus vaste et pour faciliter l'accès à la communauté internationale, il y a des sites d'entreprises agricoles roumaines qui ont une version en anglais (Cris-Tim, Scandia), mais leur nombre est assez réduit.

Un nombre très restreint d'entreprises proposent des versions en anglais et en français (Agricola Bacău), en anglais et en allemand (Reinert) et aucune entreprise n'a de version en d'autres langues de l'Union Européenne.

4. Tradition – authenticité, unicité, travail artisanal, qualité, santé

Pour assurer la promotion et la vente des produits du terroir, les spécialistes de la communication et du marketing mettent en place de multiples stratégies linguistiques, dont la plupart se focalisent sur la subjectivité du discours. Le but est de se mettre en scène, de

se créer une identité, de gagner la confiance des consommateurs. Le site web est un support privilégié de communication, car il permet une mise en scène spectaculaire.

Les produits du terroir représentent un héritage, ils font partie de l'histoire et de la culture d'un peuple. Ce sont des objets uniques, précieux, de valeur, étant décrits principalement à l'aide d'un lexique affectif et de termes évaluatifs.

Le discours fait appel à l'histoire et à la culture (les recettes des ancêtres, les métiers d'autrefois, les méthodes de production traditionnelles), à l'imaginaire (diverses légendes), à la famille, à l'enfance et aux lieux d'origine (les sensations et les goûts de l'enfance, les plats et les goûters préparés par les grands-mères).

En examinant les noms des entreprises, les logos, les slogans, les textes dédiés à la mission et aux valeurs des entreprises, nous constatons la préoccupation pour la création d'isotopies, dont les plus fréquentes sont *l'isotopie de la famille* et *l'isotopie de l'art*.

4.1 Les pages d'accueil des sites web contiennent le nom de l'entreprise, le logo, la devise ou la signature de marque, divers slogans, des photos.

Les logos se focalisent soit sur l'expérience, en contenant l'année et/ou le lieu de création de l'entreprise,
- Angst – din 1990 (Angst – depuis 1990)
- Aldis – fondat 1990 Călăraşi (Aldis – fondée en 1990 à Călăraşi)

soit sur le cadre naturel particulier (l'image du logo contient les éléments primordiaux : l'eau, la terre, le ciel, aussi bien que la flore et la faune sauvage du delta)
- Delta din Carpaţi – DORIPESCO (le Delta de la zone des Carpates – DORIPESCO)

soit sur les valeurs de l'entreprise : l'association *tradition ~ santé* (l'image de fonds du logo représente une barque spécifique au Delta du Danube, *lotca*, deux pêcheurs, le filet de pêche ; le poisson provient d'un écosystème connu pour un mode de vin sain et écologique, d'une zone protégée)
- DELTAICA. Tradiţii sănătoase (DELTAICA. Traditions saines).

Angst est un groupe d'entreprises qui produit des charcuteries et le célèbre salami de Sibiu ; « Delta din Carpaţi – DORIPESCO » et « DELTAICA. Tradiţii sănătoase » sont les marques déposées de deux entreprises importantes (qui au début étaient de petites entreprises familiales) ; celles-ci produisent et commercialisent des produits gastronomiques à base de poisson.

Les traditions alimentaires des peuples influencent d'une manière significative les choix alimentaires, les méthodes de préparation des aliments, l'horaire des repas. Autrefois les aliments étaient simples et sains, les ingrédients provenaient du ménage ou de la ferme du paysan, des zones où l'industrialisation et l'agriculture intensive n'étaient pas arrivées.

Par conséquent, respecter les traditions alimentaires et culturelles signifie vivre au plus près de la nature et adopter une alimentation saine. Les logos constituent une invitation à respecter la tradition et l'expérience, à revenir aux sources et aux valeurs des ancêtres.

Les devises et les slogans, généralement présents sur la page d'accueil, respectivement sur les pages « Produits » s'inscrivent dans la même ligne, ayant principalement une fonction de « captation » et font principalement référence :
- au travail artisanal, élevé au rang d'art, et aux métiers anciens (Angst – Artizan al cărnii / Angst – Artisan de la viande ; Prăvălia lu' Gabioti din Pleşcoi. Atelier produse tradiţionale / L'épicerie de Gabioti de Pleşcoi. Atelier produits traditionnels)
- aux traits moraux des entrepreneurs et du personnel (Agricola – neam de gospodari / Agricola – peuple laborieux)
- à la relation *homme ~ nature* (DORIPESCO, ÎN ARMONIE CU NATURA! / DORIPESCO, EN HARMONIE AVEC LA NATURE !)

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- au caractère authentique des produits et au lien avec le terroir (Gustul de Ibăneşti / Le goût d'Ibăneşti)
- à l'aspect sensoriel et à la qualité « premium » des produits (Aldis – gustul mezelurilor româneşti de calitate / Aldis – le goût de la charcuterie roumaine de qualité)

Les mots-clés qu'ils contiennent servent à construire une identité. L'entreprise est une communauté (une famille, un peuple) de gens travailleurs, qui vivent en symbiose avec la nature. Elle a une « identité sociale » (Simone, 2018 : 3), consistant dans un sentiment de partage. Le client qui achète ses produits accède ainsi à cette communauté, en partageant avec elle des valeurs et en s'inscrivant dans une hiérarchie sociale.

Elle garantit également aux consommateurs, en tant que membres de cette communauté, que les produits ont une qualité exceptionnelle. Les produits sont fabriqués par des « artisans » ; leur nature spéciale est due à la contribution manuelle du travailleur, qui investit non seulement du temps et du savoir-faire, mais aussi de l'attention et de l'amour.

En outre, ces dernières années les consommateurs ont commencé à être très attentifs aux étiquettes (viande sans antibiotiques, charcuterie sans additifs, colorants et arômes, produits provenant de fermes), étant prêts à payer plus cher pour avoir des produits de très bonne qualité.

La page d'accueil de Deltaica bénéficie d'un design attrayant. Elle contient le logo, un court texte, une image de la vie sous-marine et une image représentant un pêcheur. Le titre du texte qui accompagne la photo constitue aussi bien une invitation à la navigation sur le site et à la découverte des produits que la promesse d'une expérience magique :

- « Bun venit pe tărâmul legendelor deltaice » / Bienvenue au pays des légendes deltaïques

Ces éléments sont sélectionnés et organisés dans le but de créer un lien émotionnel avec les potentiels consommateurs. Selon Lindstrom (2013), les consommateurs développent un attachement émotionnel pour les marques qui évoquent certains rituels, histoires et symboles.

4.2 Dans la partie consacrée à la « philosophie » ou à la « vision » de chaque entreprise on évoque explicitement des valeurs telles que l'amour, la famille, l'esprit de communauté, le travail artisanal, l'authenticité, l'unicité, la passion.

Selon les dirigeants de Sonimpex, « une affaire de famille signifie âme et implication ». Les fondateurs de la société Mirdatod (les frères Todoran) qui produit le fromage d'Ibăneşti, expliquent le caractère unique des produits de la manière suivante :

- « De unde vine unicitatea produselor noastre ? Din trudă, din sute de nopți nedormite, din dragostea cu care noi și oamenii noștri facem produsele noastre. » (D'où vient le caractère unique de nos produits ? Du labeur, des centaines de nuits blanches, de l'amour grâce auquel nous et nos travailleurs fabriquons nos produits.)

Les représentants de l'entreprise Angst affirment que chaque produit contient une partie de leur âme. On pourrait dire que le travail et l'amour sont « les ingrédients » du succès.

L'implication de tous les membres de l'organisation et la passion qui les anime représentent les valeurs fondamentales sur lesquelles est construit le prestige de l'entreprise.

Pour la société Agricola il y a quatre valeurs essentielles : « la réputation, l'esprit de famille, le courage innovateur, la passion pour les choses bien faites ».

L'entreprise Cris-Tim se focalise sur « le souci des autres, la responsabilité, l'innovation, la tradition et la qualité ».

L'entreprise Angst mise sur « la qualité, la tradition, la transparence, la créativité, le partenariat avec les consommateurs ». Avec le slogan « Excelenţa face diferenţa! » (L'excellence fait la différence !), l'entreprise affirme ouvertement son engagement à fabriquer de la charcuterie de très grande qualité. Elle se propose d'inclure dans son portefeuille des recettes authentiques roumaines, de conserver le patrimoine, les valeurs et l'histoire des Roumains. En même temps, elle considère que pour se développer il faut innover. La créativité et l'innovation sont des valeurs essentielles. Ainsi, l'entreprise crée la gamme de produits (GAMA TEZAUR) pour rendre hommage aussi bien à l'assaisonnement simple en style roumain qu'à Filippo Dozzi, le fondateur de la première fabrique de charcuterie de la ville de Sinaia et le créateur de la recette originelle du salami de Sibiu :

- « Creativitatea conferită de viziune, deschiderea spre nou şi curajul de a face lucrurile autentic sunt cei trei piloni ce definesc unicitatea brandului Angst, reflectată prin noua gamă de produse. » (La créativité conférée par la vision, l'ouverture à la nouveauté et le courage de faire les choses de manière authentique sont les trois piliers qui définissent la singularité de la marque Angst, reflétée par la nouvelle gamme de produits.)

Pour toutes les entreprises de notre corpus, la tradition reste un élément fondamental. Elle occupe une place importante dans le discours de présentation et de promotion, étant évoquée le plus souvent de manière explicite. En général, les consommateurs sont très sensibles à ce sujet. La tradition représente un point de repère, à partir duquel les entreprises innovent et diversifient leur production dans le but d'élargir la clientèle. C'est pourquoi on utilise fréquemment l'alliance de notions opposées : *tradition – technologie moderne* ; *recette ancienne – créativité* :

- « Chez Agricola la tradition va de pair avec la technologie »
- « Marca Angst s-a consolidat prin produsele excepționale, având la baza rețete autentice, utilizarea de carne de calitate superioară și eliminarea aditivilor alimentari » (La marque Angst s'est renforcée grâce à ses produits d'exception, basés sur des recettes authentiques, l'utilisation de viandes de haute qualité et l'élimination des additifs alimentaires »)

D'ailleurs, on allie souvent les bons côtés de l'alimentation traditionnelle aux aspects pratiques et fonctionnels de l'alimentation moderne.
En s'interrogeant sur le caractère subjectif ou objectif de la tradition, Pfirsch (1989 : 301) constate que celle-ci « est fondamentale […] pour garantir une qualité gastronomique satisfaisante ».
Les producteurs s'accordent à dire qu'on obtient des produits de qualité en utilisant :
- des ingrédients « particuliers », « uniques », issus du « terroir » (le fromage d'Ibăneşti est produit en utilisant le lait des vaches de la vallée de Gurghiu et une saumure extraite de puits d'eau salée, situés dans la localité d'Orșova),
- « les meilleurs ingrédients », attentivement sélectionnés,
- des ingrédients « vrais »,
- des arômes et des épices « naturels »
ou bien :
- une procédure de fabrication « distinctive », héritée des ancêtres,
- des outils utilisés dans le passé,
- le travail manuel durant une ou plusieurs étapes de production,
- une recette « authentique ».

La *qualité*, attestée par les certifications européennes mentionnées ci-dessus, est un argument primordial de promotion et de vente. Le thème « qualité » n'est devenu un « enjeu de société » qu'à la fin du XXe siècle (Eymard-Duvernay, 1993 : 12), mais de nos jours elle est fondamentale dans les échanges commerciaux :

- Angst : « Pentru că obiectivul nostru este obtinerea unor produse de calitate excepțională, este foarte important pentru noi sa folosim cele mai bune ingrediente. » (Parce que notre objectif est d'obtenir des produits d'une qualité exceptionnelle, il est très important pour nous d'utiliser les meilleurs ingrédients.)
- Aldis : o provocare în a descoperi "gustul mezelurilor românești de calitate" (un défi pour découvrir « le goût de la charcuterie roumaine de bonne qualité »).

Nous allons montrer qu'à côté de la tradition, d'autres arguments (« terroir », « authentique ») ont beaucoup de poids dans le processus de mise en thème et de mise en valeur des produits.

4.3 Dans les pages *Produits* la fonction de captation joue un rôle tout aussi important que dans la page d'accueil. Les produits IGP ou AOP occupent une place importante dans l'économie de ces pages, ils sont la garantie de la bonne qualité de tous les produits de l'entreprise. Leur statut d'excellence leur confère une fonction d'emblème.

Pour construire la réputation d'un produit on utilise des « symbolisants » (Lindstrom, 2013), à savoir des éléments qui ont la capacité d'évoquer des associations très fortes avec la santé, la fraîcheur, la qualité, etc., dans le but de vendre « de l'espérance » : une vie plus saine, plus heureuse, une vie de luxe.

En général, on met en évidence une ou plusieurs qualités particulières des produits ou bien des caractéristiques essentiellement dues à l'origine géographique ou à la tradition. Les photographies et les slogans accompagnent des textes qui vantent les qualités des produits à l'aide d'un *vocabulaire affectif*. Nous donnons l'exemple du célèbre salami de Sibiu, dont les descriptions sont écrites en termes élogieux.

L'histoire de ce produit remonte à la fin du XIXème siècle, mais elle est assez controversée. On dit que le salami de Sibiu a été inventé par un immigré italien installé en Transylvanie, Filippo Dozzi (un maçon passionné de charcuterie) qui avait ouvert une petite fabrique à Sinaia. Appelée d'abord « salami d'hiver », cette spécialité est devenue rapidement le saucisson préféré des Roumains, un produit de luxe servi surtout aux repas festifs. En même temps, à Mediaş, Joseph Theil produisait des saucissons ayant des caractéristiques similaires dans sa fabrique de charcuterie, qu'il transféra en 1922 à Sibiu. Il distribuait ces produits sous le nom : « le véritable salami de Sibiu ».

Sur tous les sites consultés, ce saucisson est décrit comme un objet « précieux, noble ». C'est le symbole d'une vie de luxe, qui confère à ceux qui le choisissent raffinement, élégance, bon goût :

- Cel mai preţios salam crud-uscat din România, "răsfăţul suprem" / le salami cru séché le plus précieux de Roumanie, « le délice suprême » (Agricola)
- « Préparé selon une recette roumaine authentique, à partir de viandes soigneusement sélectionnées, assaisonné d'un mélange unique d'épices et rendu parfait par la saveur des moisissures nobles, le Salami de Sibiu AGRICOLA vous offre un exemple de parfait délice et raffinement. »
- « Un salam cu renume … » / un saucisson renommé (Angst)
- un produs cu « gust desăvârşit » / un produit ayant un goût exquis (Reinert)

L'authenticité est considérée elle aussi très importante, car seuls les produits authentiques (ou vrais) – préparés selon des recettes originales – ont des qualités exceptionnelles. La tradition et l'authenticité sont des notions étroitement liées :

> « Tous les observateurs s'accordent pour situer dans le passé l'âge d'or des produits alimentaires authentiques. Cette référence au passé qui contribue aux caractéristiques forcément positives de l'objet authentique montre bien qu'il ne s'agit pas en réalité de l'objet in se mais du regard porté sur l'objet. » (Bonnain-Dulon, Brochot, 2004 : 2)

Pour Bonnain-Dulon et Brochot (2004), l'authenticité est « un mot magique qui transforme en or tout ce qu'il touche ». Ils s'interrogent sur ce que signifie l'authenticité dans le domaine des produits alimentaires, en analysant plusieurs définitions dans différents domaines :

> « Par exemple, en arts primitifs, elle est définie comme la qualité d'une chose dont l'origine et la nature sont bien établies. Et si nous acceptons cette définition, nous sommes très près de l'authenticité des produits du terroir. » (Bonnain-Dulon, Brochot, 2004 : 2)

Le caractère authentique des produits, des recettes et des ingrédients réussit à assurer la transmission et l'évocation des émotions, des sensations et des souvenirs :

- Les produits « gardent le goût authentique roumain. » (Agricola)

En outre, à la promesse de l'authenticité s'ajoute la promesse d'une vie saine, proche de la nature. On garantit aux consommateurs que les aliments sont produits de la manière la plus naturelle possible, avec des ingrédients issus du terroir, selon un mode de production biologique.
Produire en suivant les recettes et les règles de la tradition signifie également ne pas utiliser de produits chimiques de synthèse et en même temps respecter l'environnement, les agriculteurs, les fermiers. Les gens sont prêts à dépenser plus pour manger bio.
L'entreprise Cris-Tim lance la campagne « Eticheta curată » (L'étiquette propre), en voulant signaler aux consommateurs les produits sans gluten, sans soja, sans arômes artificiels ajoutés.
Les fabricants de la confiture de Topoloveni vont jusqu'à attribuer à leur produit les qualités exceptionnelles d'un médicament :

- « Dorim să oferim consumatorilor produse alimentare integral naturale, fără zahăr, fără conservanţi, fără aditivi alimentari, din respect pentru tradiția gastronomică românească și pentru sănătate. … Alimentele trebuie să fie "medicamente", care să ne sporească nivelului calității vieții. » (Nous voulons offrir aux consommateurs des produits alimentaires entièrement naturels, sans sucre, sans conservateurs, sans additifs alimentaires, par respect pour la tradition gastronomique roumaine et pour la santé. … Les aliments doivent être des « médicaments » qui améliorent notre qualité de vie.)

et garantissent aux consommateurs un haut niveau d'expertise :

- Suntem experţi în magiun (Nous sommes experts dans la fabrication du « magiun »)

Selon l'entreprise Mirdatod, à l'aide d'ingrédients naturels on peut réaliser des produits qui ont les caractéristiques des « objets d'art » :

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- « Într-un fel sau altul, am ridicat gustul la rang de artă. Este arta de a găti românește bine, de a folosi în mâncare tot ce ne dă pământul mai bun, arta de a ne satisface nu foamea, ci nevoia de a mânca ceva bun, ceva cu gust, ceva care fie ne trezește o amintire, fie ne creează una. » (D'une manière ou d'une autre, nous avons élevé le goût au rang d'art. C'est l'art de bien cuisiner à la roumaine, d'utiliser dans la nourriture tout ce que la terre nous donne de mieux, l'art de satisfaire non pas notre faim, mais le besoin de manger quelque chose de bon, quelque chose qui ait du goût, quelque chose qui soit éveille un souvenir en nous, soit en crée un.)

Dans la période de crise générée par la pandémie de Covid-19, la santé est redevenue un thème primordial du discours. Les gens se sont réorientés vers les produits traditionnels. Ils ont commandé sur Internet, ont acheté dans de petits magasins qui distribuent des produits traditionnels et des spécialités ou bien ils ont préféré acheter directement auprès des petits producteurs, en évitant les grands centres commerciaux et les chaînes de supermarchés.

Le discours identitaire et le discours de promotion des produits traditionnels ont non seulement des finalités économiques (élargir le marché, accroître les revenus), mais aussi des finalités sociales (protéger les communautés locales) et éducatives (aider les consommateurs à faire des choix conscients, à adopter une diète nourrissante, diversifiée, naturelle, à optimiser leur niveau de vie).
En même temps, il s'agit de persuader les consommateurs étrangers que ces produits, qui connaissent une forte dynamique de consommation en Roumanie, méritent d'être choisis et inclus dans la diète. Selon nous, les marques analysées dans cette communication sont de véritables « ambassadeurs de la Roumanie ».

4. Conclusion

Au-delà du respect des règlementations strictes imposées par l'attribution du statut d'IGP, les fabricants et les commerçants de produits traditionnels sont préoccupés par leur réputation, par la promotion de leur image et de leurs marques. Ils s'érigent en experts, mais n'oublient pas que l'émotion est un élément important dans la communication avec les clients. C'est pourquoi ils construisent un discours à haut degré de subjectivité, organisé autour d'isotopies qui assurent la cohésion de l'ensemble *textes ~ images*, à savoir la famille, l'enfance, la santé, le luxe, l'art.
La « tradition » est à la fois un élément constitutif de l'identité de marque et un argument fondamental de la stratégie commerciale. Elle est synonyme de qualité, d'authenticité, de santé. Les produits fabriqués en tenant compte des valeurs de la tradition sont des objets d'art, uniques, exceptionnels, responsables. Ils constituent une partie importante du patrimoine culturel de la communauté, étant de véritables emblèmes nationaux.

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COMPENSATING FOR THE IMMATERIAL. A LEXICAL AND SEMANTIC ANALYSIS OF AMERICAN BANK SLOGANS

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Abstract: *The aim of this paper is to conduct a lexical and semantic analysis of bank slogans in order to shed light on how the immaterial character of financial services as well as the channel of communication – in this instance the Internet – influence the choice of vocabulary. We chose to focus on the case of the United States of America as there is an online index of over five thousand existing banks with links to their websites if they have a presence online. This allowed us to create a database of over fourteen hundred slogans from as many banks. The methodology, described in the first part of the study, relies on empirical research and content analysis with the help of online tools used to generate a word count based on our sample. The results obtained were presented as bar charts showing groups of words and their number of occurrences in descending order. This allowed to highlight meaningful word clusters and to identify the lexical and semantic patterns of American bank slogans. The findings reveal a small cluster of words (including determiners, conjunctions and prepositions) with an occurrence rate superior to 1%, sufficient, however, to establish the main semantic patterns further supported and enriched by the analysis of two more clusters (0.5%-1% and 0.2%-0.5%). It becomes apparent that, through this form of asynchronous communication, American banks seek to compensate for the immateriality of the service provided by using slogans which help establish their identity within the community they serve and humanize the banking experience through the creation of a meaningful relationship with their (potential) customers.*

Keywords: *slogan; online advertising; American banks; lexical analysis, semantic analysis*.

JEL classification: *G21; M37; Y80*.

1. General Introduction and Methodology

The aim of this paper is to provide a lexical and semantic analysis of the slogans of American banks based on the premise that the particular nature of financial services has a direct impact on the vocabulary used. Indeed, researchers emphasized that financial services and products are immaterial (Paviot, 1995), somewhat vaguely defined and of intangible quality. In turn, this would limit the "levels of consumer involvement, excitement, symbolism, or emotions" (Stevenson, 2012). Instead, the purpose of the appeal is to emphasize the bankers' professionalism and know-how in order to establish trust: "La communication bancaire doit axer son message sur le savoir-faire et prouver que l'on peut faire confiance aux banquiers. Elle doit procurer des symboles tangibles: faire que le service soit compris, avoir de la continuité et promettre ce qui est possible." ["Banking communication must focus on the know-how and prove that bankers can be trusted. It must provide tangible symbols: to make sure that the service is understood, to have continuity and to promise what is possible."] (Paviot, 1995: 104)

As for online advertising, it is an asynchronous form of communication, where the message is activated individually at the moment of reading (Lazović, 2014 apud Janoschka, 2004: 2). Given its specificity, online advertising, while borrowing from traditional forms of advertising,

has to develop its own communication strategies. Indeed, the contact between the (potential) customers and the bank is established indirectly, while communication is one-sided, i.e. virtually monologue-based, with the webpage visitor as the silent recipient of the displayed content. Therefore, the appeal must create immediacy while enhancing persuasion through the characteristics specific to slogans in general: attentive value, memorability, readability and selling power (Ke & Wang, 2013: 276). Bank slogans in particular rely on evaluative lexical items, as they transmit, implicitly or explicitly, what is good, so as to draw attention to the bank's "importance, competitiveness, international role, innovation capacity, tradition, customer focus, etc." in an effort to "stress more or less overtly [its] higher level of goodness in comparison with other financial institutions" (Malavasi, 2007: 177). The vocabulary is therefore going to be marked by favorable connotations and a preference for keywords that trigger positive associations. The most common parts of speech used to that end are the noun, the adjective and the verb. The question then is to what extent the immaterial, intangible attributes of financial services are going to be catalysts for lexical diversity in an attempt to compensate for the lack of proper contact between the potential customers and the bank.

The list of slogans used for the present analysis was created based on the Bank Branch Locator – Online U.S. Banks & Branches Locator, a database containing "5275 local and national banks offering banking services in United States with nearly 83000 branches in 10182 cities" (List of All Banks in U.S., 2021). The database does not provide direct access to the slogans themselves, but to the banks' websites and to their logos (which sometimes contain the slogans as well). This made it possible to build a list of 1411 bank slogans from 1401 local banks (having branches in no more than three, and most of the time, neighboring, states) and 10 national banks. This led to an almost tenfold increase of our existing database used for a cultural analysis of American financial slogans (Veche, 2018). We need to mention that we chose to take into account as separate entries slogans shared by several unrelated banks, with no differences in wording as, in our opinion, this reinforces lexical patterns and highlights key preferences. We also chose to regard as slogans short sentences of the type "Est. / Established…", "Since…" and "Founded…" followed by the year or the number of years, as these are statements pertaining to the banks' experience and ability to stand the test of time, which in turn is associated with reliability.

To perform a text analysis of the word frequency we sampled several free online utilities and chose "Text Analyzer" provided by Online Utility (Adamovic, 2009), which also identifies and displays the most frequent phrases in a body of text.

2. Analysis and Results

The 1411 slogans are based on 789 different words (items which are part of the same word family count separately). Their distribution according to the rate given by the number of occurrences is presented in Figure 1.
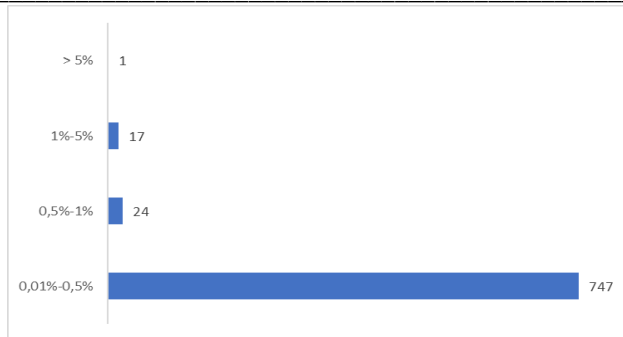
Figure 1: The word rate.

The results show a preference for a cluster of words – only eighteen (roughly 2,28% of the database) – with a distribution superior to 1% and exceeding 5% in only one instance. They are shown in Figure 2.
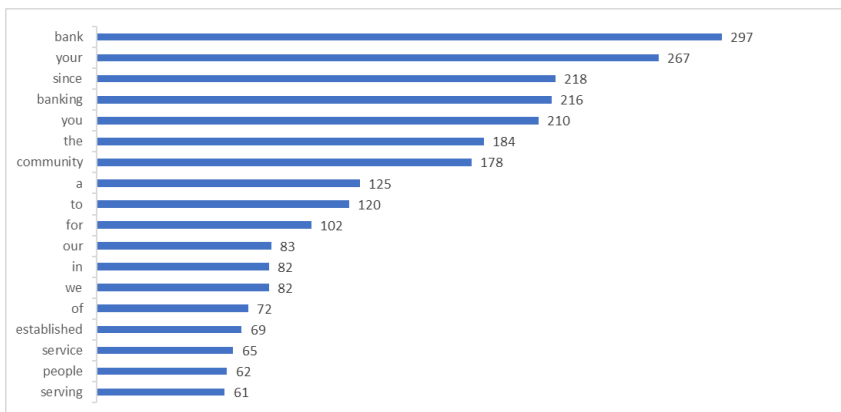
Figure 2: Words with an occurrence rate superior to 1%.

Unsurprisingly, the word with the highest number of occurrences is "bank", used mostly as a noun (*The Bank Your Bank*), but also as a verb in a significant number of slogans (*Bank On Us!*), when not as both in the same sentence – compulsively, we might add (*Bank With A Bank You Can Bank On*!). Clearly, when a noun, its main purpose is to identify the reality (i.e., the financial institution) behind the services offered, thus giving weight to an otherwise immaterial entity since the contact with the customer is established online. As a simple verb, it may either serve the same purpose, when used with the meaning of "putting money in a bank" (*Bank with BoB*), or it conveys the idea of "dependability" / "reliability" when used as a phrasal verb (*You can bank on us!*). Not far behind, with 216 occurrences, "banking" is used to the same effect (*Banking the way it should be*).

The determiner "your", ranking second, and the personal pronoun "you", ranking fourth, express possession and thus create a subtle bond between the bank and the potential customers, or reinforce an existing one with current customers. Whether a relationship catalyst or reminder, both the possessive adjective and the personal pronoun establish "communicative immediacy" as "online bank advertisements generally try to involve users in the communication process" (Lazović, 2014: 96), not without flattering them, since both forms shift the focus on the recipient of the message (*It's your bank!* / *Your bank. For life.* / *Taking you into account* / *You matter to us*).

Because most of the banks in our list are local and "bank services and products are marketed at a domestic audience" (Lazović, 2014: 91), their existence and purpose and those of the community they serve are deeply intertwined. It is therefore not surprising that the noun "community" is one of the most frequently used. It suggests proximity and camaraderie, while also giving a sense of belonging. The bank then ceases to be an "outsider" and becomes a community member with the same stakes as the rest, while very often its financial nature is not even mentioned (*Partners in the Community* / *Putting the Community First* / *Strength. Service. Community.* / *The Community Advantage* / *This is Your Community. This is Your Bank.* / *Where Community is First!*).

The pronoun "we" (82 occurrences) and the possessive "our" (83 occurrences) are used to "populate" the otherwise rather abstract entity called "bank". The customer perceives behind them the work of a team of people, which increases trust as it "humanizes" the financial institution and makes it resemble any other company (*Doing what we promise*). At the same time, this is often done to suggest cooperation (*Together We Can* / *Together We Grow* / *United We Stand!* / *We Are One*) and a mutually beneficial partnership with a common goal (*Together we'll find a way* / *We grow by helping others grow!*), although the bank usually plays second fiddle (*We Make Banking About You* / *We Revolve Around You* / *We promise to walk in your shoes*).

A similar goal is achieved by the express use of the shortlisted word "people", which gives weight to the financial service as its existence is possible, for the brick-and-mortar banks at least, only through human interaction. From this perspective, slogans including this word can be divided into those focused on the staff (*Good People. Strong Values* / *Our People Care. It's Our Promise.* / *Our People Make The Difference.)* and those focused on the customer valued as an individual and a human being, which in turn humanizes the service (*Because people are more valuable than money* / *Investing in People* / *It's all about people!*). A feeling of closeness and familiarity is induced by the slogans of some local banks serving a small community (*It's nice to work with people you know!*), with a touch of professionalism (*People who know banking People who know you*). It is noteworthy that the words "people" and "community" are very frequently included in the banks' names ("People's Bank" / "Peoples Bank" / "Community Bank").

As mentioned above, we chose to include in the list of slogans the preposition "since" and the adjective "established", followed by the year the bank was created. Because most of the time they are part of the logo itself, they reinforce the identity of the bank. The idea suggested is that of strong tradition and longevity, which the customer further interprets as professionalism, reliability, and stability. Another feeling derived is that of trust, which is important when it comes to someone's financial transactions, savings or long-term deposits. For banks, attempting to exude trustworthiness is paramount, especially as over the past decades, confidence in financial institutions has declined due to crises. Faced with image problems, they try "to restore trust and retain it by offering safety, security and reliability […]" (Lazović, 2014: 92). Furthermore, "established" also conveys the idea of respectability for having stood the test of time (Cambridge University Press, 2019). The message is either short and straightforward (*Since 1852* / *Established 1934*), or included in a longer slogan, as part of the same sentence or as a separate one (*Getting it done since 1848* / *Established 1904. Strength. Integrity. Stability*). The preposition "for", followed by the amount of time during which the bank has been operational, serves the same purpose (*Heritage And Experience For 75 Years* / *Locally Owned for over 117 years!*).

Last but not least, banking is about "service" and words such as this noun itself and the present participle "serving" are reminders of that. Presenting itself as an intermediary between the customers and their goals while providing expertise and the financial means for that goal to be reached, the bank adopts a humble stance, while suggesting a relentless and usually long-term effort in supporting its clientele. If, sometimes, through the slogan, the bank introduces itself as a service provider by addressing the individual customer

directly (*Serving You Since 1902* / *Sixty Years, Serving You* / *Serving you is our life's work.*), most of the time it uses the opportunity to make it clear that its purpose is to serve and provide financial support to a community or to the inhabitants of a particular area (*Serving Our Rural Communities Since 1884* / *Serving the Community Since 1917* / *Serving this area since 1906* / *Serving the Hill County Since 1908* / *Serving Montana's Finest Since 1960*). While we have deliberately ignored the definite article and the prepositions which simply help build the phrases with little or no impact on their meaning, the analysis of the words most often used in American bank slogans manages to establish a discernible pattern. First of all, there is a need to name the entity and its intangible products ("bank" and "banking") and to show that its existence – very often long-lived ("since…" and "established…") – is owed to and dependent on the customer or a community and their financial needs ("you" and "your"; "community"). The bank's purpose is therefore to "serve", and for that the entity must efface itself in favor of the human element ("we" and "our") since the transactions are done by and for "people".

While the number of occurrences dwindled rapidly from one word to the next in the previous figure, it only decreases gradually for the rest of the words in the list and, although the rate of appearance is under 1%, it is worth investigating whether they support the previous pattern. Obviously, an exhaustive analysis would exceed the limits of the present paper, yet we will present briefly relevant details. For a clearer perspective, the group of words with an occurrence rate between 0,5% and 1% is presented in Figure 3.
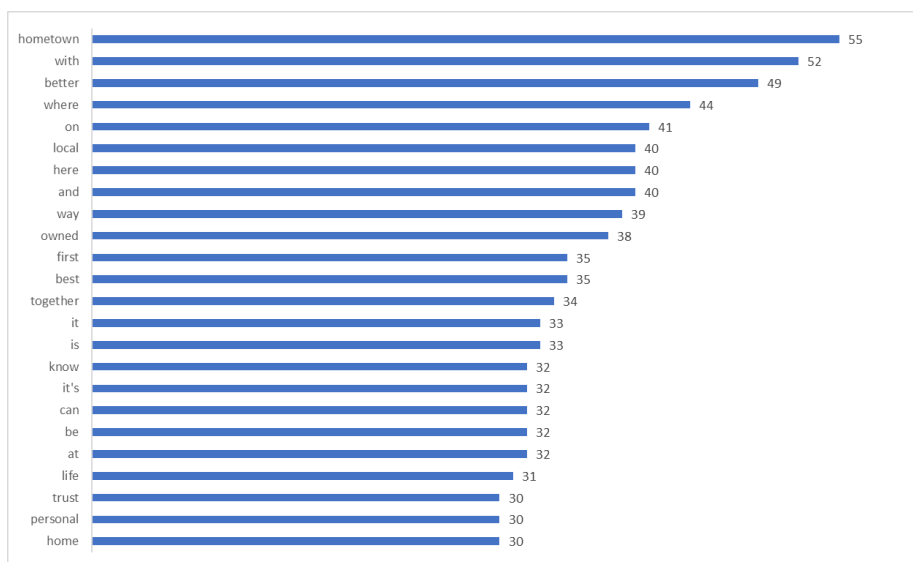
Figure 3: Words with an occurrence rate ranging from 0,5% to 1%.

Several details stand out from the very beginning. The fact that most banks operate locally instead of nationally translates into a limited use of power words and even when used, "better", "best", and "first" are, in most cases, about the customers or about their banking experience (*Life's Better When We're Connected* / *For a Better Way of Life* / *In Your Best Interest.* / *Your best friend in banking.* / *Putting People First* / *Where Community is First!*). Instead, the slogan favors words suggesting closeness, reliability, and trust. Unsurprisingly, at the top come "hometown" (*Hometown Banking!* / *Your Hometown (Financial) Advantage* / *Banking With A Hometown Touch!*) and the adjective "local" (*Local. Not Limited.* / *Keeping it local* / *True Local. True Banking* / *It's A Local Thing*) – in one instance enough to make the entire slogan (*Local.*). Sometimes, the former further circumscribes the activity to a certain town – also "home" to both the bank and the inhabitants, thus evoking familiarity to

the customer (*Home Owned. Home Operated. Home Town. / Home Style Service / The Home Folks*). Therefore, "hometown" is on par with "community" since sharing the living area with the customers equals being closer to them and directly involved in their daily routine. The adverb "together" is often used to reinforce the banks' involvement through a customer-oriented approach or as promoters of inclusive growth (*Working Together For You / Doing great things together / Pulling Together For You… / Growing Prosperity Together*). Many of these local banks are "here", acting like a reassuring presence that guarantees financial security. This is particularly effective in the case of financial institutions with a long tradition in a certain area or interested in conveying a sense of long-term commitment to supporting the community (*We're Here On Your Account Since 1889 / Since 1851. Life is what you make of it. We're here to help. / Traditional banking that's here to stay! / Here for good. / Here with you / Here for You. Every Day.*). As such, the bank is a familiar presence, well-known and implicitly trustworthy, hence the frequency of the verb "to know" (*Community People You Know / You Know Us We Know You! / The people you know.*) and of the word "trust", used either as a noun or as a verb (*Strength. Trust. Community. / Relationships. Solutions. Trust. / People You Know. People You Trust. / Banking You Can Trust.*). In such a context, a merely utilitarian view of banking is out of place and most slogans aim to limit this perspective. The banking service is part of most people's lives and achieving financial security is a long-term process, which is why the use of the noun "life" as a reminder of this – sometimes with a prescriptive attitude (*Spend Life Wisely*) – as well as a guarantee for lasting support, does not come as a surprise (*Family. Business. Life. / Helping Members… Build a 'Wonderful Life' since 1887 / for wherever life takes you / Growth. For You. For Life.*). It is the reason why some of them revolve around the adjective "personal" used in an effort to humanize the banking experience as well as to suggest the local banks' genuine commitment to the local community to which their staff often belong as well (*Personal Friends, Personal Bankers / Personalized Service From People You Trust / To us, it's personal. Serving the community since 1912 / It's not just business. It's personal. / The Bank of Personal Service*).

Finally, we chose to include another set of words (Figure 4), with an occurrence rate inferior to 0,5% and superior to 0,2% (at a limit of 14 occurrences), which keep reinforcing the previous pattern.
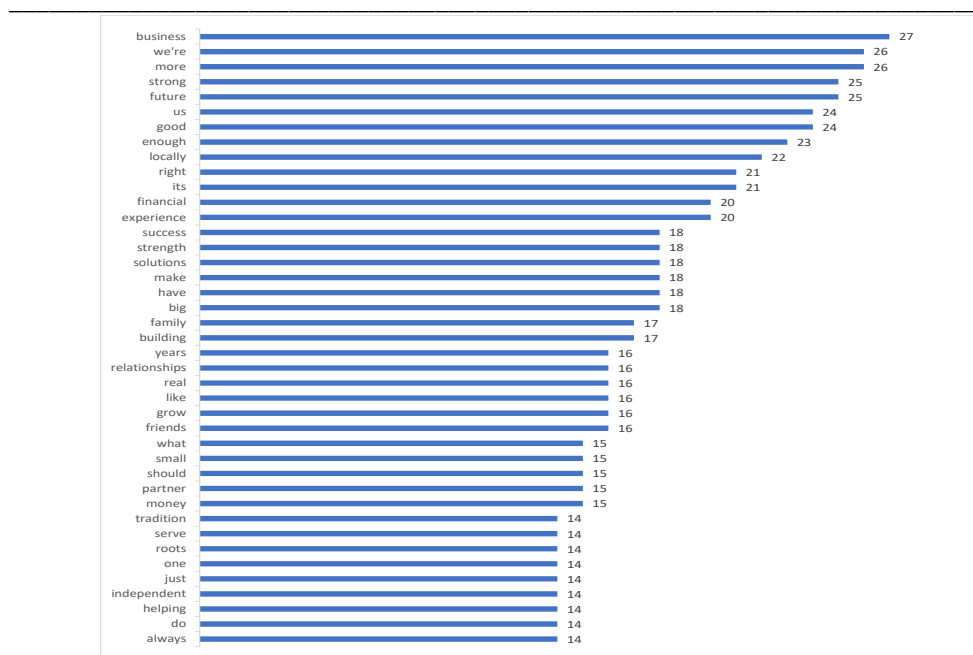
Figure 4: Words with an occurrence rate <0,5% and >0,2% (with a limit of 14 occurrences).

At the top of this list, "business" is only three occurrences short from being included in the previous one. In some instances, it is needed to narrow down the activity to business banking, in which case it is used alone (*The Bank Business Banks On* / *Banking Built for Your Business*), while in others it is used alongside other terms which emphasize the bank's devotion to its customers, their needs and interests (*We Take Your Business Personally*), as well as to create a sense of closeness (*We do business right here at home* / *Where business and friendships meet*).

What is obvious is that most of these words can be grouped according to the general meaning to be conveyed. "Financial" and "money" represent the banks' core activity, so they are inevitable. However, since banks are a common presence everywhere, most slogans attempt to incorporate them creatively (*Long Live Your Money*, *Nice People with Money*) and often in conjunction with metaphors (*Your financial bridge* / *Your Financial Outfitter / Your Financial Cornerstone*). The trustworthiness, reliability and profitability of banking activities and services are paramount and therefore well represented in this group as well: "tradition" / "roots" (*A Tradition of Trust* / *We have our roots where others have their branches*), "future" / "years" / "always" (*Where Your Future Shines* / *100 Years. 100 Reasons.* / *Always there* / *Always Within Reach*), "experience" (*People You Know. Experience You Trust.*), "success" (*Success. Together.* / *Success has a bank*), "strength" / "strong" (*Financial Strength In Local Hands.* / *Aim High. Bank Strong.*), "good", "right", "big" (*The Bank that's Good as Gold* / *Here for good.* / *Right By You* / *Bank in the right direction* / *Small in Size, Big on Service* / *We're Big on YOU*), "partner" (*Partners in Your Vision.* / *Your Partner For Life*). Another group reinforces the already well-represented idea of closeness and familiarity that gives identity to local banks as actual members of the communities in their respective areas: "family" / "relationships" / "friends" (*Friend of the Family Since 1899* / *We treat you like family* / *banking on relationships* / *Earning Relationships* / *You're Banking with Friends*).

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3. In conclusion

The fact that the lexical and semantic analysis allowed for such clearly discernible patterns supports the idea that, indeed, bank slogans need to compensate for the immateriality of the services provided by instantly establishing a meaningful connection with the recipient of the message. Surprisingly, the sampled slogans rely on the clever use of only a limited number of words with a significant number of occurrences, while addressing a two-pronged challenge: to properly carve out an identity for an otherwise immaterial entity operating in a competitive landscape, while defining the relationship with its customers – often at an individual level – through an approach meant to humanize the banking experience.

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MANAGEMENT, MARKETING, ECONOMIC INFORMATICS AND CYBERNETICS

INTEGRATED REPORTING AND PERFORMANCE. A BIBLIOMETRIC ANALYSIS

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Abstract: *This paper consists of an analysis of scientific works with respect to the subject of integrated reporting and its connection with the performance topic. Integrated reporting, implemented by the International Integrated Reporting Council, represents a strategic communication regarding various resources of the organizations, their relationship with all stakeholders and their capitals (financial, manufactured, intellectual, human, social and relationship, and natural capital) created over time. This new form of reporting is adopted by different organizations in many countries nowadays, yet there are some inconsistencies, especially in terms of insufficient clarification of the concept, both conceptually and procedurally (regarding the adoption of the International Framework), as well as the opportunities and real benefits of its implementation. As the number of studies on integrated reporting in the last decade also substantially increased, while many evidences find themselves in conflict, it raises the need to highlight the main common subjects related to this theme. Thus, by means of bibliometric analysis, this study qualitatively analyses 262 references from the Web of Science (WoS) Core Collection Database, while addressing the research tools provided by the VOSviewer similarities visualization program and screening the existing specialty literature. The focus of the study is on co-occurrence of keywords, co-authorship and co-citation in the research field of integrated reporting and its performance and it reflects the most common concepts associated with these terms and the authors, organizations and countries that researched these themes. The results of the study revealed the large areas in which integrated reporting exerts its influence and the implications in both the social and the economic sphere, while highlighting the need of a long term organizational change with this respect.*

Keywords: *Integrated Reporting; Performance; Bibliometric Analysis; Visualization.*

JEL Classification: *M14; M49; O16.*

1. Introduction

Over the past decade, the number of integrated reporting (IR) adopters has substantially increased, with the aim of companies of focusing not solely on financial reporting, but also non-financial aspects, trying to align the firms' activities with the shifting societal and regulatory expectations, which gained more and more importance every day worldwide. The decision of publishing such reports is voluntary in most jurisdictions, except in South Africa, where listed companies on the Johannesburg Stock Exchange are mandated with this

respect. However, the adoption of integrated reporting can benefit most companies, according to some authors, while enhancing their corporate reputation through superior accountability and transparency (Oliviera, Rodrigues and Craig, 2019; Suttipun, 2017). Different perceptions state that by comparison, business organisations that conduct in substantial negative external impact tend to offer more detailed integrated reports than those with insignificant environmental consequences, in order to shed legitimacy on their business (Buitendag, Fortuin and De Laan, 2017). In this sens, the information disclosure could therefore be used in an attempt to 'repair' poor legitimacy (Suchman, 1995) and could be symbolic rather than substantive (Malola and Maroun, 2019). In opposition, Lopes and Coehlo (2018) suggested that there is a greater probability for business organizations with a high level of integrated reporting quality to be large, profitable and less leveraged.

Integrated reports have been described by the International Integrated Reporting Council (IIRC) as precise "communications about how an organization's strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value over the short, medium and long term" (IIRC, 2013, p. 8). While taking into account this aspects, integrated reports provides both financial and non-financial information for all stakeholders involved. IIRC associated integrated reporting with the term "integrated thinking" while describing it as "the active consideration by an organization of the relationships between its various operating and functional units and the capitals that the organization uses or affects" (IIRC, 2013, p. 3). This integrated thinking can foster numerous integrated decision-making and actions that focuses on the creation of value over the short, medium and long term of a company. This holistic approach emphasizes the value creation for companies, therefore being many times associated with performance over time. However, there are also many conflicting evidences in the specialty literature that address issues such as different prospects (Adhariani and de Viliers, 2018), challenges (De Villiers, Rinaldi and Unerman, 2014; McNally, Cerbone and Maroun, 2017), and implications (Dumay et al., 2017; Iredele, 2019) of the implementation and adoption of integrated reporting.

Therefore, of particular significance for this study are recent articles, which study the concept of integrated reporting, while linking it with the subject of performance, detailed in the next section.

The present paper is structured as follows. Theoretical framework addresses the principal concept and the specialty literature regarding integrated reporting in terms of its connectivity with the performance theme. Next, the paper detailed the collected data and methodology used (Methodology). The fourth part (Results) offers details about the main results of the study. Lastly, the study presents a discussion of the findings and the concluding observations, while pointing out also the research limits and the associated potentially forthcoming research directions.

2. Theoretical framework

Integrated reporting is acquiring more and more interest from the research community, corporate and investor communities as well as practitioners and policy makers. Different studies with respect to the connection between integrated reporting and either financial, environmental, operational or market performance reflect also many disagreeing evidences. Buallay, Hawaj and Hamdan studied in 2020 the relationship between the disclosure of integrated reporting and Islamic and conventional banks performance (financial, operational and market) and provides perspective while demonstrating that IR positively affects market performance, while negatively affecting operational and financial performance in the case of conventional banks. Their descriptive analysis highlights that 73% of the banks represent integrated reporting adopters. The authors also highlighted that integrated reporting

negatively influences market performance of Islamic banks, with no obvious effect on neither financial nor operational performance. In their analysed banking sector, namely the Gulf Cooperative Council (GCC), the bank performance would not improve where integrated reports are mandated, this statement being stronger when regarding Islamic bank than with respect to conventional banks in the region (Buallay, Hawaj and Hamdan, 2020). Omran, Zaid and Dwekat (2021) investigate the link between integrated reporting and corporate environmental performance. A sample of 110 firms where integrated reporting was first mandated, listed on the Johannesburg Stock exchange for the years 2014-2018 made the object of their study. Their empirical results are plentiful and in compliance with our predictions regarding the positive association between integrated reporting and corporate environmental performance. Furthermore, there is evidence suggesting that compliance with the current established framework permits IR to act as an instigating instrument in the process of corporate environmental change. Their study thus concludes that high-quality integrated reporting is quite probably part of the behaviour of global environmentally responsible businesses. The authors provide evidence that supports the position of IR in aligning the firm's central values with their corporate reporting with respect to the environment. Their results indicate also that qualitative integrated reporting practices are unlikely to have symbolic value but rather, part of general environmentally responsible corporate strategies, additional supporting the idea that high quality IR can be effective in terms of the transformation function. Matemane and Wentzel (2019) conducted one of the few sector-specific studies and investigate the presence or absence of a correlation between IR and performance, while examining the relationship between IR quality and bank performance, for the case of South African Banks, in the period 2010-2014, focusing on secondary data, comparing them to the pre-IR implementation period. No statistically significant relationship was proved to exist between IR quality and bank performance according to Tobin's Q (TQ) ROA, ROE.

A similar topic, corporate sustainability disclosure was also examined with respect to its impact on the performance of companies (growth in bank deposits), by analysing public conventional and Islamic banks from the United Arab Emirates (UAE) (Nobanee and Ellili, 2016). With respect to the integrated reporting quality (IRQ), Barth et al (2017) reported a significant, positive relationship between IRQ and organizational value, largely attributed to liquidity and expected future cash flows rather than on cost capital, by using reporting measures based on twelve components, according to the IIRC framework principles and content elements.

Thus, the financial performance and integrated reporting quality (IRQ) have also a contrasting relationship in many researched articles. Some researchers find positive associations between IRQ and organizational value (Lee and Yeo, 2016), while others emphasized the absence of significant evidence, linking IRQ with organizational value (Buitendag, Fortuin and De Laan, 2017; Horn, De Klerk and De Villiers, 2018; Marcia, Maroun and Callaghan, 2015) and with profitability (Buitendag, Fortuin and De Laan, 2017). The conclusion of this section is in agreement with De Viliers, Hsiao and Maroun (2017), in that shareholders are encouraged to implement a long-term investment focus, sustaining that they should pressurize organizations to be more transparent, to prove more decision-usefulness and accountability relating to the six capitals instead of simply concentrating on financial capital.

3. Methodology

Web of Science Core Collection, one of the most popular database, is an online bibliographic and bibliometric database, comprising mainly scientific journals, conferences and books of high quality. Consequently, based on a sample of 262 references selected

from the Web of Science (WoS) Core Collection database, including mostly articles, proceedings papers and book chapters, from 1999 to 2021, a bibliometric analysis is conducted, while associating the "integrated reporting" concept with the "performance" concept. Data on the most common keywords, journals, authors and citations are first collected, than verified, validated and interpreted, while applying bibliometric measures by means of science mapping through the VOSviewer software. VOSviewer is a software instrument for creating and picturing bibliometric networks. These networks can for example consist of journals, researchers, or individual scientific publications and they can be ultimately shaped grounded on citation, bibliographic coupling, co-citation, or co-authorship relations.

Regarding the main focus of this paper, the sample was obtained using the topic based search of two keywords, mentioned above as concepts, namely: "integrated reporting" and "performance".

This paper observed the keywords that arise in the analyzed documents (co-occurrence of keywords), the co-citation (cited authors) and co-authorship (regarding both countries and organizations/institutions) within the sample of 262 documents. The results are presented in the next section.

4. Results and interpretation

4.1. Keywords Co-occurrence Analysis

First, regarding the keyword analysis through this type of method, the most persistent keywords were highlighted in Figure 1 (processed using VOSviewer), by means of analysing a minimum of five simultaneously-occurring keywords in each of the analysed articles (minimum number of occurrences of a keyword=5). All types of keywords are taken into account for this purpose, in order to highlight the most relevant ones in the field of integrated reporting and the overall general performance that can be generated. Figure 1 presents the most relevant keywords and the links between them in compliance with the following rule: the larger the keyword and the link, the larger the weight. The common clusters of keywords and the related keywords are indicated with the same colour. There are five clusters, as follows. The first cluster (red) is build out of 39 items, led by the keyword with the second highest occurrences, which represents one of the focus of the papers theme, namely "performance", along with other important keywords, such as "disclosure", "information" and "governance. The second cluster, represented by the green colour, is build out of 30 items, led by the "integrated reporting" keyword, highlighting both the highest number of links (119) and the highest total link strength of 161, while representing also the research topic. The following most significant keywords for the second cluster are: "management", "insights" and "integrated thinking". The third cluster (blue) comprises 23 items, among which the most frequent keywords are "sustainability", "corporate social responsibility", "sustainability reporting", "financial performance" and "impact". The yellow colour represents the forth cluster, including 17 items, among which the most relevant ones are the followings: "determinants", "assurance", "content analysis" and "market". Finally, the fifth cluster (mauve), containing 12 items is led by the "disclosures" keyword, followed by "South Africa" and "strategy".

The most common keyword refers to "integrated reporting", followed in this rank by "performance" and "sustainability", while the least common keyword refers to "diversity", followed by "disclosure quality".

The short distance between both the second (green) and the third cluster (blue) and the first (red) and the third cluster (blue), highlights the strong connection between integrated reporting and sustainability as well as the one between integrated reporting and performance.
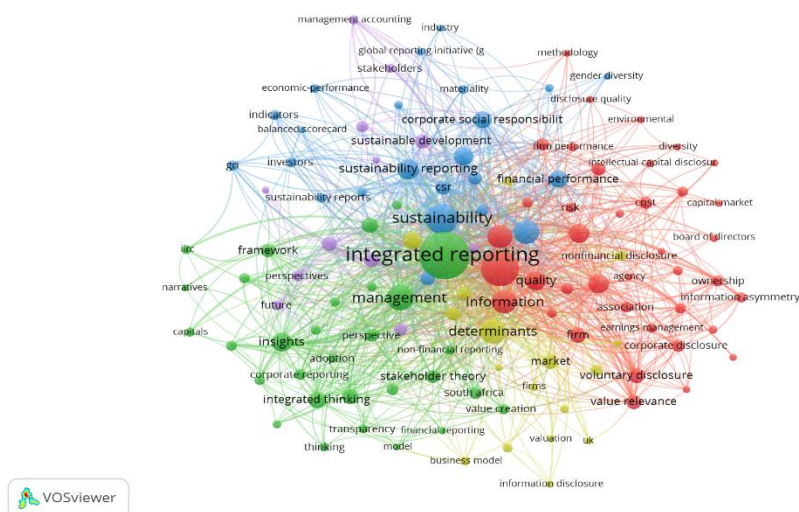
Figure 1: Co-occurrence network of all keywords within integrated reporting publications
Source: original

4.2. Cited Authors Co-citation Analysis

The network of the main authors who studied this topic was analysed in this section, at the same time highlighting the researchers who proved to be more preoccupied by the matter. Although we analysed an emerging topic, the threshold of the minimum number of citations of an author was set on 20 and out of 6749 authors, 98 met this threshold. Thus, Figure 2 (processed using VOSviewer) highlights the 4 resulting clusters. The first cluster, represented by the red colour, comprises 31 items, De Villiers being the most cited author, with 204 citations and 190 total link strength, followed by Adams, with 167 citations, IIRC (144 citations) and Dumay (143 citations). The second cluster, represented by the green colour, includes 27 authors and is led by Frias-Aceituno and International Integrated Reporting Council (IIRC), both with 121 citations, followed by Garcia-Sanches with 75 citations. Regarding the citation perspective, the blue cluster (third cluster) can be considered the main cluster for this research part. This cluster contains 21 items and is represented by Eccles, the author with the highest number of citations, namely 217. The last cluster (yellow) includes 19 authors and is led by Gray (99 citations), followed by Deegan (97 citations) and Guthrie (87 citations).

Finally, it can be mentioned that there are numerous authors who address the issues of integrated reporting and performance.

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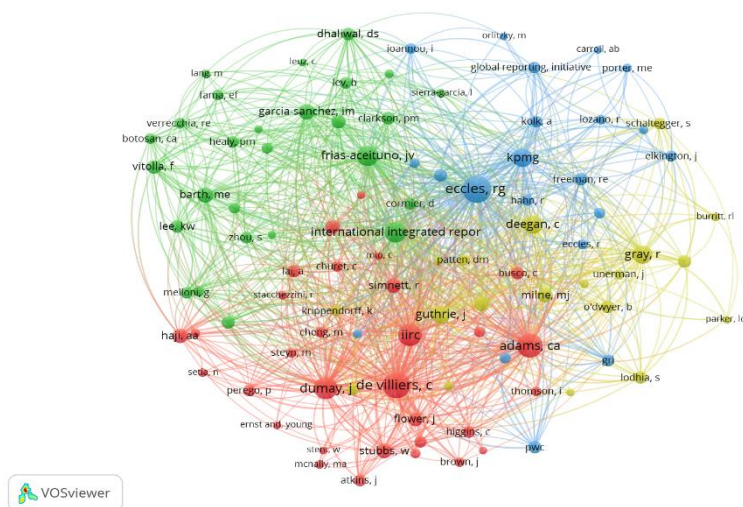
Figure 2: Co-citation of authors researching the integrated reporting and performance topics
Source: original

4.3. Countries and Organizations Co-Authorship Analysis

This type of method permits analysing the relatedness of items based on the number of co-authored documents. Therefore, the nodes represents in this case either the involved countries or the contributing organizations/institutions, while the thickness and the distance between them reflects the degree of their collaboration/cooperation/association.

This section comprises two co-authorship analyses, the first focusing on the countries and the second regarding the organizations.

Regarding the countries co-authorship analysis, the threshold of the minimum number of documents of a country, was set to 5, and out of the 57 countries, only 17 met this threshold. Figure 3 (processed using VOSviewer) presents the nodes and the links between them, while highlighting the presence of 5 clusters, represented by different colours. The first cluster (red) includes 5 countries: Germany (with 18 documents), followed by Spain with 13 documents, France (10 documents), and Switzerland and the Netherlands, both with only 6 documents. The second cluster (green) contains only 4 countries, which are led by the USA with 24 documents, followed by Australia with 19 documents, Turkey (8 documents) and Russia (6 documents). The next cluster is the blue one, containing only 2 countries, however representing also the main cluster for this research part, because of the presence of the country with the highest number of documents- Italy (49 documents). The second country in this cluster is Romania, positioning itself on the third position in this ranking, with 23 documents. The yellow cluster (cluster 4) contains also 2 countries: England (with 23 documents) and Scotland (with 5 documents). South Africa with 23 documents and New Zeeland find themselves surprisingly in the fifth cluster (mauve), although South Africa is a country where integrated reporting is actually mandatory for the Johannesburg Stock Exchange listed companies.

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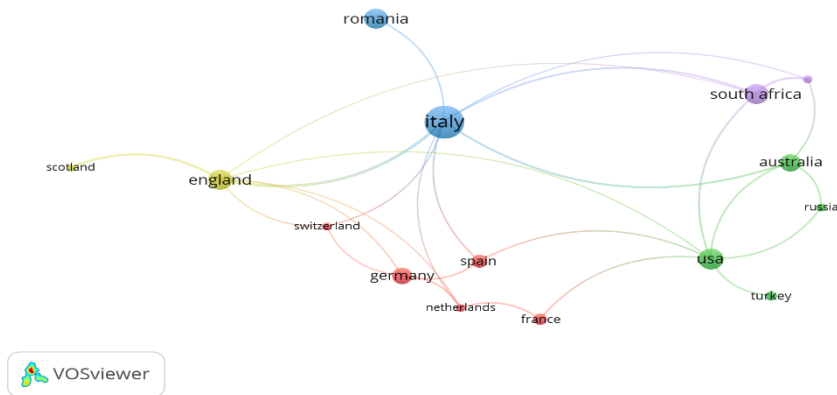
Figure 3: Countries Co-authorship
Source: original

The last study of this paper consists of the analysis of organizations/institutions co-authorship, by setting the threshold to a minimum number of 4 documents of an organization. The results are presented in the following Figure (Figure 4- processed using VOSviewer). Remarkably, out of 335 organizations, only 10 met this threshold, indicating the particularity and novelty of the research topic, while highlighting only the nodes for the significant ones with this respect. The study resulted in 9 clusters with 10 items (universities). With respect to the analysed topics, the Bucharest University of Economics Studies, with 14 documents, represents unexpectedly the most important university, outranking the universities from Africa from this perspective. Next in this ranking, follows University of Pretoria, University of Salamanca and University Witwatersrand of Johannesburg (each with 6 documents), the University of Auckland, Bocconi University, Macquarie University (Australia) and University of Milano-Bicocca (each with 5 documents). At the bottom of this ranking are RMIT University (China) and University of Stellenbosch (South- Africa), each with 4 documents. The missing links between the represented nodes could also be related to the long geographical distance between the universities and to the university field of study.
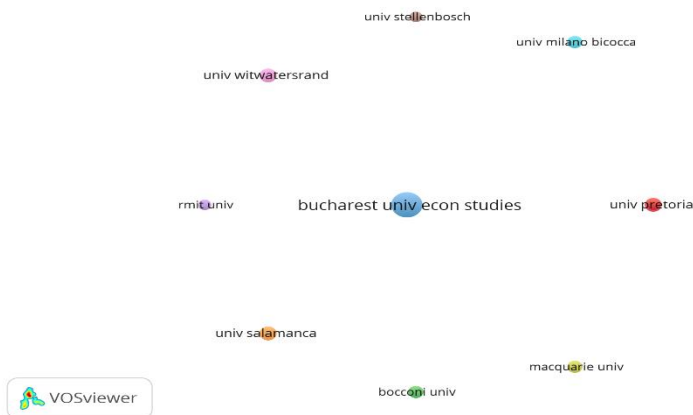
Figure 4: Organizations Co-authorship
Source: original

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5. Discussion and Conclusion

Even though a similar study regarding the bibliographic analysis of integrated reporting has been conducted by Di Vaio et al. in 2020, the connection with the performance topic has not been addressed yet. Thus, through the executed analysis, it can be concluded first that a significant number of keywords relevant for the current analysed topics was observed. A visualisation of the most frequent and significant keywords is presented in Figure 1, while the most significant are the following ones: "integrated reporting", "performance" and "sustainability". Subsequent to this analysis, it can be stated that integrated reporting is strongly connected with "sustainability" and "sustainable development", "performance", "quality", "information", "management" and many other connected subjects. Next, through co-citation analysis, the most important authors in the research area were highlighted (Figure 2). Last, but not least, the co-authorship analyses emphasised the countries and organizations/institutions (universities) with the highest number of documents regarding this research area.

Studies conducted in countries with mandatory IR reveal that disclosure through this type of reporting does not only increase firm effectiveness and efficiency but it also nurtures the achievements of a business organization's objectives and mission. Thus, integrated reporting can be used both as an "influential" tool for corporate disclosure and as an important component in an integrated marketing communications plan. This is the reason why the analysis of the links between the two investigated topics is relevant.

After a decade from the introduction of IR as defined by the IIRC, South Africa constitutes a proper research field in order to explore the level to which this combined form of reporting (financial and non-financial reporting) thrives in establishing relationships between IRQ, environmental/sustainability performance and financial performance, this aspect being also highlighted through this papers' keyword analysis.

As a general conclusion, despite the fact that the economic consequences of IR in South Africa have been a subject of focus for several authors, taking into consideration the country's front-runner status regarding IR, South Africa is unexpectedly not the country where the maximum record of authors approaching this research theme was found. Instead, Italy comprises the largest number of documents, while the Bucharest University of Economic Studies (from Romania), with 14 documents is at the top of the rank with respect to institutions.

Content analysis of integrated reports continues to require improvement even after 10 years of experimenting with the IIRC framework. It should go further than simply considering the length of disclosures and compliance with core content elements and aim for closer examinations of reporting quality and applying the IIRC's principles (comprising strategic focus, materiality and conciseness).

The novelty of the researched topic and the relatively few integrated reporting adopters can be regarded as limitations of this paper, resulting in only 262 references, a quite small database when referring to bibliometric analysis.

Future research should focus on studying the interaction between IR and integrated thinking and the connection between the two concepts or the link between IR and its principles, founded by IIRC.

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SOCIAL ORGANIZATIONAL RESPONSIBILITY MANAGEMENT MODELS: WHAT LESSONS FOR HUMAN RESOURCES MANAGEMENT?

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Abstract: *This communication represents a work in progress by the first author, who is enrolled in a research program of master in organizations management. The notion of social corporate responsibility (SCR) is increasingly present in management literature. It is linked to profitability, investor attraction and brand image. More recent research has begun to investigate the link that can be made between SCR and human resources management (HRM). In the vein of this field of research, our paper proposes to take a closer look at how certain SCR models, implemented consciously or not by certain companies, could impact the employee perception of employment relationship quality. The concept of "quality of life at work" and social identity theory will be used to measure the employment relationship quality. To carry out the research, a qualitative methodological approach, based on comparative case study, will be used. A sample of about 20 participants (manager and employees) will be targeted. The results of the research could provide a better understanding of how the decisions taken in relation to SCR could be combined to form original models of social responsibility management. Moreover, the study of the links that can be established between SCR models and the perception of the employment relationship quality could allow companies to better manage their human resources and improve retention and attraction of the employees.*

Keywords: *social corporate responsibility (SCR), social identity theory, quality of life at work, employment relationship quality*

JEL Classification: *M12 Personnel Management*

1. Introduction

We are currently experiencing great upheavals in the work environement all over the world. Indeed, the COVID-19 pandemic will have forced organizations to adapt to a whole new reality. People-to-people contact should be minimized and strict sanitary measures applied to allow organizations to continue operating. All of these measures are the result of new laws and procedures related to the pandemic and they all aim to protect employees. (CNESST, 2020).

Despite this major element that businesses had to face, the labor shortage in Canada, and the Quebec region Abitibi-Témiscamingue would be particularly affected. (Desjardins, 2019). According to Statistics Canada, the region's unemployment rate stood at 4.5% in August 2020, the lowest unemployment rate in the country. This labor shortage affects businesses, employees and citizen services. For organizations, the effects of the labor shortage can translate into lower productivity, reduced hours of operation, an inability to innovate and, by the same token, lower revenues and reduced overall performance. Also, a shortage of human resources forces employers to make maximum use of the resources in place. This excessive use can lead to more burnout and repeated absence for employees.

Corporate social responsibility (CSR) could play a key role in responding to these upheavals in the world of work. Corporate social responsibility is a concept little known to employees and even employers (Gilbert and Greffet, 2019). The difficulty of agreeing on a common

definition of the concept gives an idea of the extent of the differences surrounding it (Baba, 2017, Pereira, 2014). One of the definitions most often cited in the literature is that of Carroll (1979) who argues that CSR encompasses a company's economic, legal, ethical and voluntary expectations of organizations at a given point in time. CSR could then be seen as, for example, the commitment of the organization that goes beyond simply satisfying the interests of shareholders, to take care of several of its stakeholders.

Indeed, CSR could be seen as a lever for attracting the workforce through the positive image it conveys. On the other hand, could the social responsibility of organizations play a role in employee retention? According to Schill, Letheilleux, Godefroit-Winkel and Combes-Joret (2018), an important stream of research in human resources management has been built on the perception of employees regarding the social responsibility of their organization. The various issues experienced in the workplace could increase the interests of organizations in ensuring a good employment relationship.

We would like to highlight the links that may exist between CSR and the quality of the employment relationship. Could the CSR management models applied in organizations have an uncommon effect on the perception of the employment relationship? Could the temporality, the importance given to measures and the social pressure influence the perception of the employment relationship of employees? This particular concept is little studied in the literature and could provide indications as to the possibility of using CSR in a context of perceived quality of employment relationship. From this point of view, can we assume that the quality of the employment relationship could be considered as an element of retention and loyalty of the workforce. This research proposes to link the implementation of corporate social responsibility with the employment relationship of employees.

The employment relationship is defined as the bond that an employee, an individual, weaves with his organization, its representatives, and its members (Coyle-Shapiro et al., 2005). To better understand the employment relationship, we have chosen to study in more depth the perceptions of employees regarding their organizational identification and the quality of life at work offered in their environment.

Despite efforts to manage CSR, it may be perceived differently by employees. Will the employees we interview have a favorable perception of their quality of work life when CSR measures are applied in the workplace? We therefore wish to answer the following research question: What would be the influence of corporate social responsibility management models on employees' perception of the quality of their employment relationship?

The answer to our research question could show both scientific and social relevance of our research. The scientific relevance is to deepen the study of the links that may exist between CSR models and social identity as well as the quality of life at work. At the social level, research enables companies to become aware of the fact that commitments to social responsibility could allow them to position themselves as the employer of choice and for employees, this means better employment relations.

We will first present the conceptual framework and a research model. Subsequently, we will establish an operating framework.

2. Proposal for a research model

To answer the research question, we will first present the literature review on the social responsibility of organizations as well as that of the theory of social identity and quality of life at work. These two elements will allow us to link CSR with the perception of the employment relationship quality.

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2.1 Corporate social responsibility

The proliferation of CSR measures today allows us to question the very definition of corporate social responsibility. What exactly is it? Several authors in the scientific literature offer us definitions of the concept (for example, Carroll, 1979, Turcotte, 2018).

As part of this research, we decided to retain three established models of CSR and a proposed research model that we will call the integrative model. This will allow us to define our model of corporate social responsibility.

2.1.1 The Carroll model

In the scientific community, the measurement of CSR has mainly developed through theories of the societal performance of the company (PSE) (Gond and Igalens, 2018). To define the performance models of social responsibility, we must first understand the three-dimensional conceptual model of Carroll (1979) which is widely disseminated in the scientific literature. Indeed, the author suggests that it is the following three distinct aspects that must be defined and interrelated, namely: a basic definition of social responsibility, an enumeration of the issues for which social responsibility exists and finally, a specification of social responsibility. response philosophy.

The model also shows four levels of responsibility that society expects from companies. Each responsibility, individually, is just one part of CSR. The four levels are part of the very definition of CSR, namely, the economic, legal, ethical, and voluntary level (Carroll, 1979, p.500).

2.1.2 The Pasquero model

Pasquero (2018), proposes to develop an open model that could evolve over time, while being concerned with the history of the concept of corporate social responsibility. All the dimensions currently covered in the different concepts or definitions of CSR are present in this model. Also, it is important to specify that for Turcotte, the model must be connective, that all the elements included in the model must be minimally satisfied.

Briefly, the Pasquero (2018) model includes eight components of CSR: efficient management (ensuring the sustainability of the organization and the competence of managers); ethical rectitude (making ethics the basis of governance), philanthropy (donations, scholarships, etc.), social receptivity (organizational innovation and adaptation to changes), caring (responsible human resources management), nuisances limitation (material and psychological), accountability (transparent company, triple balance sheet) and citizen participation (involving surrounding communities in decision-making within the company). Moreover, this model will be used a lot in the present research.

2.1.3 The ISO 26000 Standard

The model of the ISO 26000 standard seeks to establish two fundamental practices of social responsibility. First, the organization must identify its social responsibility and the stakeholders in its environment. Subsequently, the standard proposes to be based on seven central questions of CSR, namely, human rights, relations and working conditions, the environment, fair practices, questions relating to consumers and finally the community and local development.

Therefore, the ISO 26000 standard sheds interesting and relatively current light on corporate social responsibility. The integrating model that we present in the Research model section will be an amalgamation of the various models presented earlier and the characteristics that we considered important. To better serve the objectives of our research, we plan to take into account certain elements that we retain from the literature review on the subject of corporate social responsibility and transpose them into an original model of CSR management.

2.1.4 The integrative research model

Following the literature review, we want to design an integrative CSR management model. The model that we will present as the integrating model is the one that we will have to define. Indeed, within our research, we want to compare models of corporate social responsibility management that we relate to the employment relationship. The companies met will therefore have to have a defined CSR model to be able to make a comparison. It is possible that the companies that will be chosen to participate in our research have CSR measures within the organization, but there is no model to support the theory. We want to go back and forth between theory and practice to define a model if it does not exist. We have established characteristics specific to the in-house model which will be grouped together with the literature and the known models described above. The following characteristics will be considered when designing the CSR management model:

a. The content of CSR measures
b. The level of importance of the components of CSR
c. Temporality
d. Social pressure

The factors that influence the determination of the integrating model will be established from the social responsibility management models proposed by Carroll, Pasquero and the ISO 26000 Standard. The integrating model is shown schematically in Figure 1. We will also consider the content of the CSR measures, the level of importance of the CSR components for employees, the timing of the application of the measures as well as the social pressure that can be linked to the CSR components.

Carroll Model	Pasquero Model	ISO 26000 standards
- Economic	- Efficient management	- Identify his social responsibility and the stakeholders in its environment
- Legal	- Philanthropy	- Human rights
- Ethic	- Request	- Relations and working conditions
- Volunteer	- Limitation of nuisances	- The environment
	- Social receptivity	- Loyalty of practices
	- Ethical correctness	- Consumers
	- Accountability	- Community and local development
	- Citizen participation	

Integrator model

Compose the integrator model including the following elements:
- Identify the elements of the models already known
- The level of importance of the CSR components
- Temporality
- Social pressure

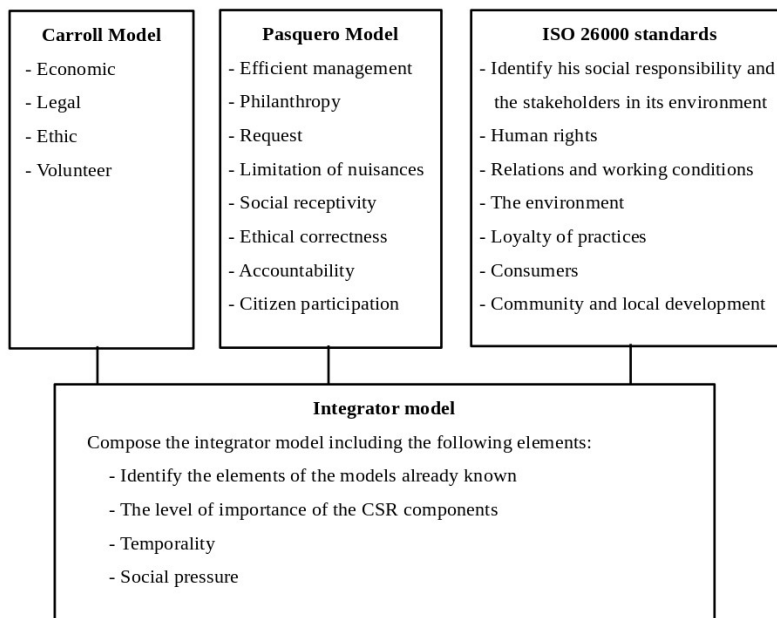Figure 1: The integrative research model

We can see that within the integrative model, the aspects, level of importance of the CSR components, the temporality as well as the social pressure have been inscribed in blue. This change in color in the figure serves to identify our contribution to the design of the integrating model. Indeed, it is these distinctive aspects that will be used to design the

models of corporate responsibility management that we will approach in the context of our study.

This is how, based on the documentation available in the company and following interviews with executives and employees, we will be able to define a model for managing corporate social responsibility. Indeed, we will be able to establish the CSR measures identified in the company and assess the level of importance that employees attribute to these measures. Also, we will want to know when the measures are put in place or are in effect. Do the measures come from social pressure or from the initiative of employers?

Also, as part of the integrative model, the different elements of CSR models in the literature have been included.

As part of our research, we will therefore work with the elements identified as being the elements retained to build the CSR management models.

2.2 Perception of the employment relationship quality

The second part of the research is based on the perception of the quality of the employment relationship. The models presented by Bordu et al. (2016) on the quality of life at work as well as Ashfort and Mael's (1989) categorization of social identity will help us to define this perception of the quality of the employment relationship. Figure 2 represents the diagram of our conception of the employment relationship.
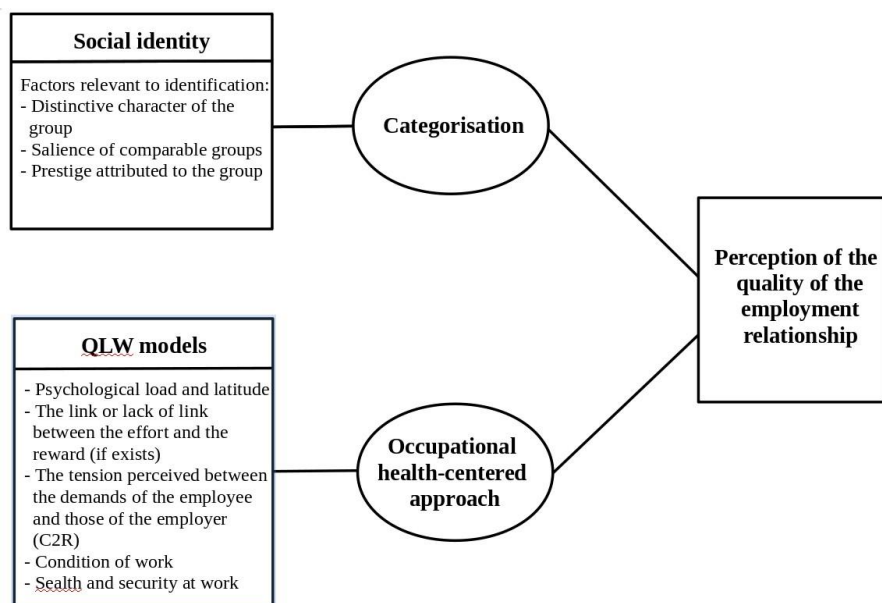
Figure 2: Perception of the quality of the employment relationship based on social identity and the quality of life at work.

Once again, in the diagram of the perception of the quality of the employment relationship, we can notice that different elements of the literature on the quality of life at work and social identity have been inscribed in orange. This particularity aims to demonstrate the aspects that we will retain more during our research, always with the aim of marking out our field of research.

We have chosen to retain the various elements since we believe that they can be linked to the various CSR management models that we can study in companies. Indeed, it will be

interesting to see or not whether the CSR measures applied make employees feel as belonging to a distinctive group and whether they associate a certain prestige with this reference group. On the other hand, can adequate human resources management measures, such as a link between effort and reward or even working conditions, contribute to better implementation of CSR? Or is it the CSR management model that allows for better working conditions and a link between effort and reward?

Schill et al. (2018) argue that "according to the theory of psychological distance, corporate social responsibility is spatially and temporally close to the employee. Indeed, through the actions, reports and relations developed with stakeholders, the concept of CSR refers to a concrete concept and pertaining to the daily life of the employee"(2018, paragraph 5). CSR measures would therefore be more easily perceived by employees than other more abstract actions. It will be interesting to validate or not this idea. Does social responsibility allow the worker to develop a stronger organizational identification? Could CSR practices be seen as a lever for the perception of the quality of life at work?

We already know that a relationship seems to exist between an individual's social identity and CSR. Indeed, based on the assumption that an individual wishes to share the same values as the company for which he works and that a link can improve self-esteem, we could assume that social responsibility measures could serve for a better organizational identity.

When it comes to the quality of life at work, the links that unite it with CSR seem to emerge naturally. It will be very relevant to confirm or deny this idea. Will the employees we interview have a favorable perception of their quality of work life when CSR measures are applied in the workplace?

We have therefore built a research model on which we wish to base our research. The next part of this work will serve to demonstrate the operating framework in which we wish to propose our study.

3. Operating framework

We will carry out a comparative case study between two distinct organizations to determine the influence of social responsibility management models on the perception of the employment relationship quality that we have chosen to determine as the organizational identification and the quality of life at work. We may believe that the companies participating in our research will not have a clearly defined social responsibility management model. On the other hand, we will identify their model based on the models described in the literature. We can use other aspects that characterize CSR management models such as temporality, importance, and social pressure to define the models.

To understand the influence of the CSR management model, we therefore plan to focus our study on two companies with different social responsibility management models, placed in Quebec Region of Abitibi-Témiscamingue. In this way, we will be able to determine, for these specific cases, the influence of the CSR models on employees' perception of social identity and quality of life at work. Do the models supported by companies influence employees' perception of their organization? And how does this perception intervene in the employment relationship?

First, the operating framework and methodology will be presented to determine our methodological approach. We will also discuss the choice of a comparative case study to carry out our research project including the sampling strategy, the data collection method as well as the data analysis method that will be favored. Finally, the criteria of scientificity and ethical considerations will be discussed.

3.1 Methodological approach

As we wish to link the management of corporate social responsibility with the management of the employment relationship, we will favor qualitative research to clearly identify the

feelings of workers. Watson and Frost (2018, 2011) claim that qualitative research generates information that is very detailed, to describe a specific situation. Also, there is still no validated CSR measurement scale, which may explain our choice to opt for qualitative research.

The determined research approach is the case study. Fortin (2010) recognizes the methodological contribution of the case study in the in-depth examination of a phenomenon. The case study is an empirical research approach that consists of investigating a phenomenon, an event, a group, or a set of individuals, selected in a non-random way, in order to realize a precise description and an interpretation that goes beyond its terminals (Roy, 2009, p. 207). Since the aim of the study is to better understanding the influence of the CSR management model on the perception of the employment relationship quality, the comparative case study should be retained. In fact, to identify elements related to the perception of workers, a comparative case study makes it possible to compare two different CSR management models and to assess the level of perception of the quality of the employment relationship referring to it. The case study is already widely recognized by the scientific community for its contribution to the understanding of factors that are difficult to measure (Roy, 2009). As the elements of our research are mainly based on perceptions evoked by employees, the case study seems ideal to us for analyzing factors that are difficult to measure.

3.2 Method of data collection

To be able to compare models of corporate social responsibility management, two organizations in Abitibi-Témiscamingue that have implemented socially responsible measures will be targeted. A first sample made up of management staff in each of the companies will help define the CSR management model favored by the organization. Within each of the organizations, these meetings will make it possible to build the integrative model of CSR management in place. We wish to meet at least one executive person per organization. Rational sampling is defined as the choice of subject that represents typical characteristics. (Fortin, 2010). Since we want to obtain management information, we necessarily must interview senior staff.

A second sampling targeting employees will be carried out. A stratified sampling method could ensure that we have a representative sample of our study population (Gavard-Perret et al., 2012, p.146). Since we want to have a bird's eye view of the organization, we will try to get respondents from various departments. We will also use as a criterion the distribution of the population, the gender of the employee, his age, and his seniority within the organization. We will consult with management to have a comprehensive portrait of the organization's employees and a list of them. Once the criteria have been selected, we will proceed by simple random sampling.

In the context of this study, we will use two types of data. The first consists of consulting the documentation that can help us identify the integrative model of CSR management in the organization. This can be internal documentation such as human resource management policies or social responsibility if they exist. The second type of data will be interview transcripts. Individual semi-structured interviews will be conducted by the researcher. We plan to do a minimum of 9 interviews per organization regarding employees, for a total of 18 interviews. We will be using the saturation theory which suggests that we will stop the interviews when the interviews bring nothing new as information, when the collected data is saturated. (Flick, 2009, p.138).

3.3 Data collection tools

In the context of this study, we will use two types of data. The first consists of consulting the documentation that can help us identify the integrative model of CSR management in the organization. This can be internal documentation such as human resource management policies or social responsibility if they exist. The second type of data will be interview

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Semi-structured interviews will be carried out directly at the employee's workplace if the situation allows. Indeed, during the interviews, if the standards of physical distancing are still in place, interviews by Zoom may be offered. Interviews will last approximately one hour per participant. Semi-structured interviews should be built around themes and use open-ended questions to encourage the respondent to engage. (Flick, 2009, p.156).

During the interviews, the order of the themes and questions discussed must remain flexible. The researcher must rely on the respondent's natural flow of ideas to evoke one theme or another. The formalization of the interview guide in the form of a topic to be addressed promotes a comparative analysis that can be carried out when the interviews are completed (Gavard-Perret, 2012).

3.4 Data analysis method

Following each meeting, we will produce the verbatim, the coding and carry out a preliminary analysis. In the content analysis, we will re-order by topic to facilitate the comparison of groups. (Gavart-Perret et al. 2012, p.282). Documentation should be indexed subsequently to facilitate the search for pages or themes, for example.

The last step of our analysis should consist in comparing the research results between the two organizations we met. These comparisons will allow us to write research results based on our study question.

3.5 Scientific criteria and ethical considerations

The validation of qualitative methods refers to the capacity to produce results having a value insofar as they contribute in a significant way to better understand a reality, a phenomenon studied. (Mucchielli 1996, p.265). The work of Lincoln and Guba (1985) proposes four criteria considered to be the reference in scientific evaluation of qualitative research. Credibility, portability, transparency, and internal consistency will be addressed as part of our study.

Regarding the ethical consideration, under the ethics and research policy (2012) of Université du Quebec en Abitibi-Témiscamingue, we must obtain the consent of the participants in our research project. This consent must be informed, free and continuous. That is, participation in the study must be voluntary and participants have the right to withdraw at any time without any justification (Bouchard and Cyr, 2011). A consent form will be presented to each study participant before each of our interviews. Also, to avoid an appearance of conflict of interest, the researcher will not be able to interview people he knows (Bouchard and Cyr, 2011).

Also, to protect the anonymity of study participants, a fictitious number will be assigned to each. The recordings of the interviews will be transcribed in complete confidentiality. Also, written material derived from participant data will be stored on a password protected computer for a period of five years. At the end of this period, everything will be destroyed. Under no circumstances will information on research participants be transmitted to any person or institution other than the researcher and his research director.

As the likelihood and magnitude of possible harms arising from participation in research are not greater than those of harms inherent in aspects of the participant's daily life associated with the research project, this research is considered below the threshold of minimal risk (Interagency Research Ethics Advisory Group, 2010, p.24).

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LOCAL GOVERNMENT: BUDGET MANAGEMENT PERFORMANCE. CASE STUDY: REPUBLIC OF MOLDOVA

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Abstract: *The performance of public entities is a widely analyzed topic in the literature. Several researchers have attempted to identify the indicators that need to be taken into account in measuring local or central performance. No international consensus has been reached on the social and economic indicators that can be used to measure local government performance. However, each government is trying to establish its own performance indicators. In some states it is only recommendations, in others, performance indicators are included in the law, thus becoming mandatory for the execution. In literature, we will find several indicators to analyze the economic results of a State. In this research, we will analyze the economic performance of a post-Soviet State. The Republic of Moldova is a constantly evolving State that wants to join the large European family. In this context, analysis of the degree of performance at local level becomes indispensable. Because the management of the performance of public entities is a complex and multidimensional issue, in this research, we will focus on the budget execution indicator which we consider an important aspect of promoting local performance. We will analyze the local budget for the last five years through the financial resources planned and those carried out at the end of each year. In this way, we will be able to identify the degree of the economic performance of local public authorities in the Republic of Moldova. In this context, we will be able to draw conclusions and recommendations on the next steps by the Moldovan authorities to achieve a high level of economic performance.*

Keywords: *local budget, local performance, public administration, local budgeting.*

JEL Classification: *H21, H68, H72.*

1. Introduction

The budget is one of the most important financial instruments highlighting the revenue and expenditure planned or incurred at the State level. The complex evolution of the economy has led to the harmonization of the traditional conception of the budget.

At present, the public budget is not just a list of the government's likely revenue and expenditure, but a real financial plan at the economic level (Vacarel, 1992, p.338). The importance of the budget at local level is highlighted by the multitude of complex economic and financial relations that it reflects, but also by the particular role it plays in contemporary economic and social life.

The local budgets shall consist of the budgets of administrative-territorial units with legal quality, such as communes, cities, municipalities, counties or districts in the case of the Republic of Moldova. The function of the local budget is to guarantee the financing of actions, tasks and objectives of local interest. If own revenue is insufficient to cover domestic expenditure at local level, local budgets may benefit from some State budget balancing

resources in the form of amounts deducted from certain taxes or transfers in order to finance specific objectives. Similarly, local budgets can also benefit from sources of funding in the form of temporary loans from the State treasury (Danuletiu, 2013, p.55).

The concept of budgetary efficiency in the public sector is very often used by the competent ministry of the Republic of Moldova. Through this research, we aim to analyse the execution of local budgets for 2016 and 2020 and their impact on the performance of the territorial administrative unit. Scientific research will be based on a revision of literature in the field of economic management from the point of view of local performance. The qualitative research will be based on study of the data collected from the execution of the local budget for 4 years from Republic of Moldova. In the early stages we will figure out the share of the income of the local budget in the national budget revenues. Then we will identify the evolution of revenues from the budget of administrative-territorial units of Moldova in the 2016-2020 period. In the same way we will analyse the application of the local budget for 2017-2020 period. In this framework, we will study in comparison the expected and executed revenues of the local public administration. Of course, we will pay special attention at the local income classification for 2017-2020 years, not least the non-financial liabilities and assets executed.

2. Research methodology

In order to achieve the objectives proposed in this research, we will apply different research methods. The documentation method is one of the most important methods by which we will analyse the basic concepts of the local budget, its implementation and performance in the local economic management. We used this method to consult working documents, articles, publications and specific information databases.

The main research questions are about economic performance connection and local budget execution. Can local budget execution be considered as an indicator to be taken into account in measuring performance? What is the degree of implementation of the local budget in the Republic of Moldova from the perspective of economic management.

The scientific approach to research is based on the study of specialized literature. To support the theoretical research, we will analyse the patrimonial result of the local budgets in the Republic of Moldova for four consecutive years and highlight the aspects of budget implementation to demonstrate that execution is a performance indicator at the local level. The theoretical content discussed in relation to the proposed practical results will lead to a better understanding of the economic and financial situation of public system.

3. Literature Review

The authorities from the local public administration are trained to ensure social and economic well-being at the local level. The objectives achieved are very different and require a good organisation of the activity. The most important need for citizens is to benefit from quality services, and local public administrations must ensure a high level of professionalism, under conditions of efficiency and economic efficiency.

At international level, the democratic states have adopted a number of principles guaranteeing good administration: the principle of legality, non-discrimination and proportionality; the right to have their own business; the right to be heard in the event of an individual decision refers negatively to a person; the right to access any type of public document; the obligation to notify a decision to all interested persons, etc (Rainey, 2010, p.48).

Economic performance is the level at which industry achieves its objectives. It covers multidimensional aspects of profitability, innovation, quality and growth (Sava, 2013, p.328). The particularities of public institutions derive from the specific characteristics of their activity, their legal status and their mode of financing (Morariu & Suciu, 2004, p.26). Public

institutions are the institutionalized economic units whose main function is to redistribute the general income and income from the provision of services at local level.

Another idea on public administration performance has been outlined in terms of tax transparency. This implies budgetary discipline at the level of the local public administration (Escolano et al, 2012, p.9). This requires local authorities to disclose the composition of expenditure and thereby ensure a higher level of performance (Onofrei et al, 2020, p.9).

From a managerial point of view, the performance of public administration means efficiency, effectiveness, economy and ethics (Doherty & Horne, 2002, p.343). In this approach, we can talk about performance based on four pillars. Another concept points out that an entity's performance depends on employees and a manager who participates in training programs (Chiriac, 2014, p.78). As a complex concept, performance shows the position of an entity in a competitive environment. It can be measured using some economic and financial indicators (Hada, 2010, p.38). In the same sense, performance is the economic and financial security of any public authority.

The concept of performance can be relate with the concept of performance management that aims to improve performance through maximum efficiency and effectiveness. The results obtained are based not only on material resources but also on the human resources involved. The performance expresses synthetically quantitative and qualitative aspects of its activity, and its measure and analysis constitute an important dimension of management.

Local authorities represented by the local councils representing the local deliberative body, and the mayor as the local executive body, are structures that realize local autonomy, whose responsibilities are the preparation and approval of the draft annual budget, the establishment of local taxes and fees, as well as special taxes. The establishment of a level of performance in the public sector at local authority level is a systematic and continuous process of measuring and evaluating its products, services and practices, comparing them with the best products of other organisations in the same sector (Abaluta, 2004, p.110).

The calculation of the degree of performance in the public administration of the Republic of Moldova can be done by analysing the coercive performance that represents the degree to which the limited amount of a type of budgetary revenue X leads to the emergence or increase of an extra-budgetary revenue category (Stefanescu et al, 2014, p.236). Performance in local public administration is a subject widely analysed by several researchers in the field, but there has been no unanimous consensus. The evolution of the company's performance is the subject of extensive debate in the field of financial analysis. It can be said that the financial analysis proposes a partial diagnosis of performance and risk that seems limited (Barbuta-Misu, 2009, p.149).

Thus, to analyse the performance of public institutions, we must address all aspects of which it is composed. The importance of performance analysis at the local level needs to be analysed based on the main objectives for which it was designed.

The implementation of the budget relates to revenue collected and expenditure made through the local budget. Several budget operators participate in the implementation of a local budget, such as the central and territorial financial staff of the Ministry of Public Finance, as well as several ministries, as well as operational public institutions receiving transfers from the State budget (Danuletiu, 2013, p.67).

The responsibility for the implementation of the budget rests with the Government, as well as with the competent ministry, which should maintain the relationship between revenue and expenditure set out in the annual budget law. The implementation of the budget is divided into several phases. The first phase is the quarterly distribution of revenue, but also budgetary expenditure. This stage is subject to certain time limits strictly laid down by the law for revenue collection, as well as by the time limits and possibilities to ensure the sources of financing the budget deficit. The obligation to distribute revenue within local governments, but also the distribution by titles on the proposal of the main authorizing officers, is the responsibility of the Ministry of Public Finance (Danuletiu, 2013, p.68).

The next step in the implementation of the budget is the opening of budget appropriations to authorizing officers and the cash implementation of the budget. Referring to the Law on Public Finance, we identify different types of authorizing officers: principal, secondary, tertiary (Law 273/2006, art.21). Thus, the authorizing officer is the head of a public institution that can use budgetary appropriations by law.

The execution of revenue is the process of collecting revenue. The realization of revenue is an obligation for all the institutions that have the task of collecting it. Income collection shall be carried out in the income account which is opened at the State Treasury.

The implementation of the budget shall be carried out no later than December 31 of the current financial year; revenue not collected and expenditure incurred, settled and ordered, within the budgetary provisions and unpaid by December 31 at the latest, shall be collected or paid, as appropriate, on the budget account of the following financial year (Danuletiu, 2013, p.70).

4. Case study

4.1. Analysis of the local budget execution at the national level in the Republic of Moldova

The analysis of the local budget implementation shall begin with the identification of the proportionality of local budgetary revenue in the national public budget for a period of five years, from 2016 to 2020.
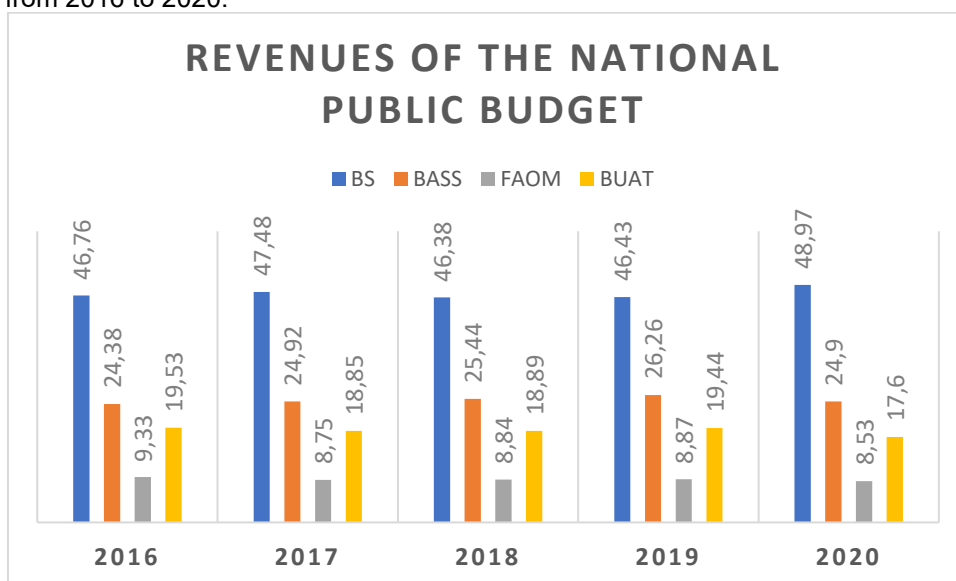
Figure 1: The share of the local budget income in the national budget revenues
Source: proceed data from https://date.gov.md/ckan/dataset/15071-raport-privind-executarea-bugetului-public-national

In the above figure, it is noted that from 2016 to 2020 the percentage of revenue from the budget of administrative-territorial units in the national public budget tends to decrease. Thus, while in 2016 it represented 19,53%, in 2017 we observe a considerable decrease of almost 1%. Similarly, 2018 recorded a slight increase in administrative-territorial unit account revenues, which represents 18.89%. The loss of a percentage recorded in 2017 is rewarded for the return to the same level in 2019, when the revenue balance of the territorial administrative unit represents 19.44%. The revenues of the administrative-territorial units

decreased considerably in 2020 when 17.6% were registered which represents a decrease from the previous year of 1.84%. This decrease could have been influenced by the economic recession caused by the Covid-19 pandemic.

The fact that the percentage of income in the budgets of the administrative-territorial units shows insignificant differences and, in some cases, decreases revenue, while the share of the state social insurance budget increases in the national public budget during this period, is not a positive thing. We cannot talk about progress at the local and national levels as long as local incomes increase very slowly and the local authorities do not have real autonomy and a considerable amount of income is shifted to social assistance for the population.

The following table shows the amount of revenue received from the budgets of the administrative-territorial units for the 2016-2020 period.

Table 1: The amount of revenue received from the budgets of the administrative-territorial units for the 2016-2020 period
-   Millions of MDL –

Year	2016	2017	2018	2019	2020
Incomes	12,053.0	13,461.5	14,683.6	16,724.4	15,140.5

Source: proceed data from https://date.gov.md/ckan/dataset/15071-raport-privind-executarea-bugetului-public-national

The table shows that in the years 2016-2020, the revenues of local budgets had insignificant increases. However, it is necessary to avoid that the largest increase took place in 2019, when it was registered with 2,000 million MDL more compared to 2018. Although the political situation of that time was disastrous, being modified three times the composition of the Government of the Republic of Moldova , the status economy has still reached a small but significant increase compared to the last three years. National GDP has also increased to 5% at the end of the year.

Local budgets experienced significant revenue reductions in 2020, when there was a decrease of 1 583.9 million lei. The graphic representation shows the above mentioned data.

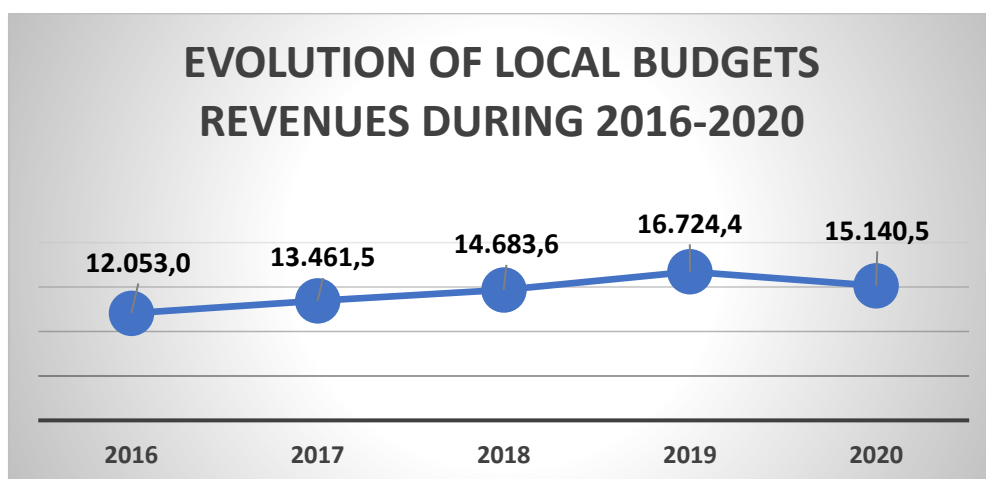**Figure 2:** Evolution of revenues from the Budget of Administrative-Territorial Units of the Republic of Moldova in the period 2016-2020

Source: proceed data from https://date.gov.md/ckan/dataset/15071-raport-privind-executarea-bugetului-public-national

4.2. Practical analysis of the implementation of the local budget for the period 2017-2020

In the analysis of the execution of local budgets, but also of their report to performance management, we will start from the overall analysis of four situations of implementation of local budgets at the national level for 2017 and 2020. Then, we will take each highlighted aspect to identify the reasons for the differences between the specified revenues and those executed.

The revenues executed by the local public administration in the Republic of Moldova for 2017 amount to 13461.5 million MDL, and the specified revenues amounted to 13452.9 million MDL, so they have been executed compared to the forecasts of the total outputs with 100.1%. For 2018, the authorities have specified revenues equal to 14770.7 million MDL, of which 14683.6 million MDL have been executed. Thus, the level of income realization of the local public administration was 99.4%.

In 2019, 17,184.2 million lei were expected, but 16,724.3 million lei were achieved. However, in 2019, 97.3% were executed. In 2020, 96.7% was executed.

For the 2017-2020 period, we should point out that the percentage of revenues executed in relation to what is expected continues to decrease.
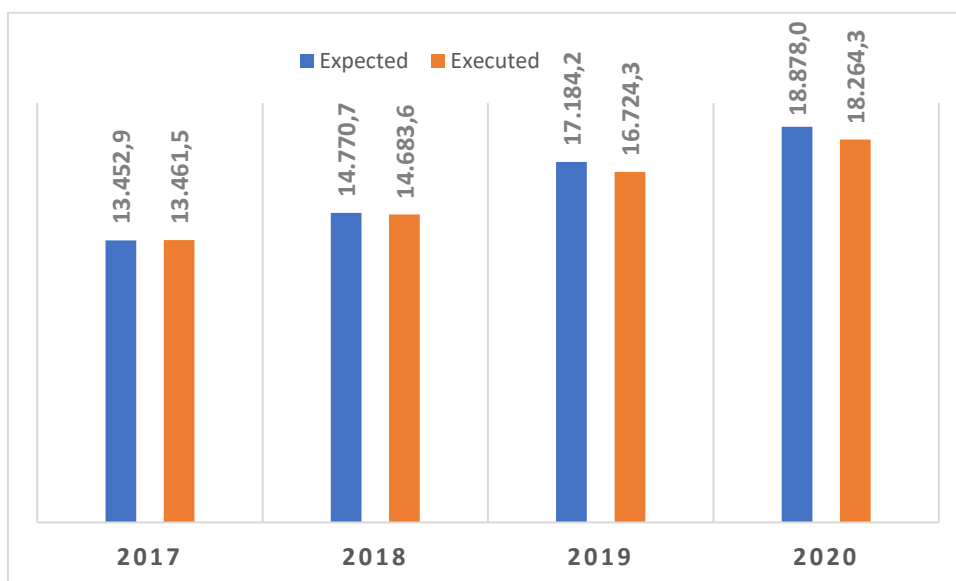
Figure 3: Expected and executed revenues of the local public administration
Source: proceed data from https://date.gov.md/ckan/dataset/15071-raport-privind-executarea-bugetului-public-national

According to the data analysed, we will highlight the fact that the increase in the revenues executed, compared to the one expected for 2017, was mainly due to the classification of revenue from taxes and fees. The percentage rate of determined income is 22.5%, and of the executed income is 24.3%, which represents a significant increase of this segment. By analysing the subsidies received and transfers made within the national public budget, we note that the income executed is in a downward curve from the specified revenues.

The situation for 2018 is different from that of the previous year because a higher amount of taxes and fees was executed, being expected 3490.7 million MDL (26.6%), 3602.1 million MDL were executed at the end of the year (24.5%). In terms of subsidies received, if 2017 showed a decrease, the year 2018 showed an increase of 0.1% of the specified budget, which represents 52.0 million MDL.

According to the following table in the chapter other income that consists of real estate income, income from the sale of goods and services, fines and penalties and voluntary donations, the local authorities recorded for 2018 a decrease of the revenues executed in this chapter of -91, 6 million MDL, compared to the expected initially of 763.7 million MDL, which represent 5.2% of the total structure of revenues.

The year 2019 is highlighted with a considerable decrease in local revenues executed in the chapters: taxes and fees, grants receives and other incomes.

A deplorable situation that we will identify in the chapter receiving grants for 2020. 52.4 million have been planned and 25.5 million have been implemented, which represents 46.66%. These shortcomings have been influenced both by the pandemic situation that has affected the economies of States and also by the political situation.

Table 2 : Local income classification

	Taxes and fees		Grants receives		Other incomes	
	Expected	Executed	Expected	Executed	Expected	Executed
2017	3,029.2	3,274.3	16.9	15.9	703.1	618.8
2018	3,490.7	3,602.1	48.5	52.0	763.7	672.1
2019	3,489.4	3,637.0	66.0	62.1	748.9	697.0
2020	4,039.0	3,975.0	52.4	25.5	662.5	645.9

Source: proceed data from https://date.gov.md/ckan/dataset/15071-raport-privind-executarea-bugetului-public-national

According to the figure below, in the non-financial expenditure and activities chapter executed a considerable difference compared to 2017 where 14794.7 million lei were specified, 13274.6 million lei were executed, meaning that they were executed compared to 89.1% only specified were realized. In 2018 were specified 16169.5 million and 14548.1 million lei were executed, which represents 90.0% were executed compared to what has been specified. We can see the difference in expenditures executed, so for 2018 more than 1273.5 million lei were spent. In 2019 were specified 18,581.00 million lei and 16,937.50 million lei were executed, which represents 91,20%. In 2020 were specified 19,985.00 and 17,927.40 were executed, which represents 89,7%,

Figure 4 : Non-financial liabilities and assets executed
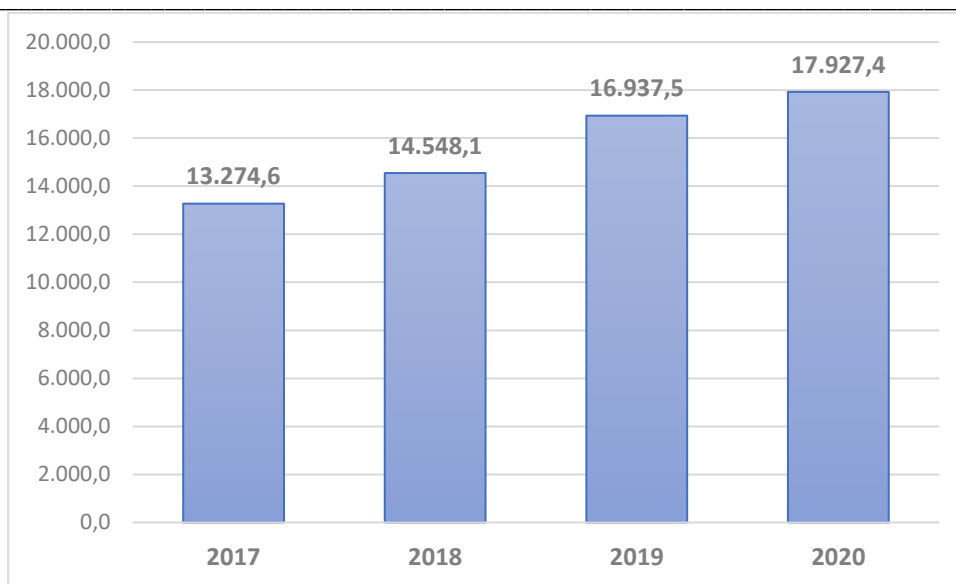Source: proceed data from https://date.gov.md/ckan/dataset/15071-raport-privind-executarea-bugetului-public-national

Expenditure and non-financial goods consist of general state services, national defense, public order and national security, economic services, environmental protection, health care, culture, education and social protection. Thus, we note that the local authorities in the Republic of Moldova in 2017 spent 56% on education. 11% of the total expenditures was capitalized in services in the field of the economy. An aspect on which particular attention was paid in 2017 was the housing and community service households where 9% of the total presented was spent. The areas most undervalued from a local financial perspective are national defense, public order and national security, which have achieved values below 1% of total expenditures at local government level.

For 2018, a similar cost structure is presented at the local level. Local authorities have not changed the expenditure balance, so 56% (8077.5 million lei) of expenditures were capitalized in the field of education, 11% (1524.5 million lei). In the field of economy, 7% in the cultural and social protection sector, 1% (166.9 million) in health care and less than 1% in national defence, environmental protection, public order and national security. 2017, 2018 and 2019 have also distinguished themselves with a high budget deficit. In 2019 in terms of expenses and non-financial assets out of the total of 16.937.5 million lei executed, most were in the field of education (56.47%), services in the field of economy (10.5%), the household (8.6 %), general state services (8.3%). The least exploited are health care (1.02%), environmental protection (0.22%), national defense (0.07%). The year 2020 has a similar structure of expenditures with small differences in household and household communal services (9.28%) and services in the field of economy (11.69%). For example, the value of the excess expenditure was: in 2017 of -1341.8 million lei, and in 2018 -1398.8 million lei, in 2019 -1396,8 million lei.
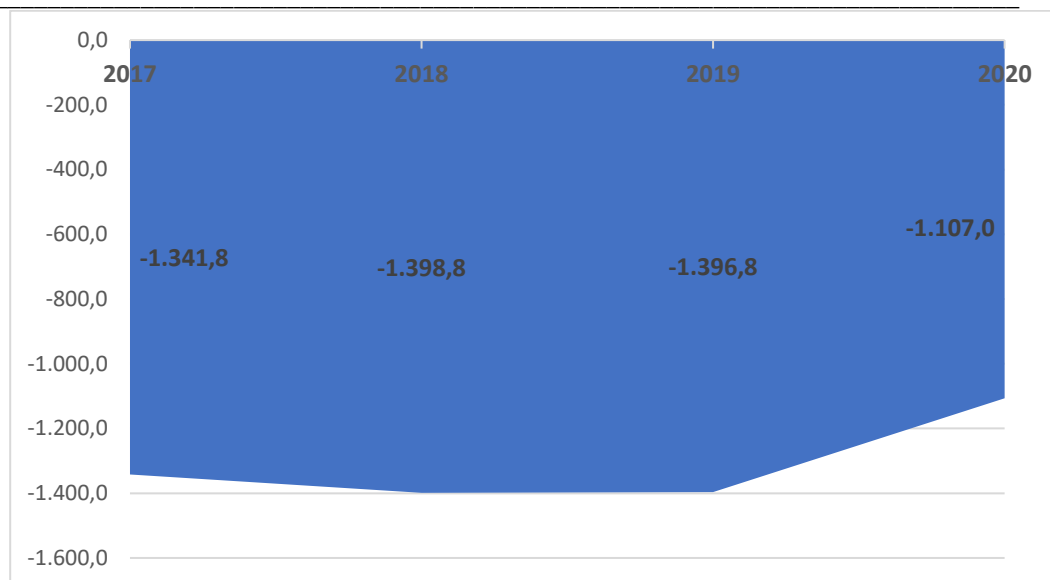
Figure 5: The budget deficit in the Republic of Moldova
Source: proceed data from https://date.gov.md/ckan/dataset/15071-raport-privind-executarea-bugetului-public-national

5. Conclusions

In conclusion, being strategic means taking the future seriously and resisting the short-sightedness that strikes the institutions (Mulgan, 2009, p.235). Thus, budgets are important mechanisms in the public sector, both at the local and central levels. This is a reflection of government strategy and the degree of stability of entities.

Local governance implies good management of local budgetary expenditure. The results of budgetary management are highlighted in the quarterly and annual reports, but also by the level of public satisfaction with the services provided by the executive authorities.

The implementation of the local budget and the study of the indicators of which it is composed may be a benchmark for assessing the level of efficiency and effectiveness of local government.

It is gratifying that the revenue of the budget of the territorial administrative units is increasing every year.

Finally, we note that both in 2017 and 2018 the budget of the local public administrations of the Republic of Moldova has been carried out in more than 100%. This leads us to believe that at local level the Republic of Moldova promotes a high level of efficiency in the implementation of the budget.

The 2019 was distinguished with the budget execution of 97.3%, and 2020 with 96.7%, which means a significant decrease in the execution. In this context, the authorities of the Republic of Moldova show a decrease in the implementation of the budget, which makes us consider an ineffective approach to budget implementation.

Improving the execution of the local budget we propose the following: monitoring the revenues from the budget of the Administrative-territorial units, increasing the fiscal audit and checking the individual taxpayers, reduction of illegal work at the local community level, monitoring the organization of fiscal policy according to social and economic needs at community level.

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6. Limitations of the research

The results of this study have clearly shown that from the perspective of the implementation of the local budget, the Republic of Moldova had a high degree of performance in 2016-2020 years. The analysis was carried out on the basis of the local budget planned at the beginning of the financial year and the budget implemented. This quantitative research has some limitations that in the qualitative analysis could prove otherwise. For example, in the calculation of Dummy variables, the results of the research could prove the contrary. Based on this the direction for future studies is to apply Dummy variables in another research.

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OPTIMIZE DOCUMENT OPERATION USING MOBILE TECHNOLOGY

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Abstract: *The existence of the standards for transmitting documents in electronic format, which ensure their import without being operated once again in the information system of the client, does not exclude the process of inventory of the goods received for identification, inaccuracies that may occur. This paper present a software solution which has been made for optimizing inventory process by using of bar code scanners on Android devices. For this we have made research on client site to identifying needs, and we have to do research for joining different technology together to achieve the main scope.*

Keywords: *Bar code scanner, Android, mobile systems, document operation.*

JEL Classification: *L86.*

1. Introduction

The existence of standards for the transmission of documents in electronic format, which ensure sending them without being operated once again in the customer's information system, does not exclude the process of inventorying the goods received for identification of inaccuracies that may occur. It may happen that for one of the products the quantity received is different from the invoiced quantity, or a particular product has not been received, or has been received from a different assortment. The present paper deals with the optimization of the inventory process within the reception of goods, starting from the practical cases reported by various beneficiaries.

2. Purposes of the Study and Research Methods

This paper presents a case study research. We used interviews, during this research, with people from management to understand the main objectives that solution has to be achieved.

The following objectives were set that the IT solution had to achieve:
● Use bar code readers in the process of operating the invoice received from the supplier when it does not arrive in electronic format, with the operation of differences
● The reception of goods on the mobile terminal, it will take place in the real location and not in the accounting office.
● Identification of existing stock for a scanned product as well as display of the sales prices charged for it.

Also, discussions have been made to end users, which results in different changes of the software, according with their direct needs. The main impact of this changes was to minimize the operating time.

This study was driven by design-based research[5]. This research methodology includes four phases: analysis of practical problems, development of solutions, testing and evaluation, reflection and documentation to produce design principles[6].

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3. Operating Systems and development environment

The Android operating system is very well known and widely adopted in mobile telephony occupying today a market share of about 71%[1] according to the analysis carried out in the last 12 months. This operating system is also used for devices other than mobile phones, such as tablets, or TVs. Within tablets, we identify a market share of 42%[2] for the Android operating system. A special section within mobile terminals is mobile terminals with built-in bar code scanners, which are often found in supermarkets, also known as PDA. Among the operating systems used for PDA, we often meet the version of Windows CE 6.0 whose development was interrupted by Microsoft in 2018, or Windows Mobile 6.5 for which Microsoft announced the interruption of support in 2020. In the case of tablets we will meet Windows 10 which has been optimized for their use (tablet mode).

In our research, prices on the market for tablets with bar code scanner which use Windows or Android operating systems showed us very large price differences between them. The lowest prices are found in the case of tablets with Android operating system. The proportion of these prices being 1 to 5 in certain situations. We have therefore started to develop a mobile solution on the Android operating system, because the cost for final client will be cut off.

We chose to develop a native application due to the benefits they have, compared to other types of applications. These benefits have also been demonstrated in comparing different software development environment where platform specific SDK was choose as the best[4].

For developing we used Visual Studio C# with Xamarin libraries, because the same software solutions can easily be translated to iOs and have good libraries for connecting directly to Microsoft Sql Server, without necessity of using web services. In this scenario we can develop a client-server application with the same authentication mechanism as a desktop client-server application. The benefit for using this technique is that we do not have to create another user for mobile application. Operator can use the same user for desktop and mobile application.

The mobile solution has to be integrated to the existing desktop solution was another issue in our development process.
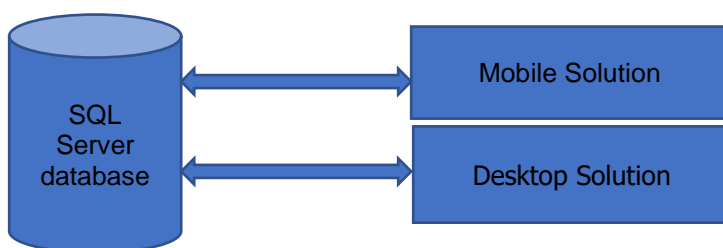

Fig.1 – Client server architecture for mobile and desktop

4. Development

After analyzing the requirements, we identify the following pages which has to contain this solution:
- Login page, used for connecting to the database server
- Home page, from where user can choose what he wants to do

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- Page for looking up of documents
- Header page for invoice/reception
- Detail page used for scanning and operating Quantities and prices which appears in invoice.
- Page for product creation
- Page for searching products

4.1. Login process

For login process we wanted that Sql Server check if username and password are correct or not. To do this when the operator writes a username and password, we need to try to open a connection to the database with this credentials. If the username and password are correct, the connection will be made, otherwise operator will receive a message for invalid credentials used. If the credentials are correct, operator will have access to the other options of the applications.

Because the username and password, has to be used in the future, anytime when we will open a connection to the database, these credentials will be memorized as static properties of MainAcitivity class.
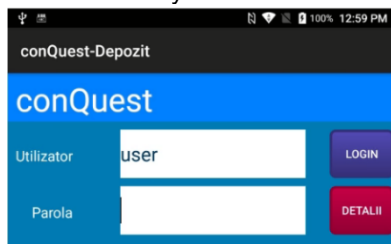
Fig. 2 – Login page

After login process has been successfully made, the user will arise in a main page where he can choose from the available option, what he want to do.

4.2. Document page in mobile and desktop application

A document has the following information's: supplier, data, number, currency, total value with VAT and total value of VAT. We have decided to create a page only for this information's because we are limited to the screen resolution as can be seen in fig.3. , and we also create a page for recording products, quantity, percentage of VAT used, prices and other properties.

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Fig. 3 – Document header and product page

For recording a document, the following action's has to be done. We need to select the supplier, to specify document number and the data, to specify the currency, and to correct if it is necessary the total value with VAT, and the total value of VAT.

In product page we must scan each article. With the help of bar code scanner which is incorporated into device we can easily scan a product, and this product will be automatically recorded in this page. After each scan we can modify the quantity of products, percentage of VAT, and the price according to the invoice or we can go further to the next product.

Because the process of price specification takes time, we were looking for a method to optimize this process. After analyzing a few options, we have decided to implement a strategy for price proposal according to the last buying recorder from the same supplier. This option has speed up scanning process because users have to modify the acquisition price only when differences occurs and not each time.

Another optimization problem was regarding the VAT percentage used for this product. That is why we have decided to use the percentage of VAT recorded for that product. In this scenario also the operator has only to modify VAT percentage only in some particular case and not all the time, so the scanning process can be more fluid.

Stored procedure has been used in SQL Server, for creating methods for looking up to supplier, VAT's, currencies, for recording a new document, for modifying an existing one, for looking up to product specifications, for recording stock movements and so on. These stored procedures were accessed by using different methods inside classes and was called by using connection to database created with user credentials recorded during login process.

Fig.4 – Document header and product window in desktop

Fig. 5 – Accounting influence of the document recorder with mobile application

4.3 Performance
We performed performance tests on the operating time of documents in both the desktop application and the tablet application to find certain problems related to the design of the tablet application. We have made test in two different conditions:
● We scan products without modifying quantities in both applications.
● We scan products and modifying quantities in both applications

Fig. 6 - Performance comparison

We have identified that in scanning, tablet application is a little bit faster, but we lose a lot of time quantity modification.

5. Conclusion

The wide spread of the Android operating system for mobile devices has led to the emergence of terminals with built-in bar code scanners, at reasonable prices that can successfully replace the old PDA.

The computer solution developed also achieves the requirements of operating invoices with correct accounting interpretation (tax rates, reverse taxation, highlighting the differences due to rounding, as well as operating in another currency).

The use of 2D codes by economic operators is not yet widespread, in our case all encoding being 1D.

We must improve quantity modification process in tablet application because of performance issues.

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THE ROLE OF TELEMEDICINE AND DIGITALIZATION IN THE PARADIGM SHIFT OF MEDICAL SERVICES IN ROMANIA

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Abstract: *The article outlines the role of telemedicine within the entire medical services in Romania, and aims to highlight the benefits and limitations of this type of interaction, its current market size, its growth potential and the top ten private players involved. In order to achieve the goals set in the European Digital Strategy 2030, Romania must continue to adopt measures that include raising public awareness of the benefits involved by telemedicine, the support of large-scale projects that may test and evaluate telemedicine, as well as legislative acts to eliminate the barriers against the use of telemedicine. As digital medicine gains importance, several paradigms involving the doctor-patient interaction, prophylaxis, healthy human medicine, and the family doctors will also change. Both qualitative and quantitative data has been analysed in the research process. The former includes articles and surveys published by the specialist press.The quantitative data has been taken from reports published by the European Commission or by the World Health Organisation. With regard to the concept of „personalized medicine" and to the National Health Strategy 2021-2027, the author has consulted the State of Innovation 2020 report, elaborated by the Centre for Innovation in Medicine.*

Keywords: *healthcare, prevention, personalised medicine, telemedicine, ePatient, eHealth, healthy human medicine*

JEL Classification: *I11, I18, I30, M31, O33*

Motto
"It has become increasingly clear that universal health coverage (UHC) cannot be achieved without the support of eHealth" (WHO, 2016)

1. Introduction

In the context of the coronavirus pandemic, the strengthening of prophylactic measures and the need to ensure public access to primary healthcare in general, and to telemedicine in particular, have sped up the implementation of new policies and public health programmes in many countries around the world. The Romanian authorities are to adopt the Operational Health Programme 2021-2027, which is considered to be the most ambitious and complex modernization programme of the health system. According to „Healthcare, a priority in the new policies 2021-2027", an event hosted last year by the Ministry of European Funds, an estimated 6 billion euro is due to be invested in healthcare (MIPE, 2020b).
Although Romania has been among the first countries in the world to use telemedicine in emergency medical interventions, the public health system has not fully exploited the potential of such practices. The private healthcare system has responded more promptly to the advantages of telemedicine, by launching an online platform as early as 2016 - such as Atlas, funded by Dr Mihai Bran (NN Asigurări, 2020) The turning point in the global development of telemedicine is represented by the sanitary crisis related to the COVID-19 pandemic. Telemedicine made more progress within one month than in the ten years before, with France at the forefront: early March 2020 there were 10k teleconsultations a day, and by the end of the month this number increased 100 times, reaching 1 million a day (EC, 2021: 11). These facts highlight one of the paradigm shift related to telemedicine: in over

70% of the typical primary healthcare services, the patient can interact with the doctor without being together in the same room.

2. The healthcare of the future is based on prevention and on individual responsibility

The Romanian national strategy for sustainable development 2030, adopted by the Romanian Government in November 2018, stipulates that *"the improvement of healthcare services and of the access to quality healthcare is essential for a sustainable patient- and prevention-centred society"* (DpDD, 2018: 31).

Considering that healthcare services represent the most dynamic sector of the national economy (Gheorghe, 2018: 20), the strategy aims to achieve by 2030 "*the full digitalization of the healthcare system and the elimination of paper documents in order to maximize the efficiency of medical interventions and to ensure the population's quick access to healthcare services"* (DpDD, 2018: 35). The implementation of the three eHealth pillars – Big and Smart Data, Artificial Intelligence and the Internet of Things – will change the national healthcare system for ever (INOMED, 2020).

Future of healthcare ● The 4P Healthcare

- *Healthcare is participative*: medical data is produced and monitored directly by the patient, assisted by an ever growing number of connected sensors. The doctor is no longer the sole source of medical information and as a result the patient-doctor relationship is transformed.
- *preventive*: the patients who periodically collect information regarding their health become ever more aware of the need to maintain good health, which paves the way towards *prevention*-based healthcare;
- *personalized*: the ongoing collection of private data – increasingly accurate and diverse – allows an increasingly personalized healthcare;
- *predictive:* technological progress, which enables the digitalization of every individual's complete genome, paves the way towards an increasingly predictive healthcare (CESE, 2017).

Strengthening the co-producer patient's sense of responsibility

The beneficiary has an active role in healthcare services, with a direct participation in every stage of the service delivery, as a *co-producer* (Purcărea, 2017: 95). The consumer's full involvement makes it possible to apply the preventive healthcare principles, as well as enables the implementation of personalized behaviour and treatment programmes. The patient's consent to private data processing represents the communication foundation within the eHealth system (CESE, 2017). It is up to the user to accept or decline eHealth services, as per article 5 in Annex 2 to the Government Resolution passed on 26th February 2021 (H.G.).

Placed at the centre of all marketing activities, the user imposes their place within the marketing mix. The e-patient will be periodically monitored and notified – especially through online and direct marketing channels – by the healthcare service suppliers. To increase its attractiveness, the marketing actions will be reinforced by publicity, public relations and promotions both within mobile applications and on social media pages. The reception of such messages depends however on the permissions granted within the initial contract with the supplier, as well as on the e-patient's level of interest (Gay, Charlesworth, Esen, 2009: 249).

Increasing the personalization level in healthcare services

In September 2017, the European Economic and Social Committee insisted on the challenge regarding an *overburdening* of the citizen with the responsibility of *self-managing* their health

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condition. The digital transformation, the access to knowledge and innovating personalized healthcare services may allow each e-patient to become an active participant in their own health maintenance, but also to contribute – as a *collaborator*, information *producer* and data *supplier* – to improving other citizens' health condition (CESE, 2017).

In a FutureProofing Healthcare report (2021) regardind to the European Personalized Health Care Index, Romania is located on the 32nd position out of the 34 evaluated countries. The study analysed primarily the healthcare systems from within the EU and our country has to filling the gaps in 4 major fields: the knowledge training level in the healthcare system, the digital infrastructure, medical services and treatment access and digital technologies.

The new multidimensional ecosystem of healthcare services

Composed by the so-called „multiple stakeholders", the *healthcare ecosystem* lies at the intersection point between the citizen, the medical and paramedical staff, on the one hand, and a multidimensional host of entities such as hospitals, health insurers, the pharmaceutical industry, big investors, regulating bodies and governments, on the other hand. In such a complex grid, healthcare marketing requires an integrated approach, connecting all the 3P actors – patients, payers, and prescribers – in a perspective that converges towards the entire population's health and welfare as a major goal (Purcărea, Hostiuc 2020: 92). The concept of an interest-based ecosystem convergence is underlined by Ion Petroval, coordinator of EIT health center in Romania: *"If technology is going to aid us all, as patients, doctors and administrators, the people funding, those establishing the rules, with the users and with the suppliers must reach an unanimous agreement"* (CASPA, 2021).

2.1. What is telemedicine?

Telemedicine represents all distance healthcare services, delivered without the simultaneous, physical presence of the doctor and the patient, for diagnosing, treatment prescription, ailment monitoring or prevention purposes, in a secure way, by means of information technology and electronic communication (O.G.196, 2020) Telemedicine is very likely to become the *healthcare of the future* because it saves lives, is time-effective, substantially reduces the number of rehospitalizations and improves the citizens' welfare (Radu, 2017: 180).

Main benefits of telemedicine

One of the key benefits, with a great social impact, is related to the improved access to primary healthcare of all consumer categories. By eliminating the need for physical mobility, telemedicine can improve *access to treatment* in areas with a shortage of specialists or with difficult access to healthcare (FutureProofing Healthcare, 2021). According to the census on 30th September 2020, this also concerns the over 854.965 disabled people in this country (ANDPDCA). The second major benefit regards *telemonitoring*, which can improve the chronic disease patients' quality of life, thus reducing the number of hospitalizations (COM 689, 2008). Another benefit concerns the facilitation of ongoing healthcare and of the access to healthcare services. According to the findings of a survey published early 2020, based on over 10.000 respondents in 8 Romanian towns, 85% of the persons in need of healthcare assistance usually postpone the medical visit or cancel it altogether. This fact generates substantial health risks for millions of citizens, health-related work absences and a lower quality of life. It also directly affects employers' productivity and revenues, as many employees take time off work for reasons that might be avoided by an early medical check (Săndulescu, 2020).

Summing up, here are the advantages of telemedicine both for the healthcare system and for the medical services suppliers and beneficiaries (Radu, 2017: 178):
- telemedicine meets the requirements of *personalized healthcare* (INOMED, 2020)

- the absence of direct contact helps prevent the spread of contagious diseases
- telemedicine offers geographical and demographic accessibility, eliminating the inequities of the public healthcare system
- it eases the burden on the medical staff in Emergency Units and frees resources to the entire public healthcare system, especially by providing secondary and tertiary medical assistance
- it reduces mortality through consultations in real time in extreme emergency situations
- using the *Electronic Health Record*, the doctor can access the patient's medical history quickly, obtaining both a general and a detailed view of their health condition
- it makes the diagnostic process faster and more accurate by facilitating communication within professional neworks – the doctors obtain "a second opinion" on a specific case
- it facilitates the citizens' access to "a second medical opinion" (Andriescu, 2021)
- it reduces the pressure on the social insurance system by lowering the number of hospitalization and re-hospitalization days
- it decreases the number of persons who refrain from a treatment due to lack of time to visit the practice (AMA Digital Accelator, 2021)
- it disciplines the activity of both prescribers and patients, by supporting the appointment flux, and ensuring that the disease is monitored and the treatment plan is respected (Medic Hub, 2021)
- it offers a sustainable alternative that spares time, energy, fuel, materials etc. (AMA Digital Accelerator, 2021)
- if supported by effective marketing, the telemedicine platforms may become channels to promote a healthy lifestyle, creating user communities that provide orientation to other consumers (Gay & all, 2009: 396).

Main barriers to telehealth adoption
According to a PwC report for the European Commission, the main barriers to a large-scale adoption of telemedicine in the EU are the absence of a legislative framework for billing telemedicine services and the inadequate IT infrastructure, especially the lack of terminals required to access eHealth services, or connectivity problems (Fortune Business Insights, 2021). Further hindrances are related to the policies on the security, protection and processing of electronic medical records and of general health data.

2.2. Objective rationale for adopting telemedicine
It is of utmost priority to implement telemedicine as it addresses the limitations of the public healthcare system, considering Romania's rate of mortality, avoidable both by prevention and by treatment, among the highest in the European Union. Only four of the most significant deficiencies of the healthcare services in this country are listed bellow (OCDE, 2019):
- The public healthcare sector is underfunded – Romania's healthcare budget is among the lowest in the EU both per capita (1 029 EUR, compared to the EU average of 2 884 EUR), and as a percentage of GDP (5% compared to 9,8% in the EU)
- Prevention is not seen as a priority – investment in prevention lies under the EU average. In 2017, the budget for prevention represented only 1,8% of the overall health budget in Romania (the EU average is 3,2%).
- Workforce shortage – the number of doctors and nurses is among the lowest in Europe
- The insufficient use of primary healthcare places a strain on hospital and emergency services.

2.3. Catalyzing factors for telemedicine development in Romania

2.3.1. SARS-CoV-2 Pandemic

Despite over 3.23 million victims worldwide (WHO, 2021) and being a global source of insecurity, the COVID-19 pandemic has given prominence to healthcare and to prophylactic measures. The need to fight the spread of the virus by physical distancing has accelerated the adoption of telemedicine, which is a considerably more suitable and safe way to advise and monitor individuals, whether for cases of light or chronic disease (AMA Digital Accelerator, 2021).

2.3.2. The healthcare legislation review

The COVID-19 pandemic has aggravated the sanitary crisis in Romania, pressing the authorities to adapt to the new realities and paving the way towards new, faster modalities to supply healthcare services (Presidency, 2020). The Romanian Government issued in November 2020 the Emergency Ordinance no. 196 supplementing Law no. 95/2006 regarding the healthcare reform (O.G., 2020). On 26th February 2021, it passed the Government Resolution which stipulated the six types of telemedical services accepted in Romania: tele-consultation, tele-expertise, tele-assistance, tele-radiology, tele-pathology și tele-monitoring (H.G., 2021).

2.3.3. Rising digital literacy among the population

The Digital 2021: Romania report confirms that, in January 2021, there were 15.49 million internet users. Last year, the number of social media users rising over the past year by 1 million (+9,1%) and reaching 12 million persons, representing 62,6% of the total population. (see **Figure 1**)

Figure 1. Digital 2021:Romania Report
Source: Datareportal, 2021

2.3.4. Digital healthcare facilitates access to the second opinion

In the current process of healthcare digitalization, the access to information acquires new significance, as the patient often wishes a second opinion on a certain medical condition. The rationale of any telemedicine application is the need to obtain quick access to a credible source of information, independent of territorial location or service fee (Andriescu, 2021).

2.3.5. Telemedicine ● appreciated by doctors and reimbursed by insurers

The Emergency Ordinance no.196 (2020) confirms the validity of tele-consultation and includes it on the list of activities that can be reimbursed by public or private sanitary units, whether or not they have a contractual relation with the Health Insurance Agencies. As a legislative measure that had long been due, the ordinance was welcomed very warmly by the medical staff on all levels. In Alina Neagu's article (2020), Dr. Sandra Alexiu, President of Family doctors Association Bucharest-Ilfov, highlights an extremely dramatic aspect: "*In the past fifteen years, […] we have not been allowed to be doctors. Instead of treating our patients, we have had to issue numberless reference notes and letters."* Ion Gheorghe

Petrovai, a doctor and co-founder of FreshBlood HealthTech, states that "*up to 70% of medical interactions can be carried out by distance*" (Neagu, 2020).

3. Telemedicine and healthcare digitalization in Romania

The healthcare digitalization is the sixth priority pillar of the Operational Health Programme (OHP) 2021-2027, with three major objectives: the re-design and modernization of the National Healthcare Insurance Agency's (NHIA) IT system, the development of the National Monitor for healthcare data and the internal and external digitalization of healthcare institutions, as well as the fluidization of information streams. The funds allocated to digitalization through the OHP 2021-2027 amount to 260 million euro (MIPE, 2020a).

3.1. The Electronic Health Record ● the foundation in digitalizing healthcare services in Romania

Romania must respond to an ambitious challenge set by the Digital Strategy 2030. In its meeting on 9th March this year, the European Commission proposed a *Compass for the digital dimension* that might reflect its digital objectives. Referring to public services, point 4 stipulates that, by 2030, any European citizen should be able to access their own *Electronic Health Record* (CE, 2021).

Funded by an investment of about 18,5 million euro from the European Social Fund for Regional Development in 2014, the project "An integrated IT system for the Electronic Health Record" began to be implemented. According to the data provided by NHIA, the EHR includes the following sections (CNAS-DES, 2014):

- Summary of essential vital medical data - accessible in emergency situations
- Complete medical history – an overview of the general health condition
- Antecedents declared to the doctor by the patient during the consultation
- The archive of medical records stored chronologically
- Secure personal data that can be modified only by the patient.

3.2. The telemedicine market in Romania

According to doctor Ion Petrovai, almost 20% of the Romanian population turned to telemedicine (CASPA, 2021). KeysFin specialists estimate the value of healthcare services in Romania around 15 billion lei in 2020 (Voinea, 2021). The net result (profit minus net loss) of the *private healthcare services* suppliers rose by 30% from 2018 and was almost 37 times (+3.570%) higher than in 2010, reaching 2,6 billion lei in 2019, due to the conditions that Romanian patients find in private hospitals: the service quality, the high-performing equipment and the quality of the consultation, treatment and intervention rooms, according to KeysFin (Voinea, 2021). Philip Choban, CEO of Telios Care, one of the main suppliers of telemedicine services for employees in Romania, points out that about 65-70 million consultations, references and prescriptions are carried out or issued yearly in the family doctors and specialist practices, both public and private (Roșu, 2021).

Telemedicine in the public health system

Romania features among the pioneers in telemedicine, considering that the current State Secretary, Raed Arafat, managed, in Târgu Mureș in 2003, to connect the ambulance paramedics with specialist doctors in hospitals (Alexa, 2014). If major telemedicine projects were managed by the Romanian authorities with foreign support between 2008 and 2018 – the North-American finance agreement USTDA (MS, 2012) and the POSCCE 49472 project, on EU funding, covered the rural areas in the Tulcea, Galați and Brăila counties (MS, 2014) – the number of privately funded telemedicine applications has risen significantly in the past year. Following the digitalization process, hospitals in major cities have taken the e-Health

approach. For example, in December 2018, the "Dr. Carol Davila" Central Military Emergency University Hospital became a member of the International Society for Telemedicine and eHealth (ISfTeH) in December 2018 (SUUMC).

Speeding up the adoption of telemedicine in Romania
Improving the population's digital literacy, the development of the telecommunications infrastructure – access to high-speed internet, number of mobile applications, etc – as well as the creation of legislation favourable contributes to new private operators emerging on the national telemedicine market (Telios Care, Atlas, Recomedica, Docbook, Medic Chat, Doclandia, Doxtar, Medicai etc) which offer concrete solutions to a system that has long been ailing. The viability of telemedicine and the high growth potential of the private healthcare market are also proved by the collaborations between investment funds, insurers or banks and the telemedicine platforms:
- Smart Impact Capital and Telios Care - a first joint investment by three of the largest angel investor networks in Romania, amounting to 200.000 dollars (Săndulescu, 2020)
- Cleverage Venture Capital and Medic Chat (Andriescu, 2021)
- Cleverage Venture Capital and Recomedica (Abrihan, 2021)
- Roka X investment fund and Medicai (Andriescu, 2020)
- Next Capital and DocBook (Profit, 2020)
- NN Asigurări and Atlas App – the campaign "Live from one day to the welfare!" (NN, 2020)
- Transilvania Bank and DataKlas eMedical (HTTS, 2020)

According to Raluca Radbata from ING Bank România, the polarization of the healthcare market reflects the growth potential of the private sector, taking into account the large difference between the numbers of those who use public healthcare services (70%) and of those who prefer private medical services (Mihalache, 2020).

3.4. HelloGreen – an innovative personalized healthcare concept
HelloGreen is a *personalized medical management* application targeted at a responsible audience, as it involves both prevention and therapy. HelloGreen supports the healthy human medicine, namely individuals who want to maintain their healthy condition, but also the treatment of patients who want to have priority access to the best doctors and to personalized treatment plans that reduce the risks associated with their disease (Besmax, 2021). In a recent interview published by the Avantaje magazine (2021), Florin Hozoc, founder of Besmax and application author, points out an essential aspect that changes the perception of classical medicine: *„HelloGreen sets out from the premise that you are wealthier if you are healthy."* The second premise says that *personalized healthcare* can offer better, safer and more effective services, improving both life expectancy and quality of life.
HelloGreen offers an innovative telemedicine solution that represents a distance communication instrument in the doctor-patient relationship, ensuring a 360° monitoring of the subscribers. The HelloGreen application is in the test phase and is due to be launched at the end of May 2021. Personalized healthcare services will be offered on a monthly subscription plan between 0 and 30 euro, with over 80 medical specialties.

3.4. Top 10 local telemedicine operators
The operators mentioned in **Tabel 1** excel in specific parts of telemedicine. For example, Telios Care grants access to a second opinion in a maximum of 24 hours, with an average response time of 2 hours.The Doclandia infrastructure allows the simultaneous processing of 100000 videocall sessions. MedicAI digitises medical imaging in a cloud storage, where it stocks over 100.000 files (Niță, 2021).

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Table 1. Top 10 Romanian telemedicine operators

Nr crt	Application name	Launch year	Founder	Doctors	Subscribers / accounts	Specialties
1	Atlas	2016	dr Mihai Bran	1000	200000	N/A
2	Medic Chat	2017	dr Emilian Rădoi	223	30000	40
3	Telios Care	2018	Philip Choban	N/A	75000	21
4	Doxtar	2019	Cătălin Chiș	100	50000	40
5	Recomedica	2019	Eduard Cioroagă	326	30000	N/A
6	Concierge Medical	2019	dr Wargha Enayati	N/A	N/A	N/A
7	Medicentrum	2019	dr Horațiu Ioani	300	N/A	49
8	Doclandia	2020	Matei Țiboc	120	N/A	N/A
9	ArcadiaLine	2020	Dan Fiterman	100	N/A	40
10	MedicAI	2020	Mircea Popa	1300	100000	N/A

Source: author's research

4. In conclusion

In order that telemedicine achieves the success it is imperative that all actors involved adapt to the new digital context in the healthcare services provision (COM 689, 2008). The healthcare digitalization generates several paradigm changes, one of which associated with telemedicine: in 70% of the cases, the client no longer travels to the medical practice for the face-to-face consultation. Market research carried out in the United States in 2016-2019 reveals the fact that about 67% of the doctors prefer telemedicine for the efficiency of teleconsultations (AMA, 2020). The second paradigm change regards the new position of the family doctor. Within primary healthcare, the family doctor becomes the *manager of a cross-disciplinary team*. The new digital realities require the healthcare service beneficiary to become an active *co-producer* of their own health condition. Personalized healthcare involves two further paradigm changes related to a new e-patient conduct, namely the transition from *ill patient medicine* to the *healthy human medicine.* In relation to the classical "one size fits all" approach, personalized healthcare undertakes to provide *right* patient with the *right* prevention and treatment, at the *right* time and from the first moment.

This aspect was highlighted by Prof. Nick Guldemond at the fifth Personalized Medicine Conference, organized online in September 2020, in Bucharest: „*A paradigm change is needed towards healthcare centred on the person. The patient will be seen as a partner in the effort of maintaining or improving their quality of life by means of a personalized treatment plan. It will require an integration and co-operation between services and a change in the roles and responsibilities of the decision-makers in the system. It is simple on a conceptual level, but difficult to implement systematically"* (Voinea, 2020).

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GREEN MARKETING COMMUNICATION STRATEGIES: AN INTEGRATIVE LITERATURE REVIEW

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Abstract: *Marketing communication for green brands and products should not be seen exclusively as a means to attract and impress consumers with the most beautiful and spectacular green messages. All messages communicated to the public must have a solid foundation, which most of the time can be represented by the attributes of the green product or by its benefits for the environment, community and for the current and future generations of consumers. In this regard, marketing communication, as part of the green marketing strategy, faces several challenges. On the one hand, green communication has the role of educating and informing the public about the specific benefits of green products in order to determine the public to adopt a pro-ecological behavior. On the other hand, the communication approaches must respond to the exigencies of the green field, in order to avoid the social and ecological criticisms, as well as the categorizing of the organization's actions as part of the greenwashing phenomenon. Therefore, the purpose of this theoretical paper is to identify the typology of green marketing communication strategies. The paper is based on secondary data sources, namely the literature on green marketing communication, focusing on specific communication strategies. This study reviews and synthesizes 39 relevant articles related to the researched subject, which have been identified in academic databases. In literature have been identified five defining criteria for communication strategies, along with specific strategic alternatives. We note the need to continue the research in this field, in order to develop other strategic alternatives that respond to the specific problems of this market and that offer the opportunity for green brands to position themselves effectively.*

1. Introduction

Green products have evolved from a narrow pursuit, focused on convincing a niche market to buy green for the sake of green, into a complex yet vibrant activity in which the functional benefits of green products are recognized and promoted to a broad audience (Dean and Pacheco, 2014). This expansion was based, among other things, on the intensification of communication efforts and on the attempt to make the green message easier to receive by the target audience.

The marketing communication activities carried out by an organization through messages related to ecological concerns, whether they are correct or not, have a significant effect on the green position that a brand wishes to have on the market and, certainly, on the financial results. Therefore, the choice of marketing communication options and media channels, as well as messages with a stronger or less strong green character, brought together in an integrated communication strategy, play a key role in influencing consumers' perception of the green brand.

In this regard, the challenge for companies is to develop communication campaigns suitable for different consumer profiles and for the diversity of green solutions developed. Without effective communication, it will be almost impossible for consumers to be aware of green offers and understand how they integrate with their lifestyles in order to meet their needs (Peattie and Belz, 2010).

2. The concept of green marketing communication

As important as in the case of conventional marketing (Peattie and Belz, 2010), communication is one of the most sensitive topics when discussing the organization's attitude towards environmental protection, especially due to the impact it can have on a wide range of audiences.

Communication is considered one of the most controversial areas of green marketing, often being criticized for presenting green products as simplified solutions to complex environmental problems (Peattie and Charter, 2003). Also, marketing communication was often the focus of criticism, primarily because of its role in the promotion of unnecessary consumption and creation of a consumer society, but also because of the resources spent to send messages to consumers (Ham, 2011). Therefore, green communication is considered by Juwaheer, et al. (2012) a major area of weakness for green marketing specialists.

Green marketing communication "strongly stresses a dialogue with stakeholders, especially customers, aimed at informing and educating those customers, and seeking to establish the social and environmental credentials of the company and its products" (Peattie & Charter, 2003, p. 748). Also, green communication aims to create the company an image of an entity that undertakes green business and to provide consumers with ecological information about the product (Boztepe, 2012).

As we can see in the opinions presented above, the communication made for green products pursues a double objective: educating the various interest groups in an ecological way and creating an image of environmental responsibility.

In addition to the strong promotional character of communication in green marketing (Danciu, 2006), several ethical and legal directions need to be considered, including understanding and communicating the absolute and relative impact of green products on the environment (Wong, et al., 1996).

We must also not forget that the success of green communication depends on both the choice of an appropriate positioning for the brand and a rigorous analysis of the target audience to which the message will be directed, in order to adapt to its characteristics (Vicente, et al., 1999).

3. Particularities of green marketing communication

In the case of communication for green products and brands, we can talk about a series of particularities, some of the most important being the following:

a. *The strong informative character of green marketing communication*

Marketing communication in the field of green products aims to inform rather than impress (Peattie and Crane, 2005). Therefore, the primary purpose of communication is to transmit information about the company's commitments, efforts and results in the field of environmental protection and quality of life (Mera, 2003; Danciu, 2006). In terms of informing customers, these appreciate the efforts of retailers to provide them with the information they need to make informed purchasing decisions, as well as to use and dispose of products responsibly (Ottman, 2011). In addition, it is necessary to guarantee the performance of green products, given that a significant part of consumers has doubts about the performance of green products.

b. *The educational character of green marketing communication*

The first task of promoting green products is to educate consumers about the environmental issues to which the product contributes to resolve. In this situation, the consumer must be offered a solution or an idea of how he can, as an individual, contribute to the conservation of the environment, but also taking into account his personal interests (Ham, 2011). For companies that strive to educate the public, educational messages are special opportunities to stimulate purchasing power, improve corporate image and increase credibility (Ottman, 2011).

c. *Communication tools are gaining a different importance*

Carlson, et. al (1996) argued that the marketing of green products would seem to be a prime candidate for integrated marketing communication, due to the abundance of plausible tools to be used reasonably on the issue of environmental protection. However, their importance is different due, on the one hand, to the plurality of the target audience that the message can reach and, on the other hand, the different credibility given by these customer segments to the green messages transmitted through each communication tool (Mera, 2003).

Advertising through the media loses its importance because it is an environment that conveys little credibility to the recipient and, in many cases, does not provide the opportunity to communicate the specific explanations of a message regarding green products (Mera, 2003). Sales promotion can be an effective way of communication, as long as specific techniques are carefully selected, to ensure that there is synergy with the promoted product (Peattie and Charter, 2003).

Mera (2003) considers that public relations, as a whole, can be considered as the central tool of marketing communication in the field of green products. Also, a well-trained sales force can help educate consumers (Ginsberg and Bloom, 2004) and raise awareness of key issues such as energy conservation and efficiency, recycling, environmentally friendly product purchasing.

Direct marketing is configured as a less aggressive environmental alternative, although, evidently, it should take into account the resources consumed, the cost of packaging and individual delivery (Molina and Roqueñi, 2003).

d. *The importance of the credibility of the communication approach*

Credibility is the foundation of effective green marketing (Tiwari, et al., 2011), which is determined by the extent to which the public perceives that the statements made by the advertiser are true and credible. Therefore, communication is unlikely to be an effective strategic tool if it is not supported by other activities of the company. Thus, the communication of a real attribute of a product requires a change of the product or the production process (Polonsky & Rosenberger III, 2001). On the other hand, the beautification of reality is useless, because the customers of green products are among the most demanding and determined consumers. Once deceived, any subsequent message will no longer be trusted, as will the products and the company itself (Danciu, 2006). Therefore, green marketing can stimulate green consumption, as long as producers are truthfully environmentally responsible without exaggerating the properties of green products (Aceleanu, 2016). This goal can be achieved by promoting brand identity and increasing credibility, building a respectful and truthful relationship with the customers, always informing them regarding the products, and implementing a policy of transparency with each of the stakeholders (Caprita, 2015).

4. Marketing communication strategies for green brands

Efforts to position a green brand and develop environmentally efficient products may prove insufficient without their proper presentation to all stakeholders. Given that only in a strategic context marketing communication can acquire the necessary rigor and ability to ensure the

achievement of set objectives (Popescu, 2002), formulating communication strategies that respond to current environmental issues becomes imperative.

Table 1 presents the typology of communication strategies in the field of green brands, starting from a series of definition criteria.

Table 1. Typology of marketing communication strategies for green brands

Definition criteria	Strategic alternatives
A. Depending on the coordinates of the desired global image and the objectives to be achieved [1][2][3][4][5]	Commercial communication strategy Corporate communication strategy Combined communication strategy
B. Depending on the role that the organization assigns to the communication activity [6][7][8]	Defensive communication strategy Offensive communication strategy Offensive comparative communication strategy
C. By referring to the green product life-cycle [9]	Communication focused on the production phase Communication focused on the consumption/use phase Communication focused on the waste disposal phase Communication without reference to the life-cycle of the product
D. Depending on the desired change in consumer behavior [10][11][12]	Consumer education strategy Empowered consumer strategy Consumer persuasion strategy
E. Depending on the presentation of the message regarding the green attribute in a communication campaign [9][6][13][14][15]	Direct communication strategy (impersonal) Communication strategy such as "the baby is sick" Communication strategy such as "the baby is well"

Source: [1] adapted from Popescu, 2002; [2] Iyer și Banerjee, 1993; [3] Banerjee, et. al., 1995, cited in Mera, 2003; [4] Bigne, et al., 2000; [5] Benoit-Moreau & Parguel, 2011; [6] Vicente, et al., 1999; [7] López, 1995; [8] Hopfenbeck, 1993, cited in Vicente, et al., 1999; [9] Mera, 2003; [10] Ottman, 2011; [11] Danciu, 2006; [12] Danciu, 2012; [13] Ellen, et al., 1991; [14] Obermiller, 1995; [15] Cox, 2008.

A. *Depending on the coordinates of the desired global image and the objectives to be achieved* (adapted from Popescu, 2002), companies operating on the market of green products can choose one of the following strategic alternatives (Iyer and Banerjee, 1993; Banerjee, et. Al., 1995, cited in Mera, 2003; Bigne, et al., 2000; Benoit-Moreau & Parguel, 2011):

▪ Commercial communication strategy - all communication efforts are centered around green products or the green brand, which have the ability to support the overall image of the organization. Communication approaches include information on product specifications, in particular those regarding the green attributes of the product or packaging. Thus, the messages may focus on the chemical content of the product, regardless of whether it can be recycled or not, on its emissions or its impact on certain environmental factors, on the type of raw material used and other attributes that affect the environment (Sarkar, 2012). Furthermore, the green brand contributes to the enhancement of products and, in this way, plays a special role in increasing the preference for green products (Danciu, 2006).

▪ Corporate communication strategy - this strategic alternative involves defining a global image that coincides with the corporate image. In this situation, the messages sent do not refer to the product or brand, but to the company as a whole, whose global image is associated with a cause or activity that has the broad support of the public (Segev, et al., 2016). This alternative involves transmitting information about the company's commitment and effort to improve its environmental performance. Also, messages that reveal the

environmental policy or even the company's philosophy, communicated through the specific mission and values, are part of this strategy.

Among the many reasons that determine the communication of environmental information is the fact that such behavior demonstrates the social responsibility of the company, contributes to creating a corporate culture and strengthening the green image at a corporate level (Pellé-Culpin, 1998, cited in Mikol, 2003). Therefore, companies invest in protecting the environment not only to avoid a series of sanctions or problems due to pressure from certain groups, but also because this attitude allows them to improve their corporate image (Chen, 2008). In the same direction, Ko, et al. (2013) consider that green marketing can be one of the effective tools for strengthening the corporate image, because it portrays an image of a company that is receptive to the needs of society.

Creating an image of a corporation that respects the environment is very valuable not only for potential consumers, but also for other groups interested in the company's activity (such as employees, public bodies, potential investors, financial institutions and insurers) (Mera, 2003). Thus, customers usually want to partner with organizations that have declared their environmental responsibility, which leads companies to launch communication campaigns, widely publishing sustainability reports and cooperating with external sources to transparently communicate their efforts on an internal plan (Ottman, 2011).

▪ Combined communication strategy - this strategic alternative involves building the global image, acting simultaneously on a commercial and corporate level. To the extent that all brands and products in the portfolio are environmentally friendly, then shaping a corporate image with environmental implications supports the position of brands in the market and gives confidence in the green benefits guaranteed by the products. Conversely, green brands and products express a natural extension of green philosophy, assumed at an organizational level.

In this regard, some experts (D'Souza, et al., 2006) consider that consumers' perception of corporate strategies related to environmental issues is expected to contribute to the formation of the general perception on green products. Thus, the corporate social responsibility reputation, which responds to environmental concerns, can influence consumers' intention to buy green products. The results are confirmed by Chang and Fong (2010), who found that corporate image is an important criterion for assessing the quality of an unknown product.

B. *Depending on the role that the organization assigns to the communication activity*, the strategic alternatives may be the following (Hopfenbeck, 1993, cited in Vicente, et al., 1999; López, 1995; Vicente, et al., 1999):

▪ Defensive communication strategy - an alternative indicated when the organization tries to restore its damaged image as a result of an environmental incident or to build an image associated with social responsibility (in sectors of activity where production processes or products have a negative impact on the environment and there is no short-term technical possibility to avoid such effects). This is a strategic alternative specific to sectors of activity with a high-risk for the environment, the main objective being to create a climate of trust and improve relations with different categories of public.

▪ Offensive communication strategy - a suitable strategic alternative for companies trying to make environmental concerns an opportunity to create a long-term potential in order to ensure market success, but without directly opposing competitors. This strategy is specific to small or medium-sized companies that are trying to provide an appropriate response to those segments of consumers who want green products. It is also recommended for companies that are market leaders in the field of environmental protection, but not in terms of market share. Continuous improvement of the corporate and green image normally allows the company to maintain or improve its competitive position in the market without directly attacking competition, targeting unoccupied niche markets.

▪ Offensive comparative communication strategy - is recommended to leading companies both in terms of environmental involvement and market share. The comparative communication highlights the superiority of the company's products in relation to the offer of the competing companies. The favorable position of the company towards its competitors will allow it to exploit the advantages offered by the choice of a green brand positioning.

C. *By referring to the green product life-cycle*, the following strategic alternatives are noted (Mera, 2003; Lewandowska et al., 2017):

▪ Communication focused on the production phase - this strategic alternative involves information on a green aspect/attribute/ benefit that is added to the product during the production process (for example, non-OMG).

▪ Communication focused on the consumption/use phase - is based on the communication of a green benefit that the consumer benefits during the consumption/use of the product.

▪ Communication focused on the waste disposal phase - communication focuses on informing consumers about the possibilities of recycling, reuse, composting or disposal of waste generated by the consumption of the product.

▪ Communication without reference to the life-cycle of the product - involves highlighting the general green aspects of the company, which have no direct connection with the green quality of any stage of the life cycle of the product.

Lewandowska et al. (2017) considers that life cycle assessment for a green product is a good foundation for marketing campaigns.

D. *Depending on the desired change in consumer behavior*, communication strategies can be (Danciu, 2006, 2012; Ottman, 2011):

▪ Consumer education strategy - involves the company to make educational efforts in terms of environmental issues and the impact of individual behavior on the quality of the environment. Consumer education can be achieved through marketing messages that connect the attributes of green products with desired consumer value (Tiwari, et al., 2011). Educating consumers since early childhood is a good way to make them aware of the importance of product features and how they affect their health. Providing information from an early age determines consumers' diet and behavior towards the present and future environment (Popa and Dabija, 2019). Organizing competitions and visits of preschool and school children can be very useful in this regard (Atănasoiae, 2011).

▪ Empowered consumer strategy - involves demonstrating to consumers that certain ecologically healthy products can help them protect their lives and preserve the environment for future generations. Thus, this communication strategy supports the sustainable nature of green marketing (Danciu, 2012). Therefore, the consumer can make a difference, in this case, in terms of environmental protection, by purchasing and using that product. Thus, if consumers do not feel that they can make a difference by using a greener product, then they are likely not to make the purchase (Ottman, 2011).

▪ Consumer persuasion strategy - can be achieved in at least two directions. The first part of the communication strategy involves reassuring the performance of green products, in order to convince consumers that these products are good or even better than those with which society is familiar. This lack of confidence in new, environmentally friendly solutions can be a potential barrier to the purchasing process. The second strategic direction appeals to the personal interest of consumers by communicating the benefits of green products to both current and potential consumers. Consumers of green products are easier to convince and decide faster when they can make the connection between the environment and personal well-being. Those who buy such products must be rewarded for their altruism, showing them how environmentally healthy products help them protect their health, save money or keep their homes and communities safe and healthy (Danciu, 2006, 2012).

E. *Depending on the presentation of the message regarding the green attribute in a communication campaign*, we distinguish three strategic alternatives (Chamorro, 2003, Vicente, et al., 1999; Ellen, et al., 1991; Obermiller, 1995; Cox, 2008):

▪ Direct communication strategy (impersonal) - the advertiser is limited to indicating the green attribute of the product or company, so that each receiver interprets the green value of that attribute according to his knowledge and perceptions;

▪ Communication strategy such as "the baby is sick" - is the most common communication strategy in connection with social issues, such as environmental protection. It is a persuasion strategy that emphasizes the seriousness and severity of the environmental issue to which the message refers. This approach can increase attention and memorability on that environmental issue. The "the baby is sick" strategy works when the problem under consideration is not very serious or worrisome, while a boomerang effect can be produced if it is used when the level of concern is high.

▪ Communication strategy such as "the baby is well" - is a strategic alternative to the previous one, because while messages like "the baby is sick" act by increasing the level of concern for the environmental problem, messages like "the baby is well" lead to increasing the level of confidence that someone can do something to solve the problem. In the case of this alternative, the advertiser positively points out that the environmental problem to which it refers can be solved by consumer action. This approach is considered to be more compatible with communication in the field of green products, as the association between individual empowerment and the purchase of the green product is easy to achieve.

Communication strategies have the role of supporting the social, ecological and financial performance of the company (Elkington, 1997, cited in Royne, et al., 2016), also representing an important element in building a green position for a brand (Carlson, et al., 1996). Also, the development of effective communication strategies can stimulate and accelerate the process of behavior change, allowing consumers to move their concerns and attitudes more quickly towards making purchasing decisions oriented towards green products (Vicente, et al., 1999).

5. Conclusions

The variety of marketing communication options and media channels, but also their particularities in the context of green marketing, determines the complexity of the process of developing a communication strategy for a green product, brand or organization.

In literature, the following criteria were identified, based on which a series of strategic alternatives were grouped, namely: the coordinates of the desired global image and the objectives to be achieved, the role that the organization assigns to the communication activity, the specific stage of the green product life-cycle, the desired change in consumer behavior, and the way of presenting the message regarding the green attribute of the product. We note that the strategic alternatives presented emphasize the need to inform, involve, educate and convince the consumer about the arguments for choosing green products or the consequences of reduced orientation towards green consumption. Therefore, creative communication approaches, with a strong commercial character, have less importance for this product category.

The study and development of strategic alternatives for green communication is another necessary and essential step because they are marked by the current dimensions of the green product market in many national markets. Communication approaches have a central role in attracting consumers to green products and brands, therefore the elaboration of effective communication strategies contributes to market development.

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COMPARATIVE ANALYSIS OF VOCATIONAL TRAINING SYSTEMS IN THE LIGHT OF EU GUIDELINES

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Abstract: *Continuous development of education and training programmes in the European Union is a key factor in enhancing cooperation at European level. Today, economic and social changes are taking place in the world, which is why vocational training is seen as a tool to prepare people for a changing world of work, improving employability and competitiveness. Vocational education and training must adapt to changes affecting the economy, society and the labour market. Vocational education and training (VET) policy has been a national, autonomous area of the Member States for decades, but the issue of VET has increasingly been given priority in the process of European economic unification. At the Lisbon Summit, the European Council recognised the important role of education as an integral part of economic and social policies, which is an important tool for increasing the European Union's competitiveness. European cooperation in VET has been promoted by the three common European instruments created as a result of Copenhagen process: the European Qualifications Framework (EQF), the European Quality Assurance Reference Framework for Vocational Education and Training (EQAVET) and the European Credit System for Vocational Education and Training (ECVET), which are progressively integrated in their VET systems by the Member States. The aim of these instruments is to support recognition between European VET systems, to promote lifelong learning and mobility and to improve learning experiences. The aim of our study is to explore with a comparative study, to what extent and manner the V4 Member States (Czech Republic, Hungary, Poland, Slovakia) have integrated EQF, EQAVET and ECVET transparency instruments into their national vocational training systems and to what extent the transformations are in line with EU objectives.*

1. Generally Introduction or Background

Vocational education and training policy has been a national, autonomous area of the Member States for decades, but the issue of VET has been continually present from the outset and has been given increasing priority in the process of economic unification in Europe. The Lisbon Strategy of 2000 drew attention to the fact that the transition to a knowledge-based economy requires modern and adaptable vocational training, in which the quality of vocational education and training plays a key role (European Commission, 2019). This strategy formed the basis for the Copenhagen Declaration adopted in 2002, in which EU Member States adopted common priorities and strategies to promote European-level frameworks for the recognition of skills and qualifications, which can be achieved by developing and strengthening vocational training. (European Commission, 2018). The effectiveness of the Copenhagen process is reflected in the three common European instruments established between 2008 and 2009: the European Qualifications Framework

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(EQF), the European Quality Assurance Reference Framework for Vocational Education and Training (EQAVET) and the European Credit System for Vocational Education and Training (ECVET), which are also referred to as the instrument of transparency (The Bruges Communiqué, 2010). These tools provide an opportunity for the Member States to open up their VET systems to each other and recognise learners' learning outcomes acquired in different learning environments (Markowitsch, J., & Hefler, G., 2019). The common feature of the three instruments is that the principle of learning outcomes is applied in the process of education, assessment and recognition in the VET system (European Commission, 2019). The learning outcome is a description of competence that defines the output requirements that can be achieved through learning in the field of knowledge, ability and responsibility (Balla et al, 2020). The introduction and application of the interconnected instruments in a coordinated manner will promote qualifications based on learning outcomes to meet labour market needs more effective as well as better transparency, transferability, recognition of qualifications and European mobility (Balla et al, 2020).

2. Applied methods

The aim of our study is to provide a comparative analysis of the national VET systems of the four countries in terms of the use of transparency instruments. As a research method, we have chosen content analysis, which is suitable for making causation and comparative analyses. The documents of the European Parliament and the Council related to vocational training, the Official Journal of the European Union and the publicly available country evaluation studies of the European Commission and the European Centre for Vocational Training and Development (CEDEFOP) have been considered as documents. As a research analysis, the appearance of the EQF, EQAET and ECVET tools and their country-specific elements were identified. We examined the appearance of the instruments in four Member States of the European Union so-called Visegrad Fours (V4 – Czech Republic, Hungary, Poland, Slovakia).

3. Reflection of the EU VET policy in national reforms in the Visegrad Four countries

In this article, we present a comparative analysis of the VET systems of four neighbouring countries – the Czech Republic, Hungary, Poland and Slovakia – with the European VET policy in the light of EQF, EQAVET and ECVET, which started from a very similar point due to the common historical past. Analysing the starting point for all four countries, vocational education was carried out within the framework of a centrally planned market economy until 1989. Until 1989, VET schools were managed in cooperation with companies, where students' participation was very high. (Dębowski, H., & Stęchły, W. 2015). The collapse of the Soviet system led to social, political and economic changes affecting VET and its system (Wiśniewski & Zahorska, 2020). During the economic transition, a number of state-owned companies operating vocational schools have ceased to exist. The pupils opted for general secondary education as opposed to vocational education due to the apparent lack of prospects of vocational training (Szulc, W., et al, 2019). These two factors combined led to a decrease in the popularity of VET (Markowitsch, J., & Hefler, G. 2019) and a weakening of the link between VET and labour market needs (Chłoń-Domińczak et al, 2012). Since the late 2000s, the significance of vocational education and training and the creation of an attractive vocational education offer to young people have become national priorities (Dębowski, H., & Stęchły, W. 2015). The accession of the Czech Republic, Hungary, Poland and Slovakia to the European Union on 1 May 2004 had a major impact on national vocational education and training systems. The issue of VET has also been given increasing

priority in the EU and has been translated into educational policy, guidelines and recommendations. As members of the European Union, the four countries examined have progressively adopted these guidelines and recommendations into their national vocational training systems (Dębowski, H., & Stęchły, W., 2015).

The four countries analysed faced a number of challenges of integrating the EQF, EQAVET and ECVET instruments into their national VET systems. The main task of the decision-makers of the countries was to define and create the necessary conditions for the integration of the instruments by creating the right legislative environment that ensures the future application of the instruments at national, regional, local and sectoral levels. The establishment of an adequate institutional infrastructure to ensure the integration of instruments, while preserving national specificities, can be considered a major challenge for countries. New reforms and programmes may also entail a change in the roles and responsibilities of the stakeholders. VET professionals, policy makers, social partners, researchers, heads of educational institutions, businesses and sectoral organisations have a significant role to play in preparing education and training systems for the implementation and use of tools. A high degree of stakeholder commitment and adaptability is also needed in order to integrate the instruments successfully.

In the following we will examine below the extent and manner to which the four countries have integrated the EQF, EQAVET and ECVET instruments into their VET systems, in line with the EU guidelines, in order to contribute to the Copenhagen objectives.

3.1. The vocational education and training system in the light of the EQF

One of the major objectives of the European Union is to contribute to the modernisation of education and training systems, to increase the social integration, mobility and employability of learners and workers (de Paor, C., 2018). As a means of achieving this objective, the European Council established the European Qualifications Framework (EQF), which serves as a referencing tool between the different qualifications systems and levels of the Member States (Bohlinger, 2019). The EQF aims to improve the transparency, comparability and mobility of qualifications acquired by individuals (Council of the EU, 2017). The EQF includes all attainable levels of education from primary to the highest education such as: all levels of generally acquired qualifications, vocational training and university education, as well as qualifications which can be obtained in initial and continuing training. The structure and content of European education and training systems are complex and diverse. For qualifications to be comparable across countries, the EQF framework considers it necessary to move on to learning outcomes, characterised by descriptors of knowledge, skills and competence (Farkas, 2013). The new framework refers to learning outcomes as meaning what a learner knows, understands and is able to do after completing the learning process by obtaining a qualification, so classification in the EQF framework does not take into account the duration of the training (Farkas, 2013). Each country has allocated its training programmes to EQF levels according to the level of learning outcomes that can be obtained during the training programme. This makes it possible to take into account the specificities of national vocational training systems (Derényi, 2019). The vocational education and training systems of the four countries we examined include the following levels in line with the EQF (Cedefop, 2019a; 2019b; 2019c; 2019d):

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Table 1: Countries' VET systems according to the EQF

	The Czech Republic	**Poland**	**Hungary**	**Slovakia**
EQF 1	Nursery school	Nursery school	Nursery school	Nursery school
EQF 2	-Lower secondary progr. -Progr. for SEN learners	-Lower secondary progr. -Work preparation classes for SEN learners -Special job training progr. for SENlearners	-Lower secondary progr. -Lower secondary progr. for SEN learners -Bridging progr.	-Lower secondary progr. -Bridging progr. -Lower sec.progr. -Performing arts progr. -VET progr. for SEN learners
EQF 3	-School-based VET	-First stage sectoral progr.	-Practice oriented VET progr.	-School-based progr. -Practiceoriented upper secondary VET progr.
EQF 4	-Technical and lyceum progr. -General progr. -Follow-up progr. -Performing arts progr.	-General progr. -Second stage sectoral progr. -Vocational upper secondary progr.	-Upper secondary progr. -School-based theory-focused VET progr. -Follow-up progr.	-School-based progr. -Upper secondary progr. -Performing arts progr. -Progr. leading to a 2nd VET qualification
EQF 5	-Performing arts progr.	-Post-secondary school-based progr. -College progr.	-Higher education VET progr. -School based practice progr	-Higher professional progr. -Specialising progr. -Performing arts progr.
EQF 6-8	Academic higher education	Academic higher education	Academic higher education	Academic higher education

Source: Own editing based on Cedefop's 2019 data

Assessing Table 1, it can be stated that the Czech, Hungarian, Polish and Slovak national qualification frameworks follow the level structure of the EQF, namely each has got eight levels. Analysing the basic system of VET in all four countries, formal VET leads to four levels of qualification (EQF 2-5) at national level, which are the same as those set out in the European Qualifications Framework (EQF). By using the EQF as a European transparency tool in the development of the national VET system, the Czech Republic, Hungary, Poland and Slovakia support the promotion of transnational mobility (The Bruges Communiqué, 2010; Chłoń-Domińczak A. et al, 2019; Cedefop, 2019a; 2019b; 2019c; 2019d).

3.2. The vocational education and training system in the light of the EQAVET

The Recommendation on a European Quality Assurance Reference Framework for Vocational Education and Training (EQAVET) was adopted in 2009 with the aim of improving and increasing the quality of vocational education and training (European Parliament and Council, 2009). The EQAVET framework provides significant assistance to Member States in documenting, developing, monitoring, evaluating and improving quality management practices (Farkas, 2013). The Recommendation does not require Member States to apply a specific quality assurance system, but sets out indicators and descriptors (European Commission, 2019).
The EQAVET recommendation contains the following two technical elements:

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- A quality cycle, which forms the basis of evaluation for the providers and VET system-level in the evaluation process.
- Indicators and descriptors, which define indicative descriptors and quality criteria at provider-level and system-level (European Commission, 2019).

These elements can also be used for self-evaluation and external evaluation. It can be used in accordance with national legislation and practices, so it is up to the Member States to decide which indicators to be used in the evaluation process (Farkas, 2013). Out of the four countries we examined, Poland has set up its national quality assurance system for its VET system in accordance with the EQAVET framework. In Hungary the national quality assurance system for VET will be set up according to the EQAVET framework by 2022. Analysing the case of the Czech Republic, it can be concluded that its national quality assurance system has been developed independently of the EQAVET system, but it is aligned with the EQAVET quality cycle, indicators and descriptors. Similarly to the Czech Republic, Slovakia has developed a national quality assurance system, which is not aligned with the quality cycle but it is relevant to indicators and descriptors (European Commission, 2019). The Table 2 below compares the quality assurance measures of VET systems of the four countries examined at provider-level and system-level (Cedefop, 2019a; 2019b; 2019c; 2019d).

Table 2: Quality assurance measures in the countries' VET systems

	Quality assurance measure at provider-level	**Quality assurance measure at system-level**
The Czech Republic	Self-evaluation *-for IVET and CVET up to 2011 annually*	External evaluation *-for IVET and CVET annually*
Poland	Internal evaluation *-for IVET annually*	External evaluation *-for IVET and CVET annually*
Hungary	Self-evaluation *-for IVET every two years* Trainer's evaluation *every three years*	External evaluation *-for IVET and CVET* *every four years*
Slovakia	The school development strategy is issued annually by the head of the institution and its assessment must be presented to the school council	External evaluation *-for IVET annually*

Source: Own editing based on Cedefop's 2019 data

Analysing the four examined countries' quality assurance measures at provider-and system-level, it can be stated that the quality assurance measures of the Czech Republic, Poland and Hungary are very similar. The quality assurance systems of all three countries require self-evaluation to be carried out only for IVET institutions, but external evaluation is required for both IVET and CVET institutions. However, there is a significant difference in the frequency of carrying out evaluations. While the Czech Republic and Poland carry out evaluation at provider-and system-level annually, Hungary carries out self-evaluation every two years and external evaluation every four years. We consider it important to emphasize that Hungary also introduces trainer's evaluation at provider-level, during which the salaries of trainers may vary from one person to another according to their performance. In the case of Slovakia, the national quality assurance system requires external evaluation to be carried out only for IVET institutions it does not require it for CVET institutions. With regard to quality assurance measures at provider-level, it can be concluded that this completely differs from the other three countries examined. Self-evaluation is not considered necessary, but rather a school development strategy is defined and evaluated (European Commission, 2019).

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3.3. The vocational education and training system in the light of the ECVET

The development and recognition of people's knowledge, skills and competences play a significant role in the competitiveness of the European Union and for employment. In 2004, the Council issued a recommendation giving high priority to the development and implementation of the European Credit System for VET, along the line with the European Credit Transfer System for Higher Education (ECTS) (Balla et al., 2020). As a result, the Recommendation on the European Credit System for VET (ECVET) was adopted in 2009 to facilitate the recognition and transfer of learning outcomes achieved by the applicant through different educational and learning pathways between vocational education institutions of the Member States throughout Europe (European Parliament and Council, 2009). ECVET is a technical framework for the transfer, recognition and accumulation of learners' learning outcomes for the purpose of obtaining a qualification (Dębowski, H., & Stęchły, W., 2015). ECVET applies a modular approach to VET, meaning that subjects are described using units of learning outcomes, taking into account national and sectoral specifications (de Paor, C., 2018; European Commission, 2019).

The ECVET tools and methodology include the following elements:

1. Units of learning outcomes: The requirements for qualifications are expressed as learning outcomes which are defined in terms of knowledge, skills and competence. Learning outcomes are divided into learning units that receive ECVET points. A qualification comprises several unit and the qualification consists of the total number of units (Antonazzo, 2020).

2. Transfer and accumulation of learning outcomes, ECVET-partnerships: the credit system allows the accumulation, validation and recognition of learning outcomes gained in formal, non-formal or informal settings and transfer them from one institution to another (Poczmańska, A., & Stęchły, W., 2020). Within the framework of ECVET partnerships, two or more cooperating institutions conclude a memorandum of understanding setting out the legal and procedural framework for the transfer of learning outcomes.

3. Learning agreement and personal transcript: it promotes international and national learner mobility between VET institutions, with the aim of recognizing learning outcomes achieved during mobility without prolonging the course (Le Mouillour, 2012). The following two agreements are used for mobility:

- Learning Agreement (LA): an agreement between the cooperating VET institutions and the learner specifying the learning outcomes and units to be achieved by the learner during the mobility period.

- Personal Transcript: it comprises the learners' evaluated learning outcomes, units and ECVET points (Európai Parlament és Tanács, 2009; Balla et al, 2013; Balla et al, 2020; Dębowski, H., & Stęchły, W., 2015). The introduction of ECVET is based on voluntary decisions by Member States. The ECVET Recommendation provides a general framework for Member States, which means that ECVET can be adapted to their national VET systems in many ways. Since there is no specific way of implementing ECVET, there are significantly different cases of introducing ECVET into the national VET between Member States (Farkas, 2013).

Table 3 below summarises the scope of implementation of ECVET instruments and principles in the four countries examined (European Commission 2019).

Table 3: Scope of implementation of the ECVET principles in the four countries

	The Czech Republik	Poland	Hungary	Slovakia
1. Units of learning outcomes	Qualifications based on learning outcomes	Qualifications based on learning outcomes	Qualifications based on learning outcomes	Qualifications based on subjects
2. Transfer, accumulation of learning outcomes, ECVET-partnerships	Credits used in certain qualifications	Credit system in place, but not applied	No credit system	No credit system
3.Learning Agreement and Personal Transcript	Widely used	Applied but not national priority	Widely used	Widely used

Source: Own editing based on Cedefop's 2019 data

Analyzing the table above, it can be stated that ECVET instruments are used in some form by all four countries, although in different extent. As regards units of learning outcomes, it can be noted that the Czech Republic, Poland and Hungary describe qualifications in their learning outcomes and units. In Slovakia, the description of qualifications is still based on subjects, but the introduction of a philosophy of learning outcomes is supported. This is reflected in the fact that some schools are already working with learning outcomes and units when finalising curricula, as schools are autonomous in finalising curricula. The credit system for the transfer and accumulation of learning outcomes has only been fully developed by Poland, but it is not applied. The Czech Republic already uses credits in some qualifications, but plans to develop the credit system. In Hungary and Slovakia, the credit system proposed by ECVET has not been developed. However, for all four countries, it should be noted that it is possible to transfer, collect and accumulate learning outcomes acquired in different non-formal and informal settings, but this is done specifically at national level according to their training system characteristics. As regards the Learning Agreement and Personal Transcript, it is clear from the table that three of the four countries use the documents widely in learner mobility. According to a Cedefop's 2019 study, in the Czech Republic, Hungary and Slovakia ECVET is used primarily for international mobility, in which they promote quality, cooperation and improve the recognition of learning outcomes achieved abroad. In Poland, international mobility is not a national priority but has shown increasing interest in its development (Cedefop, 2019a; 2019b; 2019c; 2019d).

4. In conclusion

In the European Union, the issue of VET has increasingly been given priority in the process of economic unification. An active, coherent EU VET policy can only be referred to the Lisbon Strategy of 2000. The Copenhagen process of 2002 has already emphasised the development of a system that supports the recognition of professional qualifications between Member States. The success of the Copenhagen process is reflected in the three common European transparency instruments: EQF, EQAVET and ECVET established between 2008 and 2009, the common objective of which is the recognition, transparency of qualifications between education systems in Europe, and the promotion of lifelong learning and mobility. The aim of our study was to explore what extent and manner The Czech Republic, Poland, Hungary and Slovakia have integrated these instruments into their VET systems. In the four countries examined, formal vocational education and training leads to four qualification levels at national level, which have been developed in accordance with the EQF guidelines. This ensures the transparency of vocational qualifications and mobility, as the same levels

are applied to the classification of professional qualifications. The national quality assurance system of the VET system of Poland and Hungary has been developed in accordance with the EQAVET framework, while the quality assurance system of the Czech Republic and Slovakia has been developed independently of the EQAVET system, but is aligned with the principles of EQAVET. There were many similarities between the Czech, Polish and Hungarian quality assurance measures, although there was a significant difference in the frequency of carrying out evaluations. Slovakia's institutional quality assurance measure differs from those of the other three countries, as they develop and evaluate a school development strategy instead of self-assessment. Out of the three instruments, the ECVET credit system recommendations have only been partially implemented in the Czech Republic, Hungary and Slovakia. In the case of Poland only, it can be stated that the ECVET tool and methodology have been fully integrated into the national VET system, although the credit system has been developed but is not used. One reason for this may be the lack of a single credit point calculation system, which may make it difficult or hindering the transfer and recognition of learning outcomes acquired during the learning process between Member States. Instead, ECVET is seen as a mobility tool by the countries analysed, with which they successfully contribute to the development of mobility. The Czech Republic, Poland and Hungary describe vocational qualifications on the basis of learning outcomes, which are essential for achieving the objective of the three instruments. In Slovakia, vocational qualifications are still subject-based, but some schools have already adopted the learning outcomes-based approach. Overall, the four countries examined have made significant progress in integrating the EQF, EQAVET and ECVET instruments into their national VET systems, thereby contributing to the achievement of the Copenhagen targets.

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