

Challenges of COVID-19 Pandemics

for Economics and Business Administration

*Conference proceedings of the XIIth International Conference
Globalisation and Higher Education
in Economics and Business Administration*

GEBA 2020

Cristina-Teodora Roman
Constantin-Marius Apostoaie
Mircea Asandului
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(editors)

EDITURA UNIVERSITĂȚII „ALEXANDRU IOAN CUZA” DIN IAȘI

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RELEVANCE OF THE REGULATORY FRAMEWORK IN ENSURING THE SUSTAINABILITY OF THE INSURANCE MARKET

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ABSTRACT

The imperative of monitoring the insurance sector is based on the essential role of insurance companies in supporting economic activity, being a solid mechanism that contributes to the sustainability and growth of the national economy. Only few people and entities can effectively protect their property and other economic rights without relying on insurance. Insurance companies represent, also, important institutional investors, playing a key role in financing the real economy by investing in bonds, stocks and other assets. The main purpose of this article is to highlight the importance of the regulatory framework which undergoes a continuous metamorphosis, in order to ensure the stability and sustainability of the insurance market by managing and mitigating the specific risks of the case in question, in terms of compliance-based supervision.

Keywords: insurance; regulatory framework; insurance market; reserves; solvency; sustainability.

JEL Classification: G22

1. HIGHLIGHTS OF THE SUSTAINABILITY OF THE INSURANCE SECTOR

The paradigm of the importance of the stability of the insurance sector is represented by the financial crisis of 2007-2008, also known as the global financial crisis, being the worst economic crisis since the Great Depression of the 1930s. Insurance companies are major investors and usually have longer-term investments than other financial institutions such as banks. Thus, insurers help the system withstand the short-term shocks. Moreover, insurance companies continued to subscribe insurance contracts for a variety of areas, thus ensuring not only the continuity of economic activity during the crisis, but also the generation of income that was at least partially reinvested in financial assets, stabilizing their price on the stock exchange (Havemann, 2010).

Although the crisis began with the depreciation of the mortgage market in the United States and developed into an international banking crisis, a trigger and expansion factor was identified as the fundamental change in the business model of banks, which no longer held the granted loans on the assets accounts of the balance sheet until maturity, finding alternative methods of distributing credit risk to other financial institutions, in the form of innovative financial instruments, which allowed to attract additional risk by banks already with a risky portfolio of substandard loans accumulated due to diminish of the interest rates interest on overnight loans and increasing the lending capacity of banks. An eloquent example of such financial instruments is the practice of securitization, in which banks pooled hundreds or even thousands of mortgages and other less risky forms of consumer loans and sold them on the capital markets in the form of bonds (MBS – Mortgage-backed securities) to other banks and investors, including pension funds and insurers. Bonds consisting mainly of mortgages became known as mortgage-backed securities, which gave their buyers the right to a share of the interest and the body of the loan. For banks and investors, this practice has been seen as a good way to diversify their portfolios and revenues, as real estate prices have been on an upward trend. The situation was exacerbated by the huge losses incurred by the American International Group (the largest insurance company in the United States), as a result of sales of derivatives (credit default swaps) which essentially represented financial contracts that protected holders of various debt instruments, including MBS (mortgage-backed securities), in case of non-payment of the underlying loans and were not regulated by requirements of the regulatory framework. Thus, the inadequate risk assessment of insurance companies for new products has resulted in the aggravation of the situation created on the global financial market and the subsequent implementation of the Solvency II regime.

The complexity of the contract, the degree of sophistication of insurance products and the mass consumption of insurance products justify the need for a proper conduct of market players for the benefit of insured persons and represent the basis of state intervention in the form of supervision and regulation of insurance companies. A key requirement for effective regulation and supervision is the authority's ability to collect and analyze data from the insurance market.

Based on the organization of the regulatory framework and the approach to supervision, several models of financial market regulation are applied (Abramov *et al.*, 2014):

- Twin Peaks, first adopted in Australia two decades ago, the name of the model referring to two peak regulating authorities it creates. The first peak, in terms of the system stability regulator, is only responsible for drawing up and enforcing prudential regulations designed to prevent the financial crisis. The second peak is responsible for discouraging misconduct and ensuring consumers' rights to financial products and services. As a result, this model

creates clear and unambiguous objectives, which are separated between the two peaks. This is a basic feature of Twin Peaks: a model that recognizes that the two peaks may have conflicting objectives and then creates the peaks as separate, but equal. Examples of countries that have applied the Twin Peaks model are the United States, Australia (1998), the United Kingdom (2013), etc.

- Mega regulator implies the existence of a central public authority that regulates all segments of the financial market. Such a model was chosen by the following countries: Singapore (1971), Sweden (1991), Japan (1998), Germany (2002), France (2003), the Republic of Moldova (2007), Romania (2013), the Russian Federation (2013), etc.
- The mixed (hybrid) method, which involves the existence of a regulatory body for several (but not all) sectors of the financial market and specialized functional bodies, such as the Agency for the Protection of Consumer Rights (Hîncu *et al.*, 2011).

From the point of view of the suitability of an institutional regulatory authority for an economy, the following parameters must be taken into account:

- The size of the financial market;
- The degree of integration of financial market sectors and risk transfers among sectors;
- The degree of openness of the national financial market.

In order to maintain the macroeconomic stability and achieve a sustainable growth, most countries focus on protecting financial stability. Shared supervision may raise doubts about the ability of the financial market supervisory authority to form an overall risk assessment. In addition, different regulators may establish different regulations for the same field of activity for different participants.

The unified approach creates the necessary prerequisites for the development of more flexible regulatory arrangements. However, conflicts, such as jurisdiction related ones, may arise. The unified supervision could lead to economies of scale due to greater specialization of employees, common infrastructure, administration, support systems and more efficient use of resources that would reduce costs and expenses. In addition, the merger of authorities would favor the management of information technologies in a cost-effective way and can avoid unnecessary duplication of research and reduce the efforts required to collect information. And the last, but not the least important argument in favor of unification is that it increases the responsibility of regulation. However, given the diversity of objectives – from the commitment to avoid systemic risk to the protection of participants' rights – an author of an individual regulation may not be able to focus on the objectives and principles of regulation and may not be able to assume commitment of functions based on the typology of the participant. Bureaucracy represents another issue related to monopolistic institutional supervision. Another important aspect is also called the Christmas tree effect, due

to the multiple and diverse tasks undertaken on different segments, each with its own specificity by the same authority, which can lead to overload of tasks and functions. Moreover, in the process of transition between regulatory models, an opportunity for stakeholders to exploit the process would be generated. The last two decades have witnessed a growing trend of jurisdictions adopting the financial regulation model of "mega regulator", such as the Netherlands, Belgium, New Zealand, the Russian Federation (Abrams and Taylor, 2014), etc.

In the Republic of Moldova, the regulation of the insurance market is implemented by the National Commission for Financial Markets (NCFM). The NCFM is an autonomous public authority that reports to the Parliament, which regulates and authorizes the activity of professional participants on the non-banking financial market and supervises in accordance with the legislation in force. The basic objectives of the NCFM are: to improve the stability, security, transparency and efficiency of the non-banking financial sector, to reduce systemic risks and to prevent manipulation in order to protect the rights of participants.

2. THE NORMATIVE FRAMEWORK FOR REGULATING THE ACTIVITY OF INSURERS IN THE REPUBLIC OF MOLDOVA

The normative framework in the Republic of Moldova that regulates the activity of insurers is composed of organic laws and laws and regulations developed by NCFM (National Commission for Financial Markets). Thus, the prudential norms can be classified according to risks: a) of liquidity and solvency; b) investment; c) subscription in terms of technical reserves; d) reputational; e) reinsurance; f) decisional and operational. The legislation in force is subject to continuous amendments promoted by the partnerships and technical assistance projects that the Republic of Moldova benefit of, at the same time, being in the process of harmonization related to the Moldova-EU Association Agreement (ratified by Law no. 112/2014), according to which the provisions of Directive 2009/138 / EC of the European Parliament and of the Council of November 25, 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II) are to be implemented within seven years of the date of entry into force of the Agreement (September 2021). The Solvency II Directive consolidates the provisions of a number of 14 directives and is structured on pillars, as follows:

- Pillar I refers to the quantitative aspects of the activity of an insurance and / or reinsurance company; the Minimum Capital Requirement (MCR), the Solvency Capital Requirement (SCR), the calculation and assessment of assets and liabilities;
- Pillar II refers to the qualitative requirements of the activity (the obligation to establish a governance system of the company, which should include four mandatory functions: risk management, actuarial, internal control and internal audit; the management of the company is responsible for ensuring

observance of the principles of the governance system and of the policies developed for its application in the daily activity of the company);

- Pillar III refers to the requirements for reporting and disseminating information to the supervisor and third parties.

The solvency principles stipulate that the determination of an insurer's available and necessary capital for solvency purposes must be based on all its assets and liabilities, measured in the balance sheet according to the regulatory requirements in insurance, and based on the way how they interact.

In accordance with Solvency II, insurers apply the risk-based approach, assets being valued at the value at which they could be traded between interested parties in transactions conducted under objective conditions. Liabilities are valued at the amount that could be settled between the parties or transferred, voluntarily, knowingly and under normal conditions of competition. Usually, their value is equal to the discounted cash flows, plus the risk margins. The factors that influence their liquidity are: existence of a marketable market, predictability of cash flows, duration of insurance policies, positioning and the competitive environment. Some of the assets and liabilities from the insurer's balance sheet, other than technical provisions, have specific recognition and measurement requirements than those set out in IFRS present in the Solvency II Directive (Verejan and Caldare, 2018).

The norms addressing the liquidity and solvency risk are set out in the NCFM Decision no. 2/1/2011 regarding the approval of the Regulation on the solvency margins and the liquidity ratio of the insurers (reinsurers). According to point 12 of the regulation, the insurer's solvency ratio must be equal at least with 100% (below which it is considered incapable of meeting its debts as they become eligible), and point 25 states that the insurer is required to maintain a liquidity ratio of at least 1,0 at all times.

The mentioned Regulation also covers the investment risk by restricting assets admitted to cover technical reserves and the minimum solvency margin, including by ensuring the diversification of investment objects, according to the Report on the value of the assets of the insurer (reinsurer)/ insurance company and reducing the losses resulting from the high level of concentration, as follows:

1) securities issued by the Government of the Republic of Moldova (State Securities) or by another state authority;

2) securities issued by central banks, governments of other states, which according to international rating agencies, as well as international financial bodies, have a rating of at least BBB or a similar one;

3) shares and bonds of issuers admitted on the regulated market and within the multilateral trading system, the latter being obliged to comply with the following conditions:

- a) to have equity of at least 5 million lei according to the last management period;

- b) the number of traded shares to represent at least 1% of the total number of shares representing the issuer's share capital in the last 12 months prior to the reporting date.
- 4) securities issued by legal entities operating in the Republic of Moldova and which are not traded on a regulated market or within the multilateral trading system;
- 5) cashier under restricted control by the insurer;
- 6) monetary funds in current settlement accounts, deposits, in financial institutions licensed by the National Bank of Moldova;
- 7) real estate (admitted in proportion of 80% of the balance sheet value, real estate for agricultural use and out-of-town buildings - 50% of the balance sheet value), which are registered in the real estate register and bring or will bring economic benefits;
- 8) receivables, not older than 60 days from the due date, related to the subscribed premiums;
- 9) receivables related to insurance premiums, not older than 180 days from the due date, subsidized by the state to insure production risks in agriculture and fisheries;
- 10) the reinsurer's share in the technical insurance reserves.

By art. 32 of Law no. 407/2006 on insurance, restrictions are established regarding the execution of transactions by the insurer, which is constrained not to invest more than 15% of the equity in the share capital of a company without the prior approval of supervisory authority, transactions in proportion to its assets being carried out with the written approval of the authority. At the same time, the insurer is prohibited from: a) participating in the share capital of legal entities with one of the legal forms of organization of a general partnership or limited partnership; b) contracting loans in an amount exceeding 10% of the value of the share capital without the written approval of the supervisory authority.

In the decision-making process on investments made by the insurance company, multiple rules regarding the dispersion of assets both for the insured fund and in total must be taken into account. For example, investments in securities issued by the Government of the Republic of Moldova are restricted within the amount between the technical reserves without the reinsurer's share and the minimum solvency margin, due to the reasoning that the asset in question would be at a risk-free rate. The maximum allowed limits of investments made in other assets from the NCFM Decision no. 2/1/2011 are indicated in point 16, being determined not only as a total percentage of the amount between technical reserves without the reinsurer's share and the minimum solvency margin, but taking into account the risk of concentrating investments in the same financial institution/ real estate/ securities, etc. In order to ensure eligibility and liquidity, assets admitted to cover insurance technical reserves, except for the reinsurer's share in technical reserves and the minimum solvency margin, may not serve as collateral, as a

source of payment for bank guarantees or to cover other obligations to creditors, and may not be burdened by other burdens. The Solvency Margin notion appears in 1952 and is defined as a depreciation in the assets of the company with which it covers its obligations and is determined as the maximum of margins obtained by two calculation methods: the premium-based method and the claims-based method. In 2002, the European regulatory framework on solvency was updated after 30 years, by two European directives merged under the name of Solvency I. The Directive lists a number of shortcomings such as the simplicity of the formulas for calculating the required capital without taking into account the portfolio of assumed risks, non-recognition of diversity, of exposure at the level of groups, as well as lack of decision-making transparency. In order to eliminate the found defects, insurers, in the process of starting the development of Solvency II, pointed out that the new directive must make a correlation between regulated capital requirements and subscribed risks and achieve an optimal allocation of capital including by assessing balance sheet items close to their economic value.

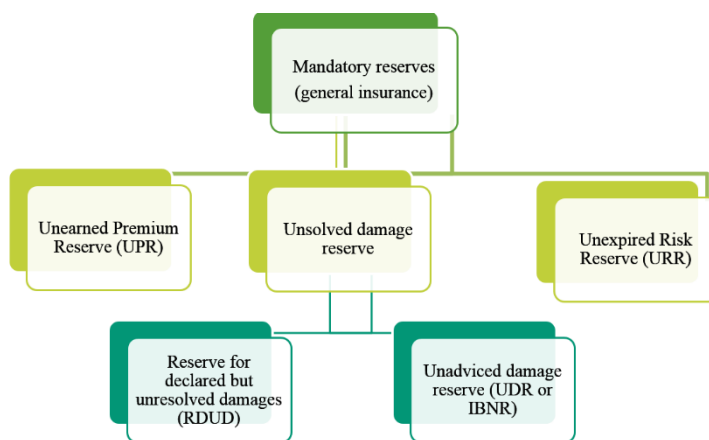
The financial stability of the insurer is guaranteed by art. 30 of Law no. 407/2006 on insurance: a) the level of equity; b) the totality of the assets and their degree of diversification and liquidity; c) technical and mathematical reserves; d) the correlation between the insurance obligations and the obligations assigned in reinsurance; e) the efficiency of the investment policy.

The level of the share capital, component of the equity, is pre-established by art. 22 of Law no. 407/2006, being equivalent to 15 million lei, to which the coefficient 1 for general insurance activity is applied, the coefficient 1.5 - for life insurance activity and external compulsory motor third party liability insurance (Green Card), coefficient 2 for exclusive reinsurance activity. Contributions to the share capital are deposited in full in cash, both at establishment and increase, and the means obtained from loans, bank loans, collateral or other attracted funds, including from advances from professional participants in the insurance market and third parties, may not serve as a source of formation or increase of the share capital of an insurer.

The formation of reserves represents an essential element of the insurance activity. According to the NCFM Decision no. 1/5/2011 on the technical insurance reserves, the insurer forms and maintains sufficient technical reserves, the value of which must allow him, at any time, to honor his obligations resulting from the insurance contracts. The calculation of technical reserves is performed prudently, reliably and objectively, based on the underwriting risk, according to the realistic approach.

In cases where the insurance contract provides for the collection of premiums and the payment of indemnities in foreign currency, the related technical reserves are established and maintained in foreign currency, the calculation of the premium reserve is made in the currency in which the insurance contract was concluded and the calculation of the damage reserve is performed in the currency in which the

compensation is to be paid. Technical reserves in foreign currency are recognized and recorded in the accounting in Moldovan lei, at the official exchange rate of the Moldovan leu valid at the date of calculation of reserves. In case of carrying out the general insurance activity, the company forms the reserves according to Figure 1.



Source: developed by the author based on the NCFM decision no. 1/5 of 11.01.2011 on the approval of the Regulation on insurance technical reserves

Figure 1. Types of technical reserves related to the general insurance activity

Insurers earn the premium paid for an insurance policy during the entire life of the policy. The unearned premium is proportional to the unexpired part of the insurance and appears as a debt in the insurer's balance sheet in the form of the unearned premium reserve (UPR), as they would be reimbursed upon cancellation of the policy, while also representing future cash flows. The insufficiency of this reserve results in the establishment of the unexpired risk reserve (URR) which is constituted for the future damages and expenses related to the active portfolio of the insurer assessed at the same date and for the same insurance classes as UPR.

The declared but unsolved damage reserve represents funds reserved for the future payment of the damages incurred that have not yet been settled. The unadvised damage reserve is an actuarial estimate, as the amounts due for any potential damage are not known until approval. A damage reserve is a provision that is recorded as a liability in the company's balance sheet. These are classified as liabilities because they are potential financial obligations to policyholders. The declared but unsolved damage reserve is adjusted over time as each case develops, and new information is taken over during the claim settlement process. The total amount of funds allocated for a damage is the sum of the amount expected for settlement and any other expenses incurred by the insurer during the settlement process, such as fees for damage administrators, legal assistance, expertise, etc.

For prudential purposes, the actuary shall perform quarterly and submit to the Supervisory Authority, together with the specialized reports, the results of the technical adequacy tests (LAT test for premium reserves based on updated estimates of future cash flows and the Run-off test for damage reserves carried out based on previous experiences). If, as a result of the adequacy tests, a systematic negative difference from previous experience is identified, the insurer shall make the necessary adjustments to the methods of calculating the used reserves, informing the Supervisory Authority and supplement the recorded deficit and if an insufficiency of technical reserves is identified, the actuary calculates an additional reserve of unexpired risks, respectively, an additional mathematical reserve. The results of the tests of adequacy of the technical reserves are reflected, including in the Actuarial report of the insurer, but in this report, the actuary is exposing also on the results of the sensitivity analysis of the technical reserves (stress test) performed on insurance products/ classes, by revealing the established hypotheses and scenarios regarding the behavior/ variation of some indicators used in the calculation of technical reserves. Such sensitivity scenarios are also performed on vital indicators such as solvency ratio and liquidity ratio, depending on the results of the analysis of the quality of assets that the insurer uses to cover technical reserves, their degree of diversification, return on investment, information on assessment of assets, the valuation methods applied or, in the conditions of the valuations performed by an appraiser, information about the appraiser is presented. A global phenomenon, which has exacerbated the financial crisis of 2008, is the gap between the maturity of assets and liabilities, which is why it is imperative important the outcome of the maturity of future cash flows from assets covering technical provisions in comparison with the maturities related to the future flows of execution of the obligations related to the technical reserves.

The insurer that carries out activity in the “life insurance” category has the obligation to establish and maintain the following technical reserves: 1) Mathematical reserve; 2) Additional mathematical reserve; 3) Reserve for additional benefits. The reserves are calculated in accordance with own internal regulations on the establishment and maintenance of technical reserves, approved by the executive body of the insurer and validated by signature of its actuary.

Reputational risk is addressed by the NCFM Decision no. 67/10/2015 on the approval of the Corporate Governance Code, whose main objectives are to create an effective system to ensure the security of funds offered by shareholders and their efficient use, reducing risks that investors are not able to anticipate and/ or do not want to accept them and whose long-term management by investors reduces the investment attractiveness of the company and the value of its shares.

Requirements regarding the decisional and operational transparency are also exposed in the Law on accounting and financial reporting no. 287/2017, under the incidence of which the entities of public interest also fall. Art.23 of the law states

that the entities of public interest related to the development, present annually, the management report – an analysis of the position of the entity, the development and performance of its activities in accordance with the size and complexity of its activity. At the same time, the requirements for the content of this report are indicated, in particular the inclusion of the main risks and uncertainties faced by the entity, the internal control systems and how these risks are managed, development prospects, degree of compliance with provisions from its own corporate governance code drafted in accordance with the legislation. Moreover, if the use of financial instruments represents a significant part of the assessment of the economic and financial position, the objectives and policies in financial risk management for which hedging methods are used will be taken into account, and the degree of exposure of the entity to liquidity risk and cash flow risk, price risk and credit risk will be assessed. These hedging methods will comply with IFRS 9 (Financial Instruments), which was developed following the 2008 financial crisis, to address perceived shortcomings that were believed to have contributed to the magnitude of the crisis. The objectives of hedge accounting are to represent, in the financial statements, the effect of the risk management operations of an entity that uses financial instruments to manage exposures arising from certain risks that could affect profit or loss.

At the same time, both insurance and/ or reinsurance intermediaries and employees of insurance companies carrying out insurance distribution activities must constantly update their professional knowledge and skills; all insurance intermediaries are required to provide proof of their professional training (qualification and continuous professional training), and insurance companies must establish their own policies on the continuous professional training of their own distribution force, in order to ensure the quality of insurance services provided.

In this context, the NCFM Decision no. 49/5/2016 on the approval of the regulation on professional training and competence requirements in insurance is relevant, which reveals all the requirements and conditions of professional training confirmed by a certificate issued by the National Commission, certifying the promotion of the test and having the necessary skills in the field of insurance, such as and sufficient professional training of the person.

At the same time, in order to keep a strict record, as well as to have levers for the cessation or limitation of the activity of the intermediary that shows improper conduct, the authority is in power to decide on the withdrawal or suspension of the insurance and/ or reinsurance broker license, as well as the suspension of the registration or deregistration of insurance agents from the Register of insurance agents and bancassurance agents, according to art. 31 paragraph (9), art. 48 paragraph 1 of Law no. 407/2006 on insurance and point 3 of NCFM Decision no. 21/3/2019 regarding the approval of the Regulation on the Register of insurance agents and bancassurance agents.

In the same vein, mention should be made about the Regulation on requirements for significant shareholders of insurers/ reinsurers and the conditions for holding qualified participations in the share capital of the insurer / reinsurer and the Regulation on requirements for persons holding responsible positions of insurers/ reinsurers and insurance and/ or reinsurance intermediaries to the NCFM Decision no. 13/3 of 03.04.2008 regarding the approval of some regulations. The requirements set out in the Regulation on requirements for shareholders, unlike the NCFM Decision no. 67/10/2015, aim to protect the interests of beneficiaries of insurance products, to ensure the transparency of the shareholding structure, to ensure the protection of accumulated funds and to jeopardize illicit operations on money laundering and terrorist financing. The insurance classes included in the activity license represent a fundamental guarantor of the professional integrity, of an intact reputation of the qualification and appropriate experience of the responsible persons who not only manage the available funds, but also present the image of the entity.

3. CONCLUSIONS

Recognizing the increased vulnerability of consumers of insurance products in such an uncertain period caused by COVID-19, extraordinary regulatory measures to facilitate the operational processes of insurers and to ensure the continuity of insurance services need to be constantly reviewed. The crisis, being in many macroeconomic theories an inevitable stage of the economic cycle, represents an inherent danger of 2020 for several reasons: the response of state policies to the Covid-19 crisis will result in increasing fiscal deficits at a time when the level of public debt in many countries was already quite high, and the loss of income by households and businesses will equate to increased levels of private sector debt and mass bankruptcies, respectively. At the same time, in the context of prudential measures implemented by professional participants in the insurance market in response to the pandemic crisis, the prospects for the development of tools for the alternative distribution of insurance services and products through information technologies are revealed.

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MOVING ONLINE? HIGHER EDUCATION IN THE TIME OF PANDEMIC

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ABSTRACT

Higher education is constantly changing and new trends are emerging all the time, but the past academic year knew perhaps the most sudden and definitive transformation of higher education in history. The pandemic has changed the face of the world and higher education as well, possibly forever. Different universities in different countries all over the world have approached the pandemic's situation in different manners that are constantly evolving. We are witnessing a continuous adaptation in order to cope with a move toward online education at a global and general level. This implies a number of challenges for students, teachers and the academia worldwide. The present article aims to describe some of the problems and the new emerging trends in this unprecedented educational context, while also suggesting some possible solutions for a good quality education even when it must take place online.

Keywords: higher education; change; pandemic; online.

JEL Classification: A1, A2, A3, Y8, Z10

1. INTRODUCTION

Higher education is constantly changing and new trends are emerging all the time, as education is a constantly evolving process, aiming to adapt and reflect the changes in the society worldwide. However, rarely in history has a such a sudden change occurred as in 2020, when the pandemic changed, probably forever, the face of education: more than a billion learners across the globe were affected by their schools and universities had to close and move toward online education. COVID-19 has had a dramatic effect on how higher education institutions provide their teaching. Most teaching institutions had to switch to teaching off-site, using various platforms and educational tools online. In some cases, the situation allowed for a 'blended' type of education, mixing online with classic teaching; some countries like the UK tried to maintain face-to-face education for as long as possible. All countries dealt with the circumstances in their own specific way but

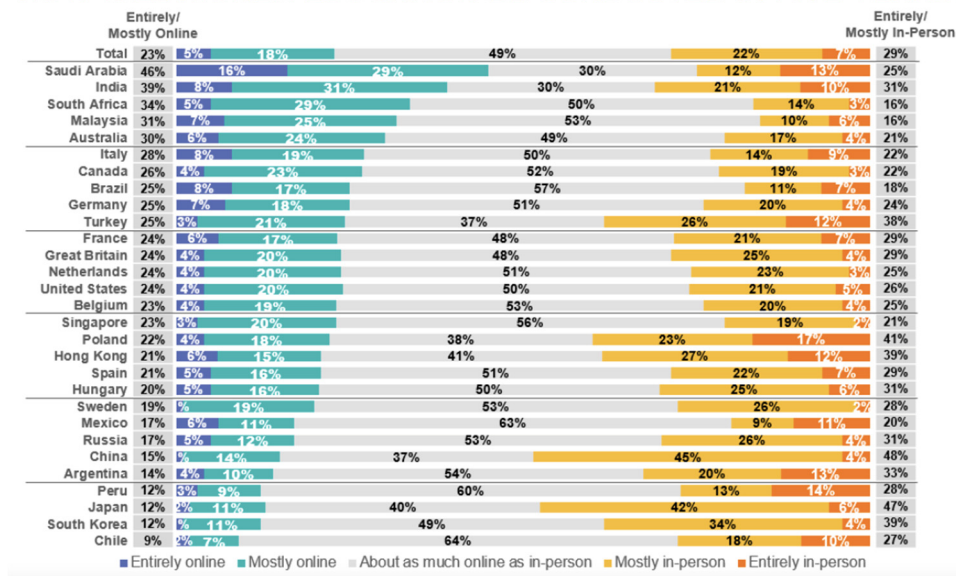
overall the challenges were similar, therefore similar measures were undertaken. The previous academic year ended mostly, if not entirely, online. The present academic year, 2020-2021 has started online or followed a hybrid scenario, combining online and on-site learning. This situation is general worldwide. Most likely, on the long run, the changes will tend to become permanent, as universities adapted quite well to the new online system and now observe its benefits, not just its shortcomings. Even countries like Romania, where online education was previously not highly developed, managed to cope well with the sudden changes and the steps forward in this direction should perhaps be acknowledged and integrated into the education process in the future.

2. CHALLENGING SITUATION

The World Economic Forum undertook a comprehensive Ipsos survey on students over 18 years old from 29 countries, trying to find their opinion on higher education's near future (five years from the start of the pandemic). The largest number of students answered the changes brought about by the pandemic are permanent, with only approximately half of respondents, mostly from Asian countries, believing in a return to face-to-face learning (see Figure 1). The conclusions of the Ipsos survey were that by 2025 higher education will have permanently become hybrid. Furthermore, only approximately half of the respondents considered that face to face education is worth its high price, and this is an important aspect that will surely be taken into consideration in the future (Figure 2).

Europe, as well, facing a worrying outbreak of cases, closed its universities and switched to remote teaching. Education faced unprecedented challenges due to the COVID-19 pandemic, seeing hundreds of schools and universities closing in order to implement social distance measures. More than 1.5 billion students in pre-school and university education have been affected by these closures, face to face teaching being interrupted indefinitely. Although some institutions were already partially prepared to adapt to distance education, most of them had to learn by doing, as the situation prolonged and generalized.

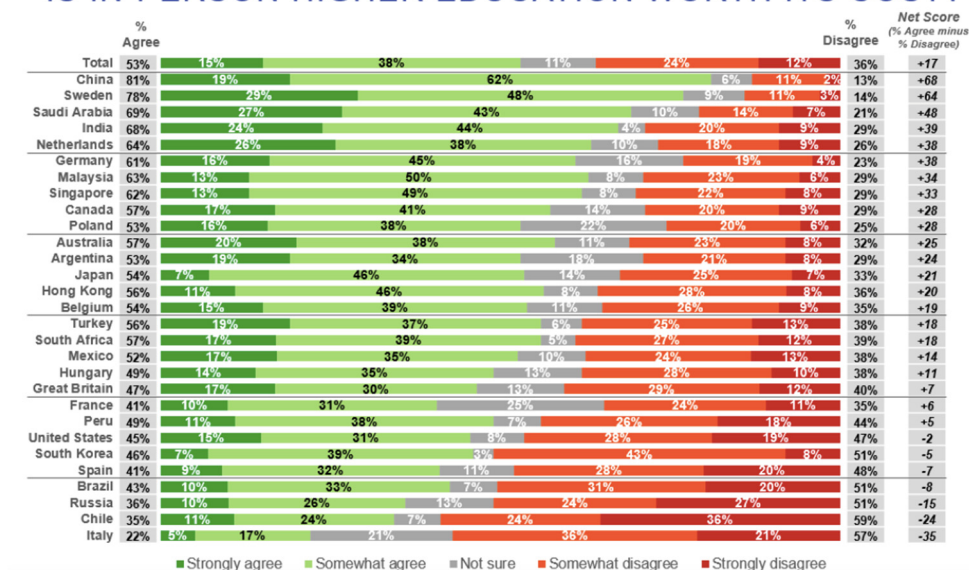
HOW WILL HIGHER EDUCATION BE CONDUCTED IN FIVE YEARS?



Source: (Linney, 2020)

Figure 1. Higher education in 5 years

IS IN-PERSON HIGHER EDUCATION WORTH ITS COST?

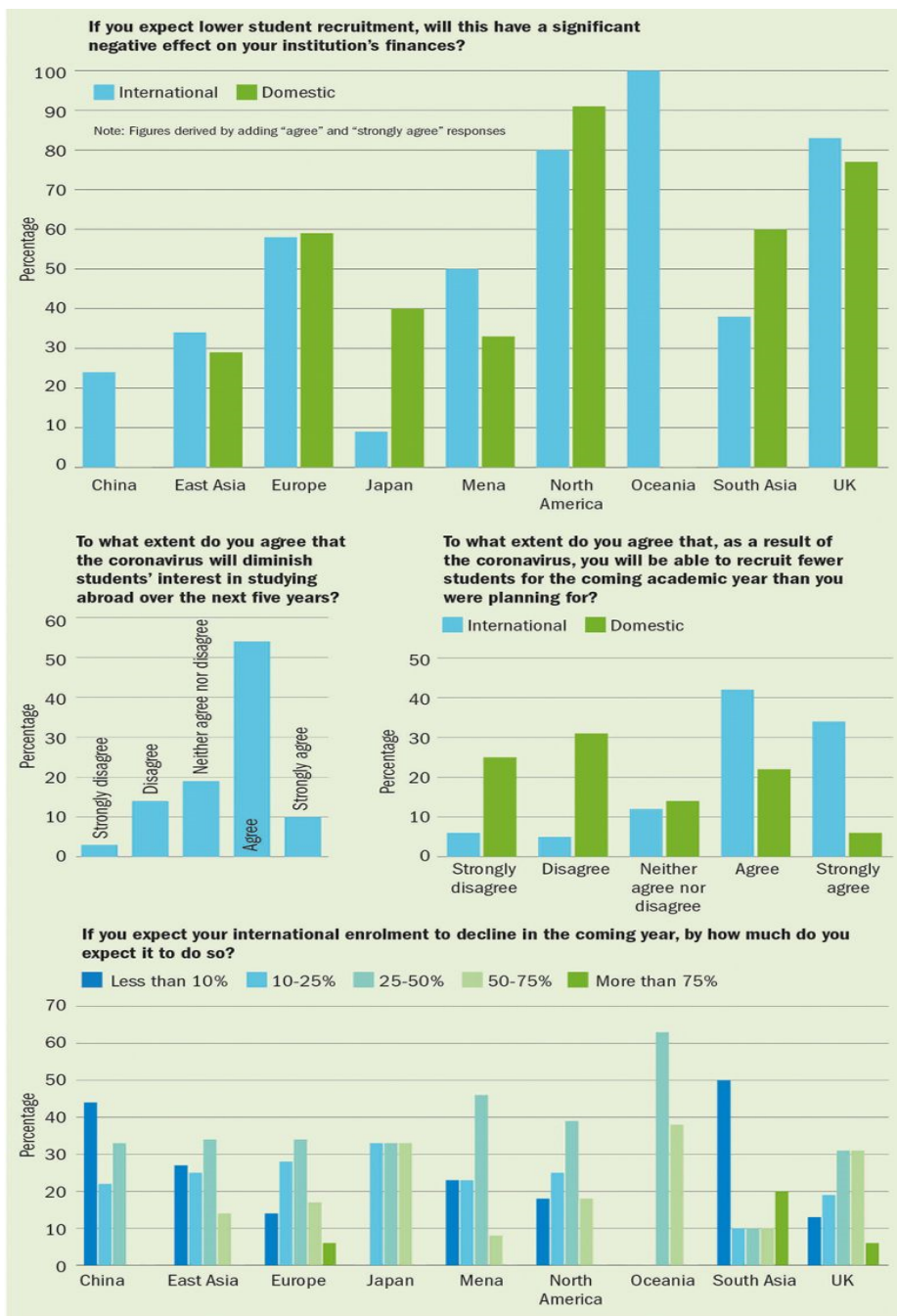


Source: (Linney, 2020)

Figure 2. Is in-person higher education worth its cost?

The European Data Portal analyzed in the summer of 2020 the general situation of the European education (European Data Portal, 2020): the closure of face-to-face schooling affected more than a half of the student population, with millions starting to learn online (see Figure 3). In support of its member states, the EU has been funding projects and offering study platforms, whereas reviewing the action plan for digital education, with the purpose of supporting online across Europe. The impact of COVID-19 related measures on education has been significant and requires continuous measures from the European Commission. UNESCO, dedicated to helping learners in the time of lockdowns and general covid situations has created a live database, continuously updated with information about the outbreaks of covid and their effects on education. Furthermore, it undertook a survey in more than 60 countries referring to distance learning, which has become the norm in the European Union, as well as in the rest of the world. The technology used for e-learning is being financially helped by the World Bank, as it acknowledged the small number of institutions with a comprehensive digital offer available to students and teaching staff. So in order to ensure the continuation of education, universities had to adapt to the new conditions and to digital learning resources, with two more aspects to be taken into account other than the needed technology: the skills to use it and reliable access to internet. The latest has often been a problem, especially in certain parts of Europe, as for example the rural parts of Romania. Global estimates suggest that over 800 million students do not own a computer or share one with a large family, over 700 million lack internet access and another approximately 50 million do not have mobile networks. And it is precisely those students most in need of education that are also at the highest risk, as they come from low-income families and remote areas. In such cases the dropout rates are unfortunately high.

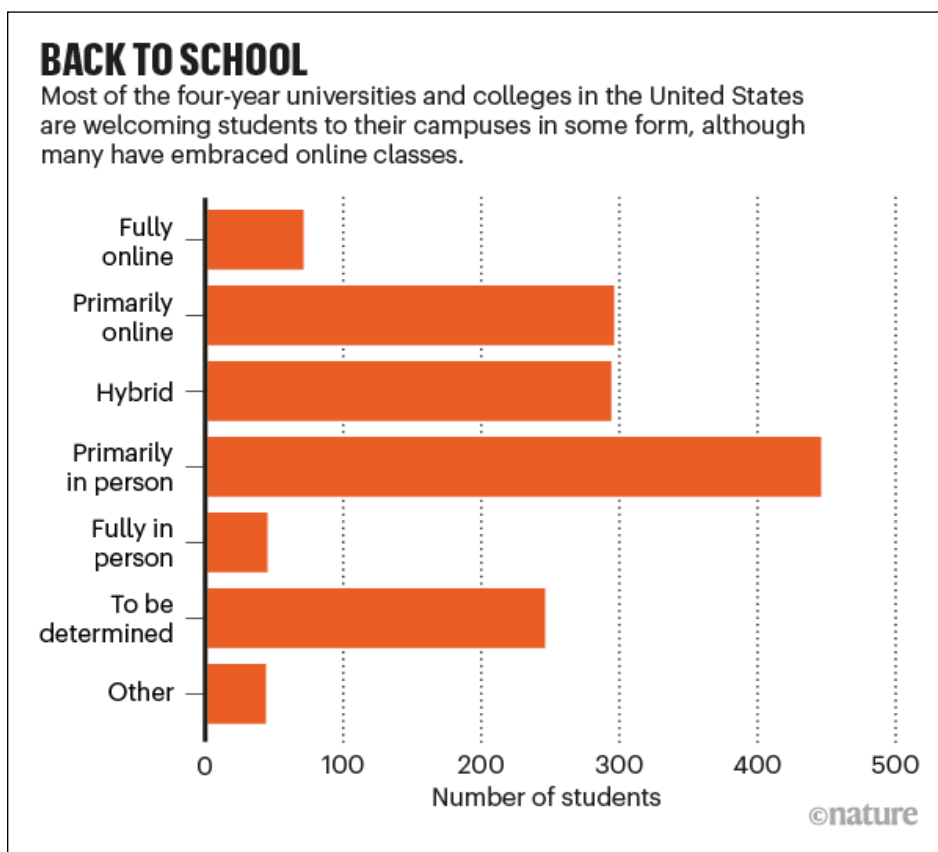
Paul Jump, analyzing in a leaders of universities survey the switch to online learning, observed that the numbers of students' dropouts are large, that the universities might need urgent funding due to the pandemic situation and that the teaching staff might be in need of help – all indicators of a troublesome transition to remote education.



Source: (European Data Portal, 2020)

Figure 3. Statistics regarding higher education in 2020

Meanwhile, Emma Marris, writing in *Nature* about the academic situation in the United States during the Covid pandemic, observed that more than 1000 higher education institutions welcomed back their students starting with the new academic year in August 2020, mostly because face-to-face education is considered much better and due to financial issues (Figure 4). She also noted that some of these colleges changed their perspective in the view of the rising numbers of cases; a significant number of students returned to campuses, with everything that implies, though (Marris, 2020).



Source: (Marris, 2020)

Figure 4. Return to face-to-face education

Some universities went as far as using mathematical models for predicting the outcomes of their students not returning on campus: at Cornell University of New York, a team of researchers lead by Peter Frazier proved that face-to-face education will in fact cause less infections with the virus. Others disagree with Frazier's model, obviously, but he stood his ground, claiming that in campus

housing, associated with available testing, would actually stop an outbreak of covid. After the spring convention of the Massachusetts' Association of Independent Colleges & Universities in Massachusetts, the model researchers came up with also suggested that Covid cases can be controlled in the university's campuses, especially if the second term is reduced and students are frequently tested and monitored closely. As such, prestigious universities like Harvard, MIT, and Yale opened their gates to on-site teaching starting with the spring of 2020. In the meantime, with the arrival of the vaccines, the situation is continuously improving.

3. POSITIVE OUTCOMES

The surveys above and many others indicate that despite the challenges the educational system faces, in general all teaching staff, as well as present and future students have a positive perspective on the future of university studies. Their level of satisfaction seems to be rather high. This is also shown by the large registration numbers and high return rates in the academic year 2020-2021. Obviously, the measures taken by universities, their educational offer, the funding available, the general pandemic conditions, all will have their important contribution to the future success of the student registration. There is a growing popularity of alternative forms of education, such as micro-credential courses, and online education has certain obvious advantages, such as much diminished costs both for the institutions and for students, as well. As Laura Linney states for the QS platform 'In times of crisis, innovative solutions must be found to address new, complex challenges (Linney, 2020).

The coronavirus crisis provides the higher education sector with an opportunity to reimagine education and how it's delivered, moving beyond how things were done and creating new solutions for a drastically changed climate.

By reimagining education, institutions can explore how learning could be delivered in a blended format, available anytime and anywhere, through public-private partnerships involving digital technology.'

Other than lower costs, there is also the important advantage of acquiring new technical skills, both for the teaching staff and for students. Furthermore, there is a certain flexibility when it comes to online learning and also to examinations. These are a serious component of the higher education process and a necessary step in evaluating students' progress, a milestone of any education system. Flexibility in examinations is related both to the means of evaluation and to the time and date of the exams. Naturally, such evaluations taking place online come with a certain challenge, as well: it may be more difficult to ensure students abide by the rules that are set by the professor and do not attempt fraudulent activity during examinations. Online exams may well become permanent in certain cases, due to several factors: flexibility, less resources involved—regarding staff, time consumption and even the use of numerous printed papers, as well as

eliminating the time-consuming and prone to human errors marking system of before. (Whiting, 2020) Certain universities around the globe were in the process of adopting digital exams even before the pandemics.

Although the unprecedented move to online learning caused disruption and required considerable efforts of adaptation, over time it prompted considerable educational innovation and digitisation. The World Economic Forum discusses some important features: the acceleration of innovation within education, its increased efficiency, the increased productivity of a lesson, the development of educational applications, e-learning platforms and teaching resources. Furthermore, public-private educational partnerships could become more important and larger, a genuine cross-cooperation regarding education.

4. CONCLUSIONS

COVID-19 has dramatically reshaped the way global higher education is delivered. As a result, universities rapidly shifted their communication systems and the way they operate in order to meet the evolving needs of students and staff. Universities and higher education professionals are still facing increasingly complex challenges related to the coronavirus crisis. Despite these, studies indicate a certain level of optimism about changes within the higher education system. Time has also shown educators they can manage online activities and students have learnt to better cope with the challenge. Furthermore, with the arrival of vaccines, the situation might change for the better, as well and face-to-face education might be possible again on a larger scale. It is yet early to be clear if hybrid education will become the norm, with both face-to-face and online classes, or online learning will indicate poor performance and a return to face-to-face education might ensue. As the situation is in ongoing development, the long-term impact of the pandemic on education will continue to be conducted by researchers and scholars alike. As UNESCO research states: ‘Under Sustainable Development Goal (SDG) 4 to ensure inclusive and equitable education and promote life-long learning opportunities for all, governments have committed both to increase digital skills and expand ICT infrastructure. To support distance education, schools will need to better equip learners with the skills to migrate onto these online learning platforms. Moreover, closing the ‘digital divide’ will require governments to invest in supporting learners. In this endeavour, the first step is to map within and between countries where investment is most needed. This requires better measures of access to and use of digital technologies.’ (Montoya, 2020)

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EFFECTS OF COVID-19 PANDEMIC ON ENTREPRENEURSHIP

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ABSTRACT

The COVID-19 pandemic caused blockages in entrepreneurial activities. The effects of this pandemic are amplified by daily changes, and the impact of the COVID-19 pandemic on entrepreneurs and entrepreneurship is constant. Thus, the COVID-19 pandemic draws attention to entrepreneurship, as it can stimulate economic recovery. This study is based on GEM analysis on entrepreneurship, and aims at the impact of internationally applied policies on limiting the infection with SARS-CoV2 virus, as well as the analysis of the international consequences of the COVID-19 pandemic on entrepreneurship, in order to create early prospects for its remediation. Our aim is to understand the effects and impact of the COVID-19 pandemic, as well as the economic prospects for economic recovery, identification of risks and entrepreneurial opportunities.

Keywords: entrepreneurship; Covid-19 pandemic; crisis; Global Entrepreneurship Monitor (GEM).

JEL Classification: L26, M19, O10

1. INTRODUCTION

The emergence of the COVID-19 pandemic, like other rare disasters, which occurred in the past and will continue to occur in the future, have had consequences for the economy. It seems that pandemics recur at intervals of 10 to 50 years, generated by new viral forms (Potter, 2001). The COVID-19 pandemic affected society as a whole, causing dramatic changes in companies and consumer behaviour (Donthu and Gustafsson, 2020), and in the first half of 2020 implicitly affected the global population. This pandemic triggered multiple negative effects, with an impact on people's health, and it generated human tragedies caused by the virus. In addition, it is admitted that the COVID-19 pandemic triggered the most severe economic crisis of the century (Parker, 2020). The consequences of the COVID-19 pandemic are difficult to predict in the long run, as they vary from country to country (Zahra, 2021). The most important economic sectors have been affected by government-imposed decisions, so food and tourism, recreation, education, travel and part of construction activities are the sectors with the biggest blockages in the economy. The educational institutions suspended their activity, which led to negative effects on entrepreneurs and employees in this field. Similarly, in the international travel sector, entrepreneurs and employees became inactive for a period of time, which subsequently led to a decrease in the number of trips due to the closure of national borders, which led to blockages in international tourism (OECD, 2020; Ionescu-Somers and Tarnawa, 2020).

The effects of pandemics in general are difficult to estimate in the long run, although entrepreneurship plays an important role in the creation, growth and development of the business sector, as well as in the growth and prosperity of a region or state (Carayannis *et al.*, 2014; Hisrich *et al.*, 2017). The European Commission (2003) considers that entrepreneurship is particularly important, because this phenomenon contributes to job creation and supports economic growth, enhances creativity, develops personal potential, and it is a motivating factor for the market economy. During the periods of isolation, entrepreneurial activity cannot be supported, because it is shaped by a set of political, economic, social and cultural factors with an impact on their conditions, information on access to finance, government policies, government programs for entrepreneurship, entrepreneurial education, research and development, commercial, professional, and physical infrastructure, social and cultural norms, and facilitating market penetration (Bosma and Kelley, 2018).

In the context generated by the COVID-19 pandemic, the entrepreneurs who worked in the field of digital technology or in the pharmaceutical field experienced an increased demand for products and services. Start-ups in the fields of medtech, fintech and edtech, also the retail companies selling products exclusively online, or which are based on online activity are positively affected by the changes generated by the COVID-19 pandemic (Fang *et al.*, 2020). Entrepreneurs engaged in the retail sector of outdoor equipment, sports equipment

or refurbishment are also included in the category of companies with increased sales, due to the reduction in the number of travels abroad, and people's desire to carry out outdoor recreational activities or to redecorate their houses. In various fields of activity, there was a high interest in conducting sale meetings online, thus reducing travel expenses and time (OECD, 2020; Ionescu-Somers and Tarnawa, 2020).

Considering the current situation, the most important aspect in this research is the analysis of the effects generated by the blockages in the context caused by the COVID-19 pandemic, and the prospects for reducing the crisis created.

2. LITERATURE REVIEW

2.1. Entrepreneurship and its effects in economy

Entrepreneurship is the ability to perceive new opportunities. This capitalisation and recognition of new opportunities will tend to balance/correct the market. Entrepreneurship is the act of innovation which involves the endowment of current resources with resources which increase the capacity of enrichment of the company (Drucker, 1954). Consequently, it is a dynamic process, shaped by the conditions of the national framework (describing social, cultural, economic and political aspects with an impact on the society as a whole), and of the entrepreneurial framework (capturing the political and capital aspects including: access to finance, entrepreneurship policies and programs, entrepreneurial education, transfer of information from research and development activities, legal and commercial infrastructure, internal market dynamics, and internal regulation, physical infrastructure, cultural and social norms) (Herrington *et al.*, 2009; Chell, 2008; Casson, 2003).

According to Hebert and Link (2006), Chell (2008) and Lubishtani (2018), Ricardo Cantillon described the entrepreneur as a person with a risk propensity who can be seen as the *arbiter* between producers and buyers, and Schumpeter describes the entrepreneur as an individual with the ability to change, innovate, energise, and develop the organisation economically.

Entrepreneurship is a particularly important phenomenon, because it contributes to job creation and supports growth, enhances creativity, develops personal potential, and it is a motivating factor for the market economy (European Commission, 2003). In this sense, the entrepreneurial field plays an important role within the Romanian economy, being considered the engine of economic growth, and an important contributor to innovation and new jobs (Rusu and Roman, 2017). Entrepreneurship provides stability to the labour market by capitalisation and exploitation of intentions, motivations, hobbies, experiences and entrepreneurial studies of the population. The increase of the number of entrepreneurs should be a national goal by assisting and supporting them in crisis situations, especially financial crises, and it is extremely important to invest in human resource training

and development for the labour market. For example, Romania, which is a developing country, has the capacity to support new businesses, if entrepreneurship is promoted through education and investments in supporting the new businesses (Nicolau and Foris, 2018).

2.2. Effects of COVID-19 pandemic on different forms of entrepreneurship

Entrepreneurs are facing a new reality, the current crisis is not just a health crisis, it affects millions of people around the world (Derderian, 2020). Although society was affected over time by several pandemics, it is difficult to estimate the long-term economic, social or behavioural consequences, because they were not thoroughly investigated in the past. Crises created a tendency to save capital, and less to invest, which led to a low economic growth (Donthu and Gustafsson, 2020).

The pandemic has had a strong impact on the hospitality industry since the beginning of the crisis caused by the SARS-CoV2 virus, due to the rules which have been imposed, such as: social distancing (which has led to community blockage), and travel restrictions (which have led to the temporary closure of companies in the hospitality industry, leading to a decrease in demand - for companies where activities were allowed during the pandemic). Thus, restaurants have also been forced to limit their operations strictly to take orders with home delivery, national and/or international travels have decreased sharply, and activities in the hotel industry have been suspended due to a strong decline in employment, with a direct impact on the decrease of their income (Gursoy and Chi, 2020).

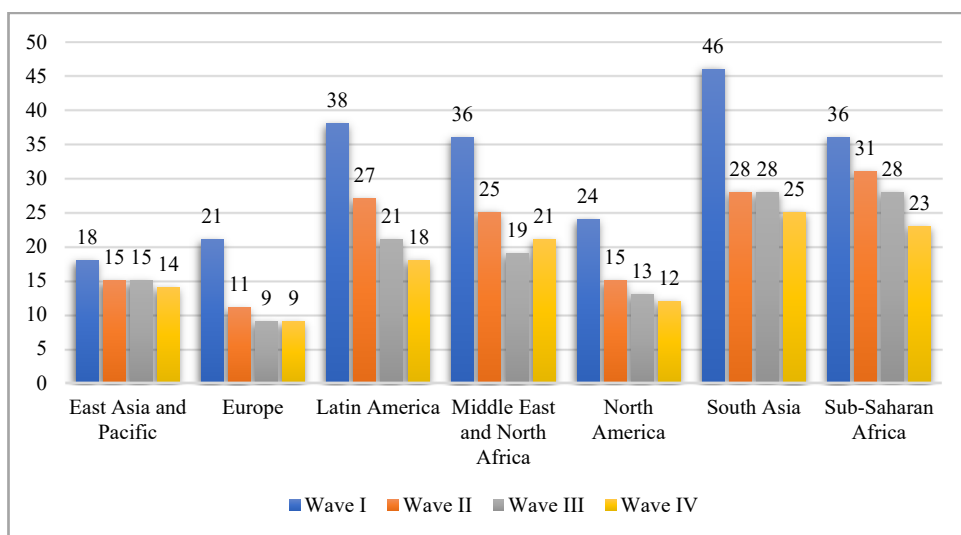
Over time, the crises caused by SARS and EBOLA, like the current crisis caused by the COVID-19 pandemic, had a negative impact on hotel and restaurant activities, generating blockages, as they had to suspend their activities, forced by the rules implemented by governments through policies aimed at limiting the spread of the SARS-CoV2 virus. Entrepreneurs and employees in these industries found themselves in an unprecedented situation, in urgent need of financial assistance, for a smooth operation and for the protection of jobs dependent on these sectors (Vinodha Evangeline and Karthick, 2020).

Even though most industries have been directly affected by the pandemic, however, for some sectors of activity, the impact is indirect. Thus, the current health crisis has influenced entrepreneurship by reducing the prices of crude oil, metals and other raw materials, causing companies in these fields to withdraw their investments and/ or to postpone the maintenance of their activities. Thus, in the medium and long term, their effects will be felt by suppliers operating in the field, some investors preferring to reduce their investments due to market uncertainties (OECD, 2020; Ionescu-Somers and Tarnawa, 2020).

3. ANALYSIS OF ENTREPRENEURSHIP EVOLUTION DURING COVID-19 PANDEMIC

As previously presented, companies are facing a real crisis amid the COVID-19 pandemic which has created global uncertainty. Moreover, according to data provided by the World Health Organization (2020), in some states, the number of cases of SARS-CoV2 virus infections has increased, which is why the prospect of economic blockage measures has increased too. Thus, there has been a lower sale rate and, implicitly, a decrease in employment (Facebook/OECD/World Bank, 2020).

Facebook/OECD/World Bank (2020) presents the situation of business closure rates due to the pandemic, which continues to block economic activity (Figure 1).



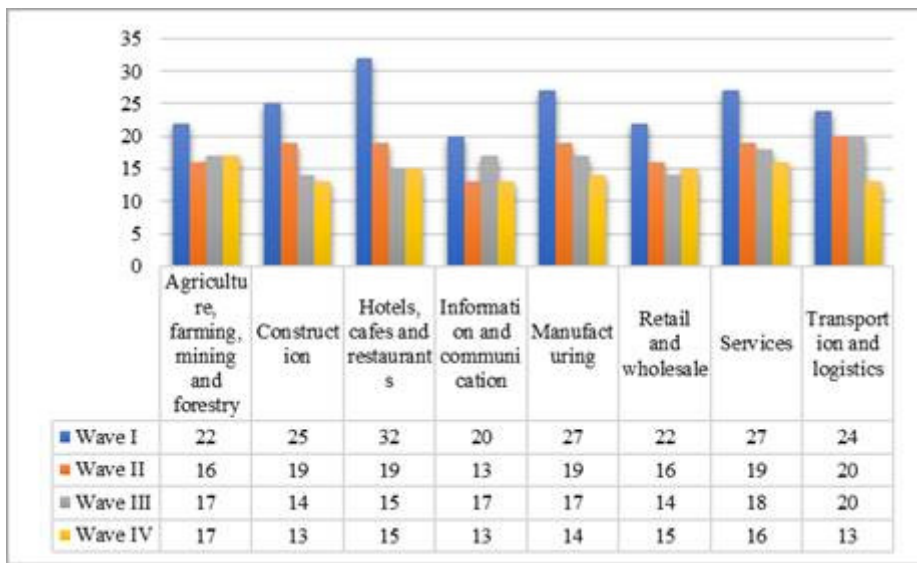
Source: (Facebook/OECD/World Bank, 2020, p. 3)

Figure 1. Histogram of company closing rate by regions (%)

The COVID 19 pandemic affected the business closure rate in the first wave, the highest in the South Asian region, followed by Latin America, the Middle East, North Asia, and Sub-Saharan Africa, and the lowest percentages of business closure was recorded in East Asia, Pacific, and Europe. Subsequently, business closure rates gradually decreased from Wave I to Wave IV. Some regions or countries in Wave IV of the COVID-19 pandemic experienced a continuous decline in closure rates. In sub-Saharan Africa and Latin America, due to continued blockage measures, there has been a declining trend in the number of companies, which is why the resumption of international air traffic was announced from August 1st, 2020. In addition, Denmark and Australia recorded high business

closure rates due to blockages in urban centres. On the other hand, the sectors of activity were also affected by the blockages generated by the COVID-19 pandemic during the four waves, but there was a certain stabilisation during Waves III and IV. In some countries there was a stabilising trend due to the reopening of business activities, while other countries extended restrictions or imposed new blockage measures. However, during Waves III and IV, half of the countries analysed had a tendency to reduce blockage measures (Facebook/OECD/World Bank, 2020).

In Figure 2, we show the situation of the business closing rate by sectors of activity. Thus, the sectors of activity most affected by the effects of the COVID-19 pandemic since the beginning of the health crisis were hotels, cafes, and restaurants, followed by the manufacturing and service sector.

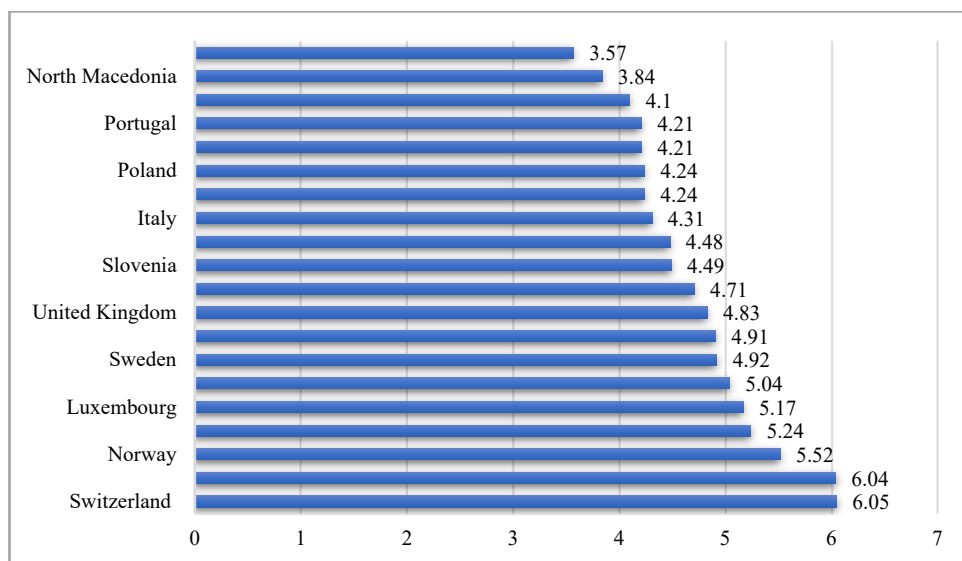


Source: (Facebook/OECD/World Bank, 2020, p. 8)

Figure 2. Histogram of company closing rate by sectors of activity (%)

The less affected areas are: information and communication, followed by retail and wholesale and agriculture, farming, mining and forestry. During Wave IV, the sectors of activity which showed a tendency to recover were companies in the field of transport, logistics, construction, information and communication. The hotels, cafes and restaurants showed the highest declines in the economic sector in the first wave of the COVID-19 pandemic, later they recovered, but during Wave III and IV they remained at the same level of 15% (Facebook/OECD/World Bank, 2020). Bosma *et al.* (2020) provided, for the first time in 2018, an indicator called the National Entrepreneurship Context Index (NECI), being a composite

indicator, which presents entrepreneurial conditions in a single figure, providing classifications and scores for 54 GEM countries, estimated over a certain period of time. GEM analyses the social perception of entrepreneurship, focusing on individuals' knowledge of people who carry out entrepreneurial activities, the positive perception of running a business to earn a living, the perception of respect and recognition in society obtained by leading successful business. The NECI index presented in Figure 3 is influenced by demographic data (age, gender), motivation, level of fear of failure, and psychological data such as entrepreneurial talent, propensity to start a business, self-assessment of entrepreneurial skills, ability to identify business opportunities, and openness to act on them.

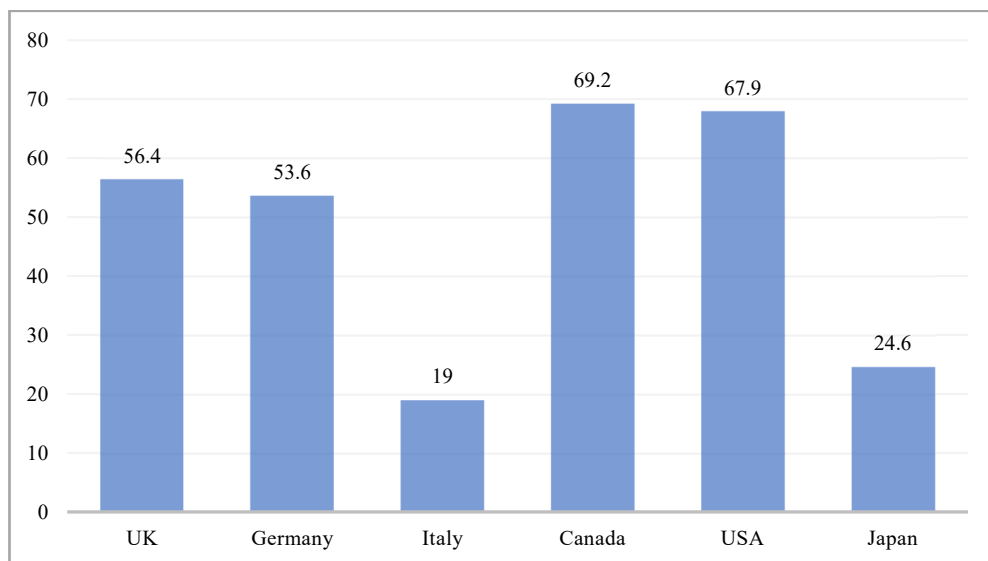


Source: (Ionescu-Somers and Tarnawa, 2020, p. 19)

Figure 3. National Entrepreneurship Context Index (NECI), selected economies – Europe (2019)

As previously presented, the data in Figure 3 show the values of the NECI index for 10 European economies, outlining the health components of the entrepreneurial context. This study shows that Switzerland has the highest NECI index in Europe - 6.05, and North Macedonia has the lowest level - 3.57. The study conducted by Bosma *et al.* (2020) identifies high or low values of the scores, noting that the data analysed above had appeared before the COVID-19 pandemic. During this pandemic, no data on the evolution of the index were provided, but in this study, we analyse the components which may influence the index in the context of the crisis caused by the COVID-19 pandemic by assessing and diagnosing the entrepreneurial environment of an economy. Both policy makers

and practitioners can use the index and related assessments to identify areas for improvement and to compare the results of economies, with the purpose to develop areas with potential and to have a positive impact on them (Bosma and Kelley, 2018). According to Ionescu-Somers and Tarnawa (2020), there is a positive image of entrepreneurship in states such as Canada, USA, UK or Germany, especially before the pandemic. Most individuals considered internship as a very good career opportunity, and their intentions to start a business were high.



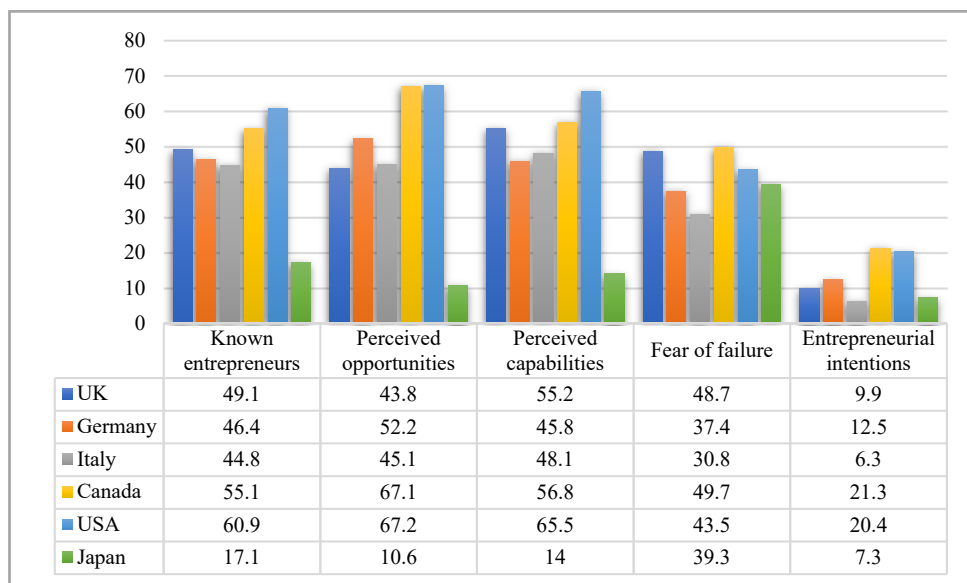
Source: (Ionescu-Somers and Tarnawa, 2020, p. 35)

Figure 4. Histogram of the image of career entrepreneurship in European states vs. other selected states (adult population - %)

Figure 4 shows the percentage of the adult population who consider entrepreneurship an appropriate career choice, through a comparison of selected economies in Europe, America and Japan. Thus, in Canada, 69.2% of the adult population consider entrepreneurship a suitable career choice, followed by the USA. In Europe the highest percentage is recorded in the UK, with 56.4%, followed by Germany with 53.6%, while in Japan and Italy the percentages show low values compared to the economies of the states mentioned above, of 24.6% and 19%, respectively. Perceived career opportunities and the economic and financial situation of these states, together with entrepreneurial intentions and fear of failure are aspects of the attitudes and perceptions of the adult population.

Figure 5 shows the percentage of the adult population integrated in entrepreneurship at an early stage, also the population employed in entrepreneurial

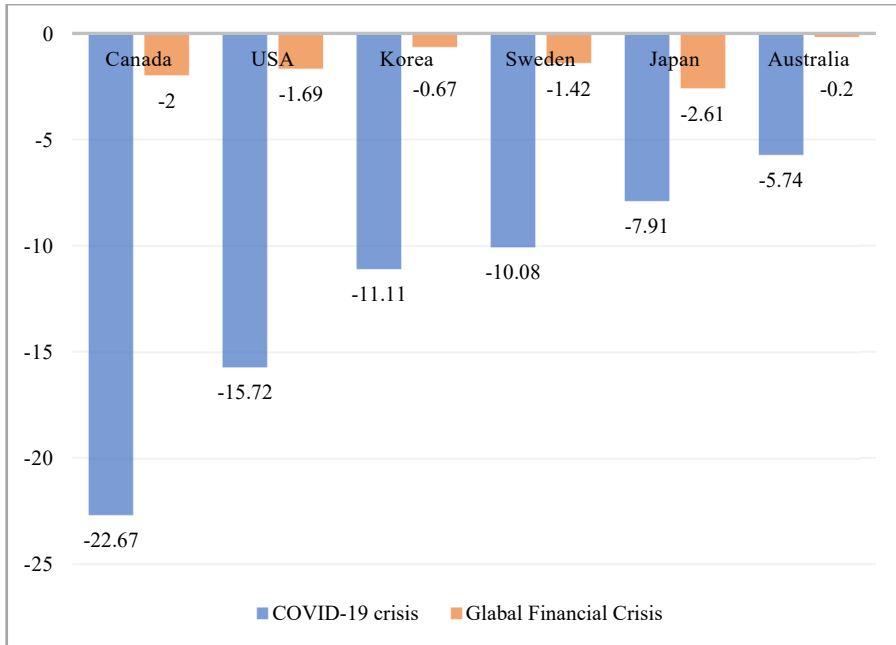
activities. Thus, the USA is the economy with the highest values regarding the attitude of the adult population and its perception of entrepreneurship, followed by Canada. In Europe, Germany has the highest values of entrepreneurial intention and perceived opportunity, and Italy has the lowest values for fear of failure, which influences entrepreneurial intention. According to Ionescu-Somers and Tarnawa (2020) data, in Japan, although the fear of failure has a percentage of 39.3%, only 7.3% of the adult population show entrepreneurial intentions.



Source: (Ionescu-Somers and Tarnawa, 2020, p. 35)

Figure 5. Histogram of attitude and perception regarding entrepreneurship in European states vs. other selected states (adult population - %)

The COVID-19 pandemic affected almost all sectors of the economy, because it involved the government-imposed suspension of the activities of some important economic activities. Food and tourism, recreation, education, travel and part of construction activities are the sectors with blockages, with the highest concentration of entrepreneurs. Education, from nurseries to academic education, suspended its activities, which generated a significant negative impact on entrepreneurs and employees in this field. Worldwide, international travel was suspended by state restrictions to reduce Sars-CoV2 infection. All these situations led to a rapid decrease in the number of hours worked, as we can see in Figure 6 by the comparison between the COVID-19 pandemic and the global financial crisis of 2008-2009.



Source: (Ionescu-Somers and Tarnawa, 2020, p. 38)

Figure 6. Histogram of the total number of hours worked. Comparative analysis COVID-19 crisis vs 2008-2009 global financial crisis for selected economies (%)

The COVID-19 pandemic created major imbalances, the Canadian economy had a decrease by 22.67% due to this pandemic, compared to the global financial crisis which generated a decrease by only 2% (Figure 6). In Europe, Sweden had a decrease by 10.08% due to the COVID-19 pandemic, compared to the decrease by only 1.42% generated by the global financial crisis. Australia is the state (in our analysis) which experienced the lowest percentages, as follows: a decrease by 5.74% due to the Covid-19 pandemic, and a decrease by 0.2%, generated by the global financial crisis.

4. IMMEDIATE EFFECT OF COVID-19 PANDEMIC IN EUROPEAN STATES (JANUARY - JULY 2020)

Even though the economic perspectives for 2020 were positive, the COVID-19 pandemic greatly changed the situation, and the economies of the states were severely affected. In Germany, an average of four out of five companies expected their revenues to fall, and a third were closed due to blockages. Thus, 90% of German entrepreneurs recorded a decrease in sales, while one in three did not obtain any income. Moreover, a third of the entrepreneurs affected by the current health crisis state that they can survive on their own resources for up to three months (Meffert *et al.*, 2020; Metzger, 2020, OECD, 2020).

Italy is one of the countries strongly affected by the SARS-CoV2 virus, with a severe impact on both economy and entrepreneurial activity, highlighted by the fact that the Italian economy failed to recover after the global financial crisis of 2008-2009 which slowed down the economic growth in 2010-2019. In this context, Italy is the member state of the European Union with a low rate of entrepreneurial activity compared to other member states, and the current context creates a pessimistic scenario for the economy of this state. In addition, the companies were exposed to the risk of insolvency, and the blockages generated the instantaneous cessation of production activities, which deeply affected the entrepreneurs. Italy is relatively similar to neighbouring countries and, together with France and Spain, is one of the countries with the lowest forecast for gross domestic product. However, an increase in gross domestic product is expected for 2021, but without being able to cover the loss generated by the COVID-19 crisis in 2020. Regarding the unemployment, Italy recorded 8.9% in the first quarter of 2020; this value is fluctuating, because redundancies were banned until August 15th, 2020, with most policies aimed only at counterbalancing the immediate effects of the COVID-19 crisis (Fini and Sobrero, 2020; OECD, 2020; Ionescu-Somers and Tarnawa, 2020).

According to Somers and Tarnawa (2020), oscillations are expected for certain sectors of the economy, from decline to growth, and it is expected a sharp trend in the use of technological innovation. This contradiction could be seen in the current crisis when, on the one hand, there were sharp declines in sales in the tourism and manufacturing industries, and on the other hand, there were sharp increases in online and pharmaceutical sales. In addition, in this period, new entrepreneurs benefited from the opportunities offered by the public system to support the economy through publicly available subsidies at regional, national and European level (European Commission, 2020a; OECD, 2020).

In Norway, due to the partial blockage on March 12th, 2020, entrepreneurs and employees were prevented from carrying out their entrepreneurial activity, and it was difficult to fire the employees. The areas based on maintenance and construction activities were very affected. Restrictions on travel and group meetings had a negative impact on tourism and hospitality, retail, transport, culture and entertainment (Johnsen and Li, 2020; OECD, 2020; Ionescu-Somers and Tarnawa, 2020).

Poland was affected by the blockages created as a measure to control the spread of the SARS-CoV2 virus, which had negative effects on entrepreneurship. The most affected sector was consumer services, and the least affected were the constructions. The decrease of revenues led to massive losses for entrepreneurs, especially in the tourism and transport sectors. The automotive industry was affected by the lack of orders, and late payments affected the manufacturing industry. Newly registered independent enterprises fell by 19% in the transport sector and by 17% in the hotel and gastronomy sector. In addition, the demand for

new employees decreased by 42% in 2020 compared to 2019 (according to an analysis conducted on 50 recruitment portals). Thus, Poland, like other states, in addition to negative effects also experienced positive effects, for instance the support given by e-commerce, which was the best of all. Consequently, the entrepreneurs moved their business on the Internet, and the customers changed their preferences. The direct effect of moving businesses on the Internet was recorded by the growth of e-shops by 1700, reaching 40,000 economic units (Adamus, 2020; European Commission, 2020b; OECD, 2020; Ionescu-Somers and Tarnawa, 2020).

In Spain, the aim was to maintain employment and survival of economic units in the context caused by the COVID-19 pandemic, as the crisis had negative effects in the first six months since the beginning of the pandemic on 47% of companies with less than 10% employees, 25% of companies opted for another business model or cancelled their orders to suppliers, and 28% of companies requested additional financing. 50% of Spanish companies continued their remote activity, expecting an increase in the following period. However, tourism remains the most affected sector in the entire Spanish entrepreneurship, which is why they want to implement a pilot program to stabilise this sector (Aceytuno *et al.*, 2020; Ionescu-Somers and Tarnawa, 2020).

In the UK, the small business sector was suddenly and severely affected by the blockages caused by the COVID-19 pandemic. Demand and supply decreased in the entire economy and had strong repercussions. Thus, 45% of British companies were exposed to risk because they were considered unsafe even if they managed to reopen their business. However, in the UK the work was based on the self-employed, this part of the employees being vulnerable to the COVID-19 pandemic because British policies did not aim to protect this sector, which created inequalities in entrepreneurship. Thus, there was a decrease in the number of about 150,000 self-employed (OECD, 2020; Ionescu-Somers and Tarnawa, 2020).

Considering the analysis of the situation in the countries analysed, perspectives on entrepreneurship in the post-pandemic stage included: acceleration of the digitalisation process, efficient liquidity management in order to avoid bankruptcy, cost reduction, intensification of sales and marketing activities. Innovation will be a concern for the entrepreneurial sector. Thus, household incomes, reduced in the long run as a result of the COVID-19 crisis, will lead to a decrease in the purchasing power of the population, in gross domestic product per capita, and subsequently, there will be a delayed impact on industries and on liquidity within municipalities.

5. CONCLUSIONS

The Ionescu-Somers and Tarnawa (2020) study shows a continuous and urgent need for transparency regarding the financial support mechanism for entrepreneurs by reducing bureaucracy, formalising a community of entrepreneurs in order to reduce the poverty of the self-employed, especially in developing

countries. During the crisis generated by the COVID-19 pandemic, the governments of the countries focused on providing jobs, stimulating the change of business models, and ensuring the necessary financial liquidity to avoid the bankruptcy of companies, especially in areas directly affected by anti-COVID measures.

For the future, policy makers need to set favourable conditions for entrepreneurship, especially for those who are in the early stages of project implementation - at the level of ideas or beginners in the entrepreneurial system.

Thus, defensive policies are expected, aiming to avoid a liquidity crisis and the closure of economic units, but also to develop policies to support growth in order to stimulate investment and innovation (OECD, 2020; Ionescu-Somers and Tarnawa, 2020). For example, the Italian government planned to support the entrepreneurial system by supporting and growing young businesses, start-ups, by developing business incubators and risk capitals. It is possible to implement all these measures with resources from additional sources of the European Union. Moreover, it is desirable for state governments to develop policies involving entrepreneurial education, by providing services and financial resources to support and develop start-ups.

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“ICH BIN EIN BERLINER”: THE IMPORTANCE OF LANGUAGE IN GERMAN BUSINESS COMMUNICATION

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ABSTRACT

Starting from the famous “Ich bin ein Berliner” speech, delivered by John F. Kennedy in West Berlin, at a notable moment of the Cold War, this article intends to emphasize the importance of language in any type of German communication. However, focus shall be placed upon business communication, in which, despite the invasion of Anglicisms nowadays, the use of the German language is still an important criterion for effective communication. The examples provided along the article are intended to support the idea that in conducting business with German partners, the use of German language – be that to a minimum extent – indicates an understanding and appreciation of the local culture, in other words cultural awareness.

Keywords: cross-cultural communication; German business protocol; low-context culture; Anglicism.

JEL Classification: M14, Z10

1. INTRODUCTION: THE “ICH BIN EIN BERLINER” SPEECH

In 1963, in West Berlin, the U.S. President John F. Kennedy delivered his famous anti-communist speech, which contained the world-wide known phrase spoken in German “Ich bin ein Berliner”. The word-by-word translation would be “I am a Berliner”; however, the use of the German indefinite article “ein”, for which Kennedy’s counsel and speechwriter Ted Sorensen later took responsibility in his memoir [1], dramatically changed the meaning of the phrase to: “I am a jelly doughnut”. Nonetheless, even under these circumstances and despite a highly strong American pronunciation, the reverberating meaning of these few words spoken in German was clear to the crowd gathered in front of the Berlin city-hall.

Beyond the rules of rhetoric and public discourse, this famous example serves as a perfect illustration of the importance of language in any type of communication in the German culture, be that in business or in social context. It

is indeed true that the historical, political and social background did play a certain role in the “Ich bin ein Berliner” speech, but it was not only until Kennedy uttered the four words in German that the crowd cheered and applauded intensely. [2]

However, this famous sentence poses a duality worth analyzing: on the one hand, the positive impact of the use of German language in the German culture, on the other hand, the potential danger of misusing the language and thus altering the message intended, which under certain circumstances – especially in business context – may lead not only to miscommunication but also to failure in conducting proper business.

2. THE IMPORTANCE OF LANGUAGE IN CROSS-CULTURAL COMMUNICATION

Being known as the *lingua franca* of today’s world, English is currently the language of international business, enabling people – at least, in theory – to communicate effectively across cultures. However, language alone cannot guarantee an effective cross-cultural communication, since people are raised in different cultures, with different values, beliefs, customs and different mother tongues to express those cultural features. Even people who speak the same language – for instance, English in UK, India or USA – use specific linguistic structures, defined by the community or the region they live in. It is precisely this culturally-defined variation in the use of language that can sometimes lead to miscommunication.

The fact that language plays a significant role in any type of communication seems an almost futile statement, despite the fact that there are cultures in which words are heavily supported and sometimes even enriched by non-verbal communication. Similarly, one may think of situations in which human communication can be achieved even in the absence of words. But, in a business context, regardless of the parties involved, communication cannot exist without language. The question remains what the most efficient language for the successful communication among and between different cultures is.

When discussing about cross-cultural communication, Edward T. Hall’s classical distinction between low-context and high-context cultures still provides a relevant framework, despite certain criticism.[3] In his work *Beyond Culture*, first published in 1976, Hall defines his contexting model in the following way:

“A high-context communication or message is one in which most of the information is either in the physical context or internalized in the person, while very little is in the coded, explicit, transmitted part of the message. A low-context communication is just the opposite, i.e., the mass of the information is vested in the explicit code.” (Hall, 1976, p. 79)

In other words, in a high-context culture there are many contextual elements and factors, which might be confusing for a person who does not understand the

“unwritten rules” of that culture, whereas in a low-context culture messages are explicit, simple and clear, more focus being thus placed on verbal communication than on body language.

An example to support this idea may be provided by a case study presented by a Chinese researcher with the English Teaching Institute in Beijing, He Bai, in an article published in 2016, focusing on a cross-cultural analysis of advertisements. In his article, the author analyzed two different advertisements for the same product – Crest toothpaste, catered to two differing context cultures: Whereas the first advertisement, from an English-speaking culture, offered detailed and scientific information about the benefits of the toothpaste, such as “the only cavity fighting toothpaste, [...] clinically proven to help [...]. Just what the dentist ordered”, the second advertisement from China contains, by comparison, a much vaguer message, namely “Behind that healthy smile, there is a Crest kid”. Regardless of any advertising techniques, the researcher’s aim was merely to show the clear differences between high context and low context communication styles. From the first advertisement, typical of a low-context culture, one can clearly obtain all the information about the product, since it uses precise words to describe it, furthermore emphasizing the authority of the dentist in providing this direct and explicit message to the audience. By comparison, the second advertisement, clearly specific for high-context cultures, needs to be interpreted from contextual perspective, taking into account cultural factors, beliefs and values:

“[...] people in China care about the kids with exhausted efforts. Under such pre-existed contextual assumption, it is evident that it is better to start brushing teeth from the kids which will make them have healthy smile. Without describing the function and quality of this product directly, the audience has already obtained the main function of this product and the contextual effect will be inferred.” (Bai, 2016, p. 24)

Starting from this example it would thus be a logical conclusion to consider that a culture, in which language plays a significant role, should be regarded as low-context. Such is the case of the German culture, regarded indeed as low-context. Its main features – some of which are considered almost stereotypical – support this idea. When considering, for instance, the overtness of messages, German does indeed make use of simple, clear and explicit communication. All studies focusing on German culture, as well as the examples from reality emphasize the direct and functionally purposed communication style of the Germans, which may give some foreigners – especially those originating from high-context cultures – the impression that Germans are quite brash, blunt or even impolite. Famous critical incidents provide numerous examples of cultural clash

situations, proving once more that the directness of verbal messages in German may cause misunderstandings.

It is thus no surprise that the term *Kulturgrammatik*, literally meaning “grammar of cultures”, appeared in a low-context culture, namely Sweden [4] and was rapidly adopted by Germans, who consider that just as one learns the grammar of a language so as to use words correctly, one should also learn “the grammar of a culture” to enable a correct communication.

3. SUCCESSFUL CROSS-CULTURAL BUSINESS COMMUNICATION IN GERMANY

Apart from the factor analyzed above, namely overtness of message, if one takes into consideration other cultural factors, such as flexibility of time or (personal) space, one may conclude beyond any doubt that German is a low-context culture. Time is for the Germans highly organized, the product being more important than the process, a statement which most likely no one could contradict. Similarly, the lack of personal space in the German culture may be discredited as impolite and in a business context knowing the importance of *Intimsphäre* shows value for protocol and formality.

Therefore, it is clear that cultural awareness should be the key to successful cross-cultural communication. Yet, what does this cultural awareness imply when referring to the German business communication? Even though understanding business protocol is the first step towards success in conducting business in Germany, one should not overlook the traditional German values. Individual orientation, in the sense of self-reliance, a balanced competition, which however does not imply the lack of a strong sense of collaboration, task orientation, analytical orientation and equality, in the sense of the German term *Mitbestimmung* (employee co-determination) are just a few cultural values, cherished both in social and in business context in the German culture.

The respect for authority and formality is a must for conducting successful business in the German culture. This implies on the one hand a value of academic accomplishments and formal knowledge and on the other hand, the ability to make a clear distinction between public space and private space. Germans make extensive use of the formal pronoun *Sie* (in English, the polite form of *you*), as well as academic titles and formal greetings; being greeted with *Guten Tag, Herr Doktor Müller!* should not be perceived as a peculiarity but rather as a normal manifestation of basic business protocol. Even the young generation nowadays, though working in a corporate environment, which tends to be more relaxed from the point of view of the formality of language, still uses – at least for the first business contact – formal pronouns and greetings. Worth mentioning here would be the fact that in a corporate environment eventually giving up on the use of the formal pronoun *Sie* does not automatically imply a more relaxed communication style; in such a situation, especially in written business communication, Germans

adapted the informal pronoun *du* (in English: the informal *you*) to a capitalized *Du*, thus showing respect towards position, as well as a still strong sensitivity towards rules and protocol. Nonetheless, this respect for authority does not exclude open and sometimes even confrontational discussions, yet always fact-based, between subordinate and superior.

Related to the formality of the business protocol, one should also mention the clear distinction between private and public space. In a business context, interactions tend to be unemotional and fact-driven, therefore the “small-talk” that might be expected in a business meeting should be limited in length and information, being in fact viewed as part of the business protocol. First impressions are highly important to Germans and may impact upon the outcome of a business relationship with a German counterpart. Therefore, despite the straightforwardness and honesty of messages, many taboo topics are to be avoided in a “small-talk” situation, so as not to compromise the business relationship. Germans do value long-term relationships not only between co-workers, but also with customers, yet such a relationship is created based on the quality and reliability of services and products, on the one hand, but also on knowing and applying the fundamentals of business protocol. According to the authors of a rather known German book – *Business Etikette in Deutschland*, a highly important factor for successful business in Germany lies in the HOW of a meeting [5], thus emphasizing the importance of knowing the cultural values and beliefs of the Germans.

4. LANGUAGE MATTERS!

The focus on verbal communication, rather than the non-verbal one, is a feature of low-context cultures, but in the case of the German culture it is also the choice of language that matters in business context. Nowadays the trend of Anglicisms seems to invade even the business space in Germany, especially in a corporate environment. It is thus not unusual to hear of a *Manager* or a *CEO* instead of the traditional German terms *Geschäftsführer* or *Vorstandsvorsitzende*, to give but one example. Yet, this current invasion of Anglicisms – known under the rather pejorative term “Denglish” – is regarded as a deviation from the norms not only of the language, but also of the business protocol.

Extensive studies in linguistics and social sciences focus on the impact of English upon German and most of them emphasize the potential threat of an extensive use of Anglicisms. Numerous examples of Anglicisms are to be found in the advertising industry, such as Nivea which uses slogans emblematic for the Denglish phenomenon, for instance: “Energy Creme Q10” or “Double Action Waschgel”, thus combining English and German words. However, a survey conducted in Germany in 2003 by the company Endmark AG Köln showed that English words and slogans are fully understood by less than 50% of German respondents (Kick, 2014, pp. 67 ff.). Some famous examples of such

misunderstandings are mentioned in an article published in 2008 in the online version of the newspaper *Spiegel*, according to which the slogan of Douglas perfume stores “Come in and find out” was misinterpreted by the German public as “Come in, but then go back again”, emphasis being thus placed on the words “in” and “out”. Beck’s used to have the slogan “Welcome to the Beck’s Experience”, which was not successful, since most Germans associated the last word with “experiment”. Even though specialists in the advertising field argue that “English slogans are easier to remember and convey positive features, even if they are not fully understood” (Kick, 2014, p. 79), these two example would rather suggest the fact that Germans are still sensitive to language: Whereas fully English slogans, such as those proposed by Douglas or Beck’s were rather unsuccessful in the German culture, slogans using a mixture of English and German elements, such as Nivea’s, are still being used. The “Ich bin ein Berliner” speech, that Kennedy delivered in Berlin, supports this idea: despite a tiny word that could completely change the meaning of the entire phrase, the use of the German language guaranteed the success of the entire speech.

5. CONCLUSIONS

Every country has its own way of communicating ideas, in other words its own way of saying things. Either in business, or in the social life, everybody stands to benefit from more effective communication skills. Therefore, in today’s globalized society the ability to communicate across cultures should be a must, since sometimes failing to recognize and adapt to the world’s cultural diversity can mean the difference between success and failure.

One fundamental aspect for effective communication is to understand the culture of the country. Kennedy’s speech, which was a starting point for this article, shows that despite certain difficulties or even unintentional errors, the effort in understanding one’s culture may be the ultimate key to success.

NOTES

- [1] According to Ted Sorenson’s memoir *Counselor: A Life at the Edge of History* (2008) (apud Rosenthal, 2008).
- [2] This can be heard on any recording of the speech. Kennedy actually said the sentence “Ich bin ein Berliner” twice throughout the less than 10-minute speech (JFK Berlin Address, https://upload.wikimedia.org/wikipedia/commons/3/3a/Jfk_berlin_address_high.ogg).
- [3] See, for instance, Peter W. Cardon’s article *A Critique of Hall’s Contexting Model* (Cardon, 2008).
- [4] This is in fact the title of a famous book, written by the Swedish author Gillis Herlitz and published for the first time in 1989 in Sweden.
- [5] The original quotation in German: “...das WIE beim Auftreten ist ein erfolgskritischer Faktor höchster Priorität” (Graff and Schaupp, 2006, p. 2).

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SOCIAL CHALLENGES REGARDING USE OF HUMAN CAPITAL IN THE CONTEXT OF THE COVID-19 PANDEMIC

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ABSTRACT

Formation of effective health care systems enjoys a great interest in the conditions of perfecting national healthcare system. Financing is one of the main factors determining the sustainable functioning of the health system and social protection of the population, and create favourable conditions to meet the needs of the population in healthcare quality. The purpose of this paper is to underline the importance of the human capital in the social and economic context and the role of social and health funding in pandemic situation of the Republic of Moldova.

Keywords: human capital; compulsory medical insurance; social insurance; health care system.

JEL Classification: J24

1. INTRODUCTION

The health of the population is a basic element in the harmonious development of the state and a key element of economic security being in direct correlation with the situation of the national economy and the political stability of society. Health is not only one of the basic human rights, but also an element of the welfare state, a necessary condition for the progress of modern society.

The Republic of Moldova has recognized the fundamental role of health and social security protection as an essential condition that contributes to increasing the quality of life of the population, as well as to the development of human capital. The country's national security and economic development largely depend on the functioning of an efficient system of financing health care and social protection in order to preserve the health of the population as the main productive force of society.

2. THE RELEVANCE OF HUMAN CAPITAL IN THE HEALTH AND SOCIAL PROTECTION SECTORS

Human capital is an essential component of a country's economic competitiveness, and investment in human capital becomes a priority for the country's sustainable development, especially considering the ageing population.

In terms of health, it produces an improvement in individual personal development skills, as well as ensuring economic security for individuals in the future. A healthy population sees an increase in life expectancy and an extension of the life cycle. The hope of future gains will also be realized with the individuals who are most willing to invest in education, health and to constitute a financial saving (Stoican, 2012).

Voicu (2004) establishes the links between human capital through its components: health, education, and social development. He considers that the lack of long-term access to health and education services leads to a decrease in the capacity of people for social integration, and indirectly, to a negative impact on the chances of obtaining a profession, in the absence of schooling, or a reduced capacity to work through physical damage, which will influence the general economic situation of the country.

Dobrynin A. analyzing the concept of human capital explains this term by the individual's possession of the stock of health, knowledge, skills, motivations that contribute to increasing labour productivity by influencing income growth. (Dobrynin and Dyatlov, 1999).

In his research Koritskiy A. noted that the most important form of investment in human capital is the protection of health and the provision of healthcare to the population, which would lead to a reduction in illness and mortality, an extension of human working hours and an increase in the use of labour. (Koritskiy, 2013)

In this context, we do support this view and note that, at the macroeconomic level, the decisive role in the formation of human capital belongs to health capital, which emphasizes the importance of state policy in the field of health care. Thus, we specify that public expenditures for health care are presented in the form of investments in the capacities of individuals to obtain income in the future.

Vodogreeva L. analyzes the health capital as a component of the social capital that accumulates during the life of the individual, also due to public expenditures for health care, education, social assistance. (Vodogreeva, 2020)

Public financing of the health care system in the Republic of Moldova refers to the financial sources that are formed in the state budget, the budgets of territorial administrative units, and the funds of compulsory health insurance.

Public financing of the health care system is mainly based on the system of compulsory health insurance, which has the basic role in covering the expenses for medical services. The financing of social protection is carried out from the state social insurance budget, the state budget, and the budgets of the territorial administrative units.

In the current period, marked by the COVID-19 pandemic in hand with the unprecedented actions required by the national health care system, it is essential to analyze the financing of health care and social protection of the population of the Republic of Moldova in order to solve major problems affecting the social field.

3. ANALYSIS OF HEALTH AND SOCIAL PROTECTION FINANCING IN THE REPUBLIC OF MOLDOVA

In order to elucidate the specific financing of the health care and social protection system in the Republic of Moldova, we will reflect the share of public expenditures on social protection and public expenditures on health care in GDP, as well as per capita expenditures for the first semester of 2020 compared to the same period of 2019. (The Ministry of Finance, 2020a)

Thus, from the data in Table 1, we observe the increase of the share of expenditures on social protection in GDP in 2020 compared to 2019 by 1.5 pp, as well as the increase of the share of expenditures on health care in GDP in the analyzed period by 0.62 pp.

Table 1 shows the increase in public expenditures on social protection per capita in 2020 compared to 2019 by 8.8 pp, and public expenditures on health care per capita in 2020 increased by 13.6 pp compared to year 2019.

Thus, in the Republic of Moldova in the first semester of 2020, an amount of 4807, 3 MDL were spent per capita for social protection and 1550,2 MDL for health care.

Protection and investment in human capital is more important than ever against the backdrop of the COVID-19 pandemic, as it could serve as a foundation for a sustainable and inclusive recovery of future development.

The pandemic highlights the importance of robust health care systems, resilient and flexible education systems, and social protection programs that provide support to all those in need.

Table 1. Analysis of the share of social protection and health care expenditure as a share of GDP, and social protection and health care expenditure per capita

| Indicators | 01.07.2019 | 01.07.2020 | Change, % |
|----------------------------------------------------------------|-------------------|-------------------|------------------|
| Gross domestic product, million MDL | 92143 | 88314 | -4.2 |
| Population number, mil. | 2.69 | 2.64 | - 1.8 |
| Expenditure on social protection, million MDL | 11888.2 | 12691.2 | +6.8 |
| Expenditure on health care, million MDL | 3672.5 | 4092.6 | +11.4 |
| <i>Share of social protection expenditure-to-GDP ratio, %</i> | <i>12.9</i> | <i>14.4</i> | <i>+1.5</i> |
| <i>Share of health care expenditure-to-GDP ratio, %</i> | <i>3.98</i> | <i>4.6</i> | <i>+0.62</i> |
| <i>Public expenditure on social protection per capita, MDL</i> | <i>4419.4</i> | <i>4807.3</i> | <i>+ 8.8</i> |
| <i>Public expenditure on health care per capita, MDL</i> | <i>1365.2</i> | <i>1550.2</i> | <i>+13.6</i> |

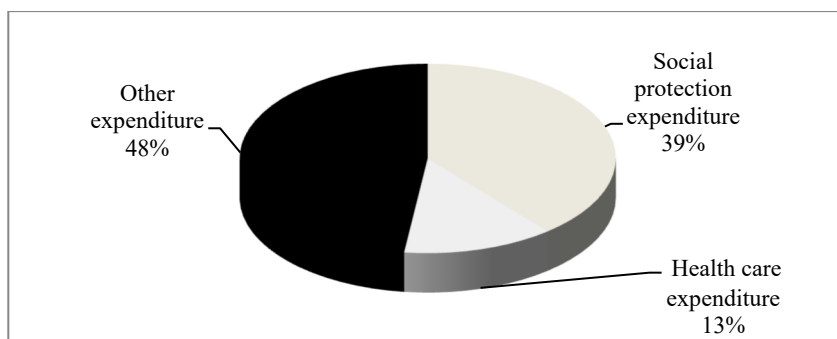
Source: prepared by the authors based on the data from the National Bureau of Statistics of the Republic of Moldova (2020) and The Ministry of Finance (2020b)

In order to mitigate the impact of COVID-19 on health and employment, the Ministry of Finance of the Republic of Moldova and the Development Bank of the Council of Europe signed on August 4, 2020 a loan agreement worth 70 million Euros. The loan is structured in two components:

1. Health - in the amount of 40 million Euros, to finance the following expenses: acquisition in emergency procedures of medical equipment and consumables, rehabilitation and transformation of medical spaces / units, mobilization of additional expertise, to ensure emergency response measures to COVID -19.
2. Support for small and medium-sized enterprises worth 30 million euros to finance working capital and investment needs of SMEs affected by the crisis, helping them to maintain viable jobs.

During the analyzed period, the national public budget for health care and social protection contributed considerably to the provision of medical and social services to the entire population of the Republic of Moldova. Thus, the public sector participated in the field of health care and social protection, being a public service with special characteristics. And public expenditures for health care and public expenditures on social protection are component parts of expenditures for socio-cultural actions representing social services that lead to the creation of national income, thereby demonstrating a productive character and contributing to the economic and social development of the country.

We intend to further analyze the share of expenditures on social protection and health care in the national public budget for the first half of 2020.



Source: prepared by the authors based on the data from the Ministry of Finance (2020b)

Figure 1. Share of social protection and health care expenditure in total public expenditure

From the data in Figure 1, we see that the share of social protection expenditures constitutes 39% of the total public expenditure in the first half of 2020, and health care expenditure constitutes 13% of the total public expenditure. Thus, both types of expenditure constitute 52%, which means that the state allocates considerable financial resources for the social field in order to insure the risk of disease and social risk.

Table 2. Analysis of income and expenditure of compulsory health insurance funds in the Republic of Moldova

| Indicators | 01.01.2020 (approved) | 18.09.2020 (rectified) | Change, million MDL |
|-----------------------------|--------------------------|---------------------------|------------------------|
| Income, million MDL | 8383.4 | 8500.8 | + 117.4 |
| Expenditure, million MDL | 8383.4 | 8917.4 | +534.0 |
| Budget balance, million MDL | - | - 416.6 | - 416.6 |

Source: prepared by the authors based on the data from Law no. 174/2019 on mandatory health insurance funds for 2020 and Law no. 175/2020 for the amendment of Law no. 174/2019

In this context, it is important to further analyze the financial resources of the state social insurance budget and the compulsory health insurance funds for 2020 from the approval of 27.12.2019 to 18.09.2020 with the corrections occurred against the backdrop of the COVID-19 pandemic crisis.

According to the indicators in Table 2, for 2020 the funds of the compulsory health insurance were approved for revenues in the amount of 8383.4 million MDL and for expenses in the amount of 8383.4 million MDL by Law no. 174 of 19.12.2019 on mandatory health insurance funds for 2020 (art. 325).

And in accordance with the amendments to the Law no. 174 of 19.12.2019 on mandatory health insurance funds for 2020, on 11.09.2020, revenues in the amount of 8500.8 million MDL and expenses in the amount of 8917.4 million MDL were approved, thus a deficit in amount of 416.6 million MDL was recorded.

The deficit was influenced by the increase of the expenditures of the funds of the mandatory health insurance by 534.0 million MDL.

We intend to further analyze the expenditure sub-programs of the mandatory health insurance funds for 2020 in order to highlight the use of financial resources in the context of the COVID-19 pandemic.

Table 3. Analysis of the subprograms of expenditures of the Compulsory Health Insurance Funds in the Republic of Moldova

| Indicators | 01.01.2020 (approved) | | 18.09.2020 (rectified) | | Change | |
|---------------------------------------------------------------------------|--------------------------|------------|---------------------------|------------|----------------|-------------|
| | million MDL | % | million MDL | % | million MDL | % |
| Expenditure, total | 8383.4 | 100 | 8917.4 | 100 | +534.0 | +6.4 |
| FAOAM administration | 87.4 | 1.1 | 87.4 | 1.0 | 0.0 | - |
| Primary health care | 2257.8 | 26.9 | 2358.6 | 26.4 | + 100.8 | +4.5 |
| Specialized outpatient medical care | 777.5 | 9.3 | 810.8 | 9.1 | + 33.3 | +4.3 |
| Community and home health care | 68.1 | 0.8 | 72.5 | 0.8 | + 4.4 | +6.5 |
| Emergency pre-hospital care | 706.6 | 8.4 | 805.2 | 9.0 | + 98.6 | +13.9 |
| Hospital care | 4191.7 | 50.0 | 4485.3 | 50.3 | + 293.6 | +7.0 |
| High performance medical services | 224.3 | 2.7 | 227.6 | 2.6 | + 3.3 | +1.5 |
| Management of the AOAM reserve fund | 10.0 | 0.1 | 10.0 | 0.1 | 0.0 | - |
| National and special programs in the field of health care | 40.0 | 0.5 | 40.0 | 0.5 | 0.0 | - |
| Development and modernization of institutions in the field of health care | 20.0 | 0.2 | 20.0 | 0.2 | 0.0 | - |

Source: prepared by the authors based on the data from Law no. 174/2019 on mandatory health insurance funds for 2020 and Law no. 175/2020 for the amendment of Law no. 174/2019

From the data of Table 3, analyzing the subprograms of expenditures of the funds of compulsory health insurance for 2020, we notice that the largest share is

the financing of hospital health care of 50%, as well as the financing of primary health care in the amount of 26.9%.

After the amendments to the Law on Mandatory Health Insurance Funds, the increase of the financial resources allocated for the subprograms was highlighted: hospital medical assistance by 293.6 million MDL, primary health care by 100.8 million MDL and pre-hospital emergency medical care by 13.9%.

Thus, there were no increases with reference to the administration of mandatory health insurance funds, the management of the reserve fund, national and special programs in the field of health care and the development and modernization of institutions in the field of health care.

This is explained by the importance of allocating financial resources for health insurance expenditures, so taking into account the measures to reduce the impact of the COVID-19 pandemic is not a priority to make capital investments for modernization or development of institutions.

The relations between the components of the National Public Budget are achieved through inter-budgetary transfers, the volume of which is estimated in the process of allocating expenditures by types of budgets, in accordance with the competencies provided by the legislation.

Inter-budgetary relations between the state budget and the State Social Insurance Budget are achieved by:

- transfers with special destination for the granting of social benefits and other expenses, which, according to the legislation in force, are borne from the state budget through the State Social Insurance Budget;
- transfers from the State Budget to cover the insufficient revenues of the State Social Insurance Budget, if the resources State Social Insurance Budget (BASS) does not cover its expenses.

The volume of special purpose transfers is estimated by the Ministry of Health, Labour and Social Protection based on the proposals of the BASS administrator in accordance with the legislation in force on types of social benefits, based on their size and the estimated number of beneficiaries for that period.

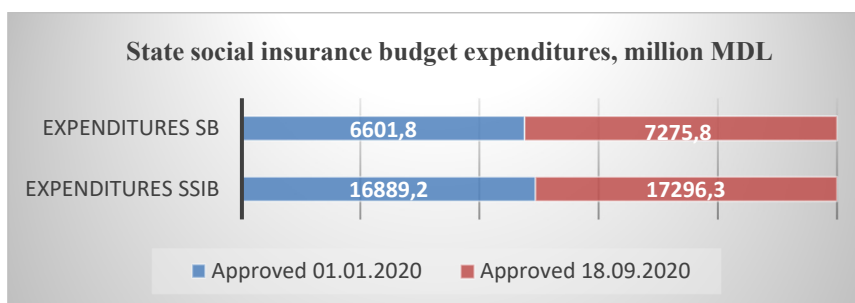
According to the Law no. 173/2019, the state social insurance budget for 2020 is approved for revenues in the amount of 23491.0 million MDL and for expenditure in the amount of 23491.0 million MDL. Following the rectification of the budget, according to Law no. 174/2020 for the amendment of the Law on the state social insurance budget for 2020 no.173/2019 is approved for revenues in the amount of 24572.1 million MDL and for expenditure in the amount of 24572.1 million MDL, with an increase in both revenues and expenditures of 1081.1 million MDL, which is reflected in Table 4.

Table 4. Revenues and expenditures of the State Social Insurance Budget

| Indicators | 01.01.2020 (approved) | 18.09.2020 (rectified) | Change (rectified compared to approved) |
|--------------------------------|--------------------------|---------------------------|--------------------------------------------------|
| Revenues, total million MDL | 23491.0 | 24572.1 | + 1081.1 |
| Expenditure, total million MDL | 23491.0 | 24572.1 | + 1081.1 |
| Budget balance, million MDL | 0.0 | 0.0 | 0.0 |

Source: prepared by the authors on the basis of the data from Law no. 173/2019 on the state social insurance budget for 2020 and Law no. 174/2020 for the amendment of the Law on the state social insurance budget for 2020 no. 173/2019

The volume of transfers to cover the shortfall of BASS revenues is determined as the difference between the estimated BASS own resources and expenditures for that period. BASS's own resources include the revenues obtained from the compulsory state social insurance contributions, the cash balance in the BASS account at the end of the previous year, as well as the transfers from the state budget to compensate the difference in the rate of state social insurance contributions in the agricultural sector and compensation of cancelled amounts of compulsory state social insurance contributions. BASS's own expenditures are BASS expenditures, except for special purpose transfers from the state budget.



Source: prepared by the authors on the basis of the data from Law no. 173/2019 on the state social insurance budget for 2020 and Law no. 174/2020 for the amendment of the Law on the state social insurance budget for 2020 no. 173/2019

Figure 2. State social insurance budget expenditures

Analysis of data on inter-budgetary relations, reflected in Figure 2, in terms of the amount of state social insurance budget expenditures provided for the budget year 2020 on sub-programs, records an increase of 407.1 million MDL

from the state social insurance budget and 674 million MDL from the state budget (rectified compared to the approved 2020).

Table 5. Analysis of State Social Insurance Budget expenditures

| Indicators | 01.01.2020 (approved) | | 18.09.2020 (rectified) | | Change (rectified compared to approved) | |
|-------------------------------------------------------------|--------------------------|-------|---------------------------|-------|--------------------------------------------------|------------|
| | million MDL | % | million MDL | % | (+,-) | % |
| Expenditure, total | 23491.0 | 100 | 24572.1 | 100 | 1081.1 | 4.6 |
| Social protection | 23491.0 | 100 | 24572.1 | 100 | 1081.1 | 4.6 |
| Administration of the public social insurance system | 217.8 | 0.93 | 225.1 | 0.91 | 7.3 | 3.3 |
| Protection in case of temporary incapacity for work | 608.9 | 2.59 | 783.3 | 3.19 | 174.4 | 28.6 |
| Protection of the elderly | 14504.9 | 61.75 | 14630.0 | 59.54 | 125.1 | 0.9 |
| Protection after the loose of bread-winner | 289.1 | 1.23 | 276.3 | 1.12 | - 12.8 | - 4.4 |
| Family and child protection | 2473.4 | 10.53 | 2489.7 | 10.13 | 16.3 | 0.66 |
| Protection of the unemployed | 32.0 | 0.14 | 156.2 | 0.64 | 124.2 | 388.1 |
| Social protection of people with disabilities | 2941.3 | 12.53 | 2935.3 | 11.95 | - 6 | - 0.2 |
| Additional support for certain categories of the population | 1012.3 | 4.31 | 1594.4 | 6.49 | 582.1 | 57.5 |
| Social protection in exceptional cases | 1006.6 | 4.27 | 1138.0 | 4.63 | 131.4 | 13.0 |
| Social protection of certain categories of citizens | 404.7 | 1.72 | 343.8 | 1.40 | - 60.9 | - 15.0 |

Source: prepared by the authors on the basis of the data from Law no. 173/2019 on the state social insurance budget for 2020 and Law no. 174/2020 for the amendment of the Law on the state social insurance budget for 2020 no. 173/2019

In the context of the information on inter-budgetary relations, in Table 5 was carried out the analysis of the expenditures of the state social insurance budget by sub-programs, approved/ rectified for 2020, where it is observed an increase in

social protection expenditures in the amount of 1081.1 million MDL, which is 4.6%.

The table shows that the highest increase belongs to “Protection of the unemployed”, of 124.2 million MDL, amounting to 388.1%, followed by “Additional support for certain categories of the population” with 582.1 million MDL, amounting to 57.5% and “Protection in case of temporary incapacity for work” with an increase of 174.4 million MDL or 28.6%. At the same time, there is a decrease in expenditure on “Social protection of certain categories of citizens” by 60.9 million MDL, constituting 15.0%, followed by “Protection after the loose of bread-winner” of 12.8 million MDL, constituting 4.4% and “Social protection of persons with disabilities” with a decrease of 6 million MDL or by 0.2%.

According to the Law no. 127 of 09.07.2020 on the granting of compensation to the descendants of medical staff who have died as a result of medical activity in the fight against COVID-19, the amount of this allowance in the case of children shall be calculated in the amount of 75% of the average monthly income earned and declared in the last 12 calendar months preceding the month of death and in the amount of 50% in the case of parents from the same calculation basis, which may not be less than 50% of the average monthly salary savings at the date of calculation of the allowance. The months in which the person was on leave shall be replaced by the same number of calendar months immediately preceding the period included in the calculation.

Thus, in order to optimize social protection expenditures, the following measures can be proposed:

- increase spending efficiency, focus on the quality of resource allocation and results;
- strengthening transparency in the use of public money;
- implementation of planning processes in order to optimize these expenses.

Sustainable development can be characterized as development that takes place without the occurrence of major imbalances between the structural components of a system.

A system is sustainable when it consumes less than is available or when there are the necessary resources for its optimal operation.

In the context of reducing the impact of the COVID-19 pandemic, anti-crisis social measures have been taken to mitigate the negative effects on the living standards of the population, such as (Government Decision no. 398/2020):

- 1) measures to support the unemployed during the state of emergency in the amount of 168 million MDL;
- 2) social assistance to citizens during the state of emergency in the amount of 201.9 million MDL;
- 3) proactive measures for employment (of the unemployed) in the amount of 10 million MDL;

- 4) the increase by 71 million MDL of the Population Support Fund, following the modification of its income sources;
- 5) substantial supplementation of the allocations intended for the health care sector, in order to combat the epidemic situation and to prevent its spread in the amount of 1100 million MDL;
- 6) decrease of capital investment expenditures by 2266.7 million MDL from the state budget;
- 7) establishing the unemployment benefit in the amount of 2775 MDL for the registered persons with unemployment status, including those returned to the country;
- 8) granting single allowances amounting to 16 thousand MDL, beneficiaries 1497 persons, employees in the field of defence, home affairs, justice, medical system and other budgetary institutions and public health institutions that contacted COVID-19 infection during the exercise of their duties.

The economic crisis has significantly burdened public finances and led to rising debt and budget deficits. Ensuring the long-term sustainability of public finances is therefore particularly important.

Although emergency intervention with concrete anti-crisis measures for individuals and legal entities is a key priority for the state, those measures with financial impact that will be taken in the future shall not pose risks to budgetary sustainability.

4. CONCLUSIONS

The research of the financing of the health care system and the social protection system is due to the importance of these components of the social sphere in terms of human capital, which is the main wealth of the country. At the current stage, it has been determined that human resources play a decisive role in achieving competitiveness and ensuring the qualitative parameters of the country's economic development.

The main priority of any state is the health of the population. The epidemic caused by COVID-19 is a major shock for the economy of a country, but also for the world. In this regard, there is a need for budgetary measures to increase the capacity of health care and social protection systems, as well as to support particularly affected citizens and sectors.

Depending on the evolution of the pandemic, it is necessary to take action in order to identify additional sources of revenues, while reducing non-priority expenditures, to ensure sustainable financing of the health care system and social protection system of the Republic of Moldova.

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COPING WITH COVID-UNCERTAINTY IN HIGHER EDUCATION: A CROSS-CULTURAL ANALYSIS

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ABSTRACT

The outbreak of the COVID-19 pandemic revealed that traditional higher education institutions in Europe were little prepared for the challenges brought about by the passage to almost exclusive online teaching. This paper is an investigation into University response in Europe, with examples from Romania, the UK, Italy and Spain, in an attempt to analyse the cultural values behind management choices. It also highlights the fact that universities have proven to be resilient institutions that have adapted quickly to the new social and technological challenges.

Keywords: European universities; Covid-19; cross-cultural analysis; cultural values; resilience.

JEL Classification: F55, I23, I28, I29

1. INTRODUCTION

2020 will probably remain one of the memorable years in recent history, as the year in which our lives were put on hold, when we experienced panic, stress, distress, when we lost family members, friends or colleagues, and when we had to adjust quickly to an unprecedented situation: a pandemic that spread quickly from China to the rest of the world, that escalated the pace of change in society, and that raised multiple questions about the future. Due to social distancing restrictions, public institutions and businesses had to resort to tele-working, small companies went out of business, or experienced losses. One of the sectors whose activity was not, generally, discontinued, is education. The purpose of this article is to investigate university response to Covid challenges, in a comparative, synchronic approach.

2. METHODOLOGY AND DATA

Data for this article was collected via webography – the investigation of university websites from Romania (“Alexandru Ioan Cuza” University of Iasi and “Grigore T. Popa” University of Medicine and Pharmacy of Iasi), the UK (University of Oxford and University of Cambridge), Italy (Politecnico di Toriono and Bocconi University of Milan) and Spain (University of Granada). Apart from webography, I have also conducted online interviews with fellow professors and students from the above-mentioned universities, as well as researched documents published online by transnational institutions that specialize in higher education.

Given the fact that the pandemic is still evolving (in September 2020, a new Covid strain was discovered in the UK (Gallager, 2020), in December, another strain was identified in South Africa (Ellyatt, 2020), and in January 2021, a new strain was discovered in Japan (The Japan Times, 2021)), the data that I will report here are invariably partial and limited. Another source of limitations is the increasingly lower amount of time and personal resources that scholars can dedicate to research. A report released by de Gruyter in December 2020, based on a survey of authors who are employed in the academia, found that 48% of scholars who conduct primary research had a lower output in 2020 than in a typical year; 86% of mid-career authors acknowledged that online teaching, grading and student supervision takes more time than anticipated, with 74% of mid-career scholars arguing that the main obstacle to research is online teaching (de Gruyter, 2020, pp. 12-17). I was faced with precisely this obstacle when approaching fellow scholars to ask them to participate in interviews: they all felt overworked, under much psychological strain and unable to dedicate time to anything else but what is mandatory to perform their jobs well. Therefore, I would classify the results reported here as work in progress, to be refined and completed in subsequent articles, based upon research that hopefully, will be conducted in a multicultural team.

The research question that I started from was to what extent culture matters when institutions are faced with a global public-health challenge, which calls for a standardized, global response. I was curious to find out if the classical cultural dimensions identified by Geert Hofstede ground university response and the enforcement of established measures, and if fear of death – in its current variant of fear of infection that could lead to one’s death or to the death of an elderly family member/friend, is a universal emotion that brings about a universal response. I collected my data by researching the official statements made public on the websites of the above-mentioned universities, by conducting online interviews with fellow academics and Romanian and Erasmus students, and by participant observation in the two institutions in which I currently teach, i.e. the “Alexandru Ioan Cuza” University of Iasi and the “Grigore T. Popa” University of Medicine and Pharmacy of Iasi.

Informal discussions with colleagues from Iasi, who shared my interest in how other universities have responded when faced with challenges which we presumed were similar, have led me to the formulation of four questions that I had in mind, when conducting webography and interviews with professors and students were: 1. Was teaching suspended at all, at any point? 2. Was the transition to online teaching facilitated by the institution through logistic support and training? 3. Are there any measures in place to prevent plagiarism? 4. Do teaching staff feel that their institution cares for them? I will interpret my research findings in light of two theoretical models used in Intercultural Communication, which I will briefly outline in the following section.

3. THEORETICAL FRAMEWORK

The theoretical framework of this article is based on Geert Hofstede's cultural dimensions, as developed in his classical *Cultures and Organizations: Software of the Mind* (Hofstede, 1997). In this initial book, Hofstede proposed a 4-dimension model of national cultures, that includes: high power distance vs low-power distance; individualism vs collectivism; masculinity vs femininity, and high uncertainty avoidance vs low uncertainty avoidance.

In a nutshell, these dimensions capture the following traits: High power distance cultures have a strong hierarchy in place, with power concentrated in the hands of few people at the top, who are decision-makers. Power and status are inherited rather than earned, and there is little mobility from the lower ranks to the higher ranks. In low power-distance cultures, on the other hand, hierarchies are flat, power relations are democratic and the social system encourages meritocracy. In individualistic countries, individual achievement matters more than collective achievement and the emphasis is on competition rather than cooperation. In collectivistic countries, belonging to a natural group (family, neighbourhood) is a matter of identity and there is marked respect for traditions. Low masculinity (feminine) cultures are characterized by gender equality and social welfare system well put into place. Cultures with a high masculinity index value competition and assertiveness more than compassion and care. Finally, in high uncertainty-avoidance countries people prefer to know as much as possible in advance, before embarking upon a project or a business deal, so that there would be as few surprises as possible; in low-uncertainty avoidance countries, people tolerate unknown situations and are not worried if certain details are not worked out (*apud* Hofstede Insights, 2021).

Subsequently, Hofstede added two other dimensions: long-term perspective vs. short term perspective, and indulgence vs. restraint. Long-term orientation cultures value long-term planning, saving and hard work, whereas short-term orientation cultures plan for the near future, and people enjoy living for the moment. The indulgence vs restraint dimension, on the other hand, translates the

idea of gratification vs control of the human desire to enjoy life (*apud* Hofstede *et al.*, 2010, pp. 235-298).

Another seminal contribution to our understanding of culture comes from Shalom Schwartz, who identified a typology of basic human values that he considers to be universal; groups of people and individuals, however, assign different degrees of importance to them and prioritize them differently. These values are: 1. *Self-direction* (implying independent thought and action; freedom, creativity, independence, curiosity, self-respect); 2. *Stimulation* (implying excitement and novel elements in our lives, as a response to the basic human need for variation in order to preserve an optimal level of activation); 3. *Hedonism* (i.e. pleasure and enjoyment of life); 4. *Achievement* (i.e. success, influence, ambition); 5. *Power* (social status and recognition, wealth, authority); 6. *Security* (arising from the need for safety, harmony, social and psychological stability, and implying personal and national security, reciprocation of favours, a sense of belonging, social order and health); 7. *Conformity* (translated, into practice, as obedience, self-discipline, politeness, respect for parents and the elderly); 8. *Tradition* (translated, into practice, by devotion, humility, moderation); 9. *Benevolence* (springing from the need for positive interaction and affiliation, and manifested through helpfulness, responsibility, forgiveness, honesty, loyalty, mature love and true friendship); and 10. *Universalism* (manifested though unity with nature, wisdom, equality, social justice, broad-mindedness, protection of the environment, a world at peace) (*apud* Neuliep, 2018, p. 130).

In what follows, I will report my findings on how various universities across Europe have responded to the Corona virus pandemic and then interpret their response in light of cultural dimensions and values.

4. UNIVERSITY RESPONSE TO THE CORONA-VIRUS PANDEMIC IN EUROPE

In reporting my findings on university response in Europe, I will start with Romanian institutions since I have more data about them, collected via participant observation, webography and interviews. In Romania, the first case of Corona virus infection was registered on February 26, 2020. Even before that date, three universities in the western part of the country decided to suspend face-to-face teaching activities mainly due to the fear of infection from Romanians who were seasonal workers or migrants in Western countries, returning home by car through the districts in which those particular universities were located, or because students or teaching staff had been abroad [1]. At the level of the entire country, face-to-face teaching was suspended in mid-March.

In Alexandru Ioan Cuza University of Iasi, for instance, we switched to online teaching after the 13th of March 2020, without any prior notice and without any training as to how to deliver online courses. Initially, we were informed that this measure was to be valid until the end of the month. The educational process

was disturbed not only by the fact that both teaching staff and students had to manage as they could, in terms of logistics, but also by the fact that many students perceived these two weeks as unplanned holidays and did not take their study materials with them when they left student halls. Given the restrictions imposed on leaving one's residence, unless teachers had an electronic copy of the teaching material, it was hard to provide one quickly as not all teachers had a scanner at home. In the first days of online teaching, we used our phones to take pictures of the study materials and shared them with students on social media or via what's up.

In the Faculty of Economics and Business Administration where I teach, we were instructed that we would be teaching via Moodle, the platform on which we were supposed to upload class materials before that particular class was scheduled, and that we should be available on chat to discuss them with students. We found Moodle a very poor medium of communication, as students were not inclined to chat with professors. In this context, we resorted to Skype or to Zoom – a platform little known and used in Romania before March 2020.

In “Grigore T. Popa” University of Medicine and Pharmacy of Iasi, the approach was different: the week of 16-22 March was declared a week of holidays, and it was used by the Network Operations Center to create classes on Microsoft Teams, to assign students and teachers to them, and to prepare and deliver trainings to the teaching staff. The one-week spring holiday, usually held after Easter, was cancelled so that the semester could still be 14 weeks long. In the fall semester of the academic year 2020-2021, theoretical classes were taught online and recorded, while lab activities and hospital practice took place on site, in groups of maximum 12 students, observing social distancing and sanitation rules. In oral exams, students had to have their cameras on and show their ID before being examined.

In the United Kingdom, face-to-face teaching was replaced by online teaching as of the 20th of March 20, 2020 [2]. The switch from on-site to online was relatively easy; British universities already had the infrastructure in place, as certain programmes were already taught online or had part of the teaching done online. The more serious problems were encountered by international students, who had to choose between returning home (if flights were available) and remaining in England, which sometimes implied finding alternative accommodation [3].

The interview that I conducted with a professor from Cambridge University revealed that no special measures were taken to avoid student plagiarism, as academic misconduct was already regulated prior to the pandemic; he also reported that teaching staff felt that the institution supported them. The webography that I conducted showed that British universities had a well-designed communication flow, with rubrics for students, for staff and for staff and students, when the information was valid for both categories [4]. Students were proactive

in asking university management to provide alternative forms of evaluation, given that not all students had a stable internet connection. (Batty, 2020)

In Italy, the country that was the most severely hit by the first wave of the corona virus, universities in the northern part of the country took quick actions: Politecnico di Torino suspended face-to-face teaching on the 23rd of February 2020, after the health authorities recorded some cases of infection in Piemonte. What was planned to be a one-week disruption became a period of online teaching that was extended until the month of May. The transition to online education was easy because even before the pandemic, the university was using its own platform (Ateneo) on which recorded classes were uploaded for distance-education students. The University management was involved in insuring the observance of quality standards and student access to study materials, even when this implied contacting individual professors and asking them to record themselves, when they were reluctant to it, and make the recordings available (Politecnico di Torino, 2020, p. 31).

Similarly, in Bocconi University in Milan, Lombardia (the most affected region in Italy during the first wave of the pandemic), teaching was initially suspended for a week, but eventually the university remained closed until the end of the semester, with online teaching and oral evaluations. My informant reported that for the first two weeks after on-site teaching was cancelled, teachers and students were in touch by Skype, email, Zoom or Google meet, and after that online teaching went on smoothly, with live-streamed and recorded classes. Attendance was not compulsory in the online format, but students realized that it was important to attend because exams were to be as serious and difficult as before. No special measures were taken to prevent plagiarizing, but students were granted limited time for oral exams and those who were obviously reading rather than presenting were penalized. Students and teachers felt the care of their institution through the consistency of internal communication.

In Spain, the government announced lockdown measures as of the 14th of March. Universities remained closed down until the end of the semester. In the University of Granada, one week was needed to prepare for the transition to online teaching and evaluation. Professors who were not technically savvy were helped by students, and those professors who did not actually teach online, but only sent materials, received poor evaluations from students. Measures taken to prevent cheating in the online environment ranged from asking students to be alone in the room when taking the exam, with the video camera of their device positioned in such a way as to capture both the student and the computer screen, to assigning limited time for written, multiple choice tests, to the point that students perceived the tests as speed-races.

5. DATA INTERPRETATION

The overall question that I intended to address in my survey of universities was to what extent national culture matters in higher education institutions' response to the outbreak of the corona virus pandemic. In the seven universities that I refer to in this article, the measures taken were quite similar: the campus was closed, with the provision of accommodation services, when possible, for strained international students (the UK), teaching and evaluation were conducted online, following procedures already in place (the UK) or devising such procedures and communicating them in due time to the academic staff and to students, suggesting, designing or allowing academic staff the freedom to establish their own anti-plagiarism measures (Italy, Spain, Romania).

What my interviews revealed was a sense of solidarity between students and professors, the desire to collaborate and to understand each other's struggles. In times of crisis, the cultural dimension of uncertainty avoidance becomes, practically, irrelevant, as there is no time and no knowledge on which to base one's system of rules and contract clauses that could mitigate risks. Some universities took one or two weeks to prepare, in order to insure a smooth transition to online teaching, but others switched immediately, with or without training their students and staff.

The digitalization of education, which should have been implicit since the establishment of distance-education programmes, was accelerated in the context of the crisis. In my university, distance education used to mean that students would attend face to face classes at the weekend, if they were available, otherwise they had all study materials as paper-based documents (initially), and in recent years, as online documents. In this sense, the exceptional state of teaching under abnormal circumstances led to a certain level of normality, at least in distance-education programmes, in my university.

The cultural dimension of power distance was, to a certain extent, irrelevant as a descriptor of national cultures applied in the context of universities. A global public health threat calls for solidarity, not for hierarchy, at institutional level. Informally, new knowledge hierarchies have emerged, as virologists are the new relevant experts to be listened to. On the other hand, the medium of online communication tends to flatten teacher-student hierarchies, and in Romania, at least, students have felt empowered by it [5]. And even though status-based hierarchies have remained in place, the online medium reduces the power distance between professors and students. The very fact that we have been available on official platforms, as well as on social media, instant messaging phone applications and by phone, has significantly reduced psychological distance.

In terms of masculinity and femininity, country scores did not act as predictors of social action. The pandemic called for policies of care rather than for competition, and the availability of care depended on means rather than disposition. Where I noticed a difference, however, was in the amount of

information that was publicly available, and the provisions that were made for special cases. I could not investigate the internal communications of the foreign universities referred to in this article, but in the Universities from Iasi that I am familiar with, there were few official messages of solidarity, from university management to teaching staff (more in the University of Medicine than in Alexandru Ioan Cuza University), and informal conversations with colleagues from Cuza University brought out disappointment over perceived neglect of teaching staff needs and health issues emerging from long hours of sitting in front of the screen, inside the house, with little visual contact with students who, at the most, had a profile picture, but were reluctant to connect their cameras, or simply did not have one.

As for short-term planning vs. long-term planning and indulgence vs. restraint, the novelty of the situation made no long-term planning possible, and if there was any indulgence, it was only in the first one or two weeks after the lockdown was declared, when there was an expectation of a quick return to the old normal, and the closure of campuses was (mis-)interpreted as holidays – at least by the students whom I interviewed, from Romania and Spain.

When it comes to cultural values, the ones that became prominent, from Schwartz's model outlined above, are self-direction (manifested through the urge for both professors and students to become independent learners and to find, in the case of professors, online resources that would engage students), security (health-related issues, recommendations made public on university websites, dedicated rubrics on their corporate website, to Covid-related news – as it is the case with the University of Granada –, and the university's own contribution to covid-related research – as it was the case with Alexandru Ioan Cuza University and Bocconi university, which has a Covid Crisis Lab), conformity (compliance with regulations, self-discipline, individual measures taken to prevent plagiarism) and benevolence (helpfulness).

These values have contributed to universities' resilience; together with healthcare institutions, public administration and public transportation operators, universities proved to be institutions that adapted quickly to the new social and technological requirements imposed by the Coronavirus pandemic. Furthermore, at pan-European level, as Amanda Crowfoot noticed, during the lockdown and after that, universities:

“have remained very much open as seats of learning and teaching, research and innovation, and societal engagement ... Many have reported doing, in a matter of days or weeks, what would usually have taken months or even years. In addition to innovations in digital learning and teaching, we have seen new ways of keeping students and staff connected, and of working collaboratively” (Crowfoot, 2020).

Probably, these new ways will continue to evolve and be capitalized on in the post-Covid age.

6. CONCLUSION

What my brief analysis pointed out is that country indices based on Hofstede's model cannot be used as predictors of institutional response in a situation of crisis such the one generated by the Covid pandemic. The seven institutions included in this modest study did not respond to the Covid crisis along lines dictated by the national culture, but by national and regional governments, following the logic of expert, public health and virology-based arguments that grounded public policies, formulating and communicating their own decisions according to their recognized autonomous status.

Cultural values, rather than dimensions, can be linked to institutional response, to how it was formulated, communicated and enforced. In addition to the marked neutrality of responses in relation to national culture, it became obvious, to me, that universities are better approached as institutions that have their own culture, rather than as being subscribed to a national culture. Future research could investigate precisely these values that define university culture, in their individual manifestation.

NOTES

- [1] "Vasile Goldis" West University of Arad, "Victor Babeş" University of Medicine and Pharmacy of Timișoara, and "Constantin Brâncuși" University of Târgu Jiu suspended teaching, while "Iuliu Hațieganu" University of Medicine and Pharmacy of Cluj Napoca asked all faculty members and students who had recently travelled in Northern Italy, particularly in Lombardia, Veneto and Emilia Romagna, to observe a 14-day quarantine at home (Digi24, 2020).
- [2] Letter by the Minister of State for Universities, Michelle Donelan, MP (Donelan, 2020). The document is infused with a language of care and concern.
- [3] See Weale (2020) for the dilemmas that students faced.
- [4] See, for instance, University of Oxford (2020).
- [5] In Carol Davila University of Medicine and Pharmacy of Bucharest, following students' complaints about a professor who insisted on students addressing her using her full name and professional title, the latter was suspended from teaching (see G4Media.ro, 2020).

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ETHIC FUNDAMENTALS AND QUALITY OF GOVERNMENT FOR SUSTAINABLE DEVELOPMENT. CASE OF ROMANIA

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ABSTRACT

This article focuses on ethic fundamentals and relates the topic to the broader value framework of quality of governance both at national and subnational level in Romania over the period of time 2004-2017. The evidence strongly supports that the absence of established acceptable ethical norms and when there are, if they are ignored with impunity, the quality of governance is impaired and sustainable development is not possible to be implemented.

Keywords: governance; public values; ethics; efficiency.

JEL Classification: H11, O38, Q01

1. INTRODUCTION

The efficiency of a central or subnational government can be seriously reduced, if its citizens do not legitimate its regulatory policies. Regulations and policies can be accepted as legitimate only if they are fundamentally transparent and based on objective criteria, presented to the citizens in the different stages, as well as the involvement of the citizens in the decision-making process. In order to legitimize their policies, subnational governments must provide transparency about their actions in each stage, as well as about the procedures that underpin the carrying out of subnational government actions. Decentralization, by transferring competences from the central level to subnational governments, has been suggested as an alternative model of government that builds trust, transparency, and accountability, closer to the citizens, being easily legitimate by the citizens. In this point of view, decentralization is strongly correlated with citizen's increased participation in economic, social, and political activities. At the same time, public authorities take decisions all day and every day, and these decisions affect communities, individuals as citizens, as taxpayers or as users of public services. At any stage of the decision-making process, the local public authority

must take care to involve the citizens of the community so that any action is legitimized by their own consent. Otherwise, the actions of the local public authorities will be accompanied in the first phase by the dissatisfaction of the citizens, in the second phase even by possible revolts or protests, following in the third phase to penalize the authority in the elections by voting other candidates.

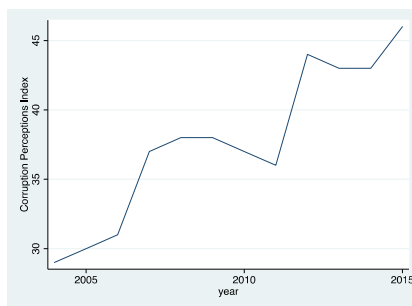
In this context, decentralized governance became a necessity and defines the systematic and harmonious interrelationship resulting from the balancing of power and responsibilities between central governments, other levels of government, and nongovernment actors, and the capacity of local bodies to carry out their responsibilities using participatory mechanisms. The evidence strongly supports that government effectiveness is associated with the economic growth within a country (Bercu *et al.*, 2019).

This article focuses on ethic fundamentals and relates the topic to the broader value framework of quality of governance both at national and subnational level in Romania over the period of time 2004-2015. The rest of the paper presents some preliminary evidence regarding ethic fundamentals and quality of government in Romania.

2. SOME PRELIMINARY EVIDENCE

Indicators of governance are defined by the six composite indicators of broad dimensions of governance (Kaufmann *et al.*, 2011): Voice and Accountability, Political Stability and Absence of Violence/ Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. Through these indicators can be seen and understand the quality of governance in a country.

Corruption Perceptions Index (CPI) ranks countries on how corrupt their public sector is perceived to be on a scale from 100 (very clean) to 0 (highly corrupt) (see Figure 1).

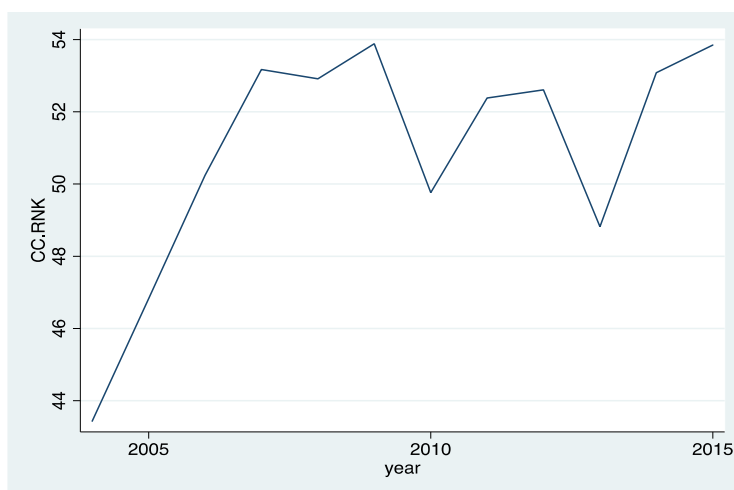


Source: computed by the authors based on Eurostat database (European Commission, 2019a) using Stata 15.1.

Figure 1. Corruption Perceptions Index (CPI) in Romania during 2004-2017

Romania scored 46 points out of 100 in 2015 and 48 points on the 2017 Corruption Perceptions Index reported by Transparency International. Corruption Index in Romania averaged 37.66 points, reaching an all time high of 48 points in 2017 and a record low of 29 points in 2004.

Control of Corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Percentile rank indicates the country's rank among all countries covered by the aggregate indicator, with 0 corresponding to lowest rank, and 100 to highest rank. Percentile ranks have been adjusted to correct for changes over time in the composition of the countries covered by the WGI (see Figure 2).

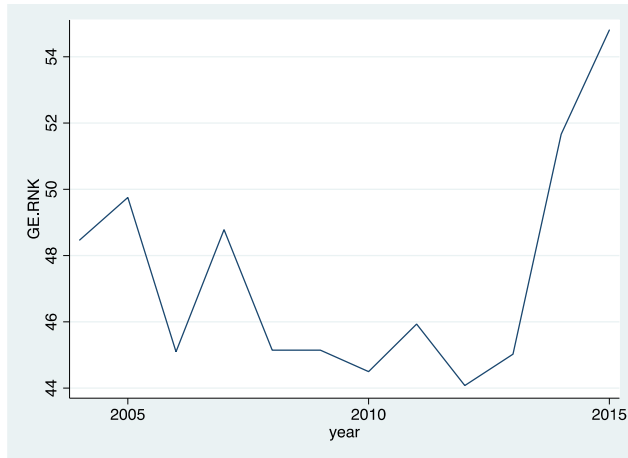


Source: computed by the authors based on Eurostat (European Commission, 2019a) database using Stata 15.1.

Figure 2. Control of Corruption Percentile Rank in Romania during 2004-2015

Romania scored 53.84 points out of 100 on the 2015 Control of Corruption Percentile Rank reported by the World Bank (2020). Control of Corruption Rank in Romania averaged 50.91 points from 2004 until 2015, reaching an all time high of 53.88 points in 2009 and a record low of 43.43 points in 2004.

Government Effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Percentile rank indicates the country's rank among all countries covered by the aggregate indicator, with 0 corresponding to lowest rank, and 100 to highest rank (see Figure 3).

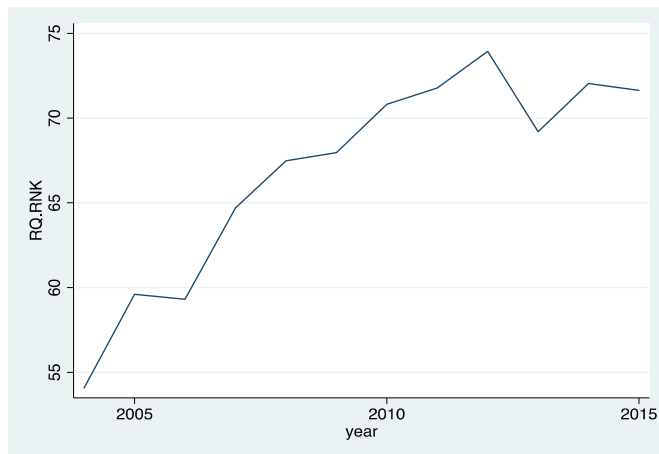


Source: computed by the authors based on Eurostat database (European Commission, 2019a) using Stata 15.1.

Figure 3. Government Effectiveness Percentile Rank in Romania during 2004-2015

Romania scored 54.80 points out of 100 on the 2015 Government Effectiveness reported by the World Bank (2020). Government Effectiveness in Romania averaged 47.36 points from 2004 until 2015, reaching an all time high of 54.80 points in 2015 and a record low of 44.07 points in 2012.

Regulatory Quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development (see Figure 4).

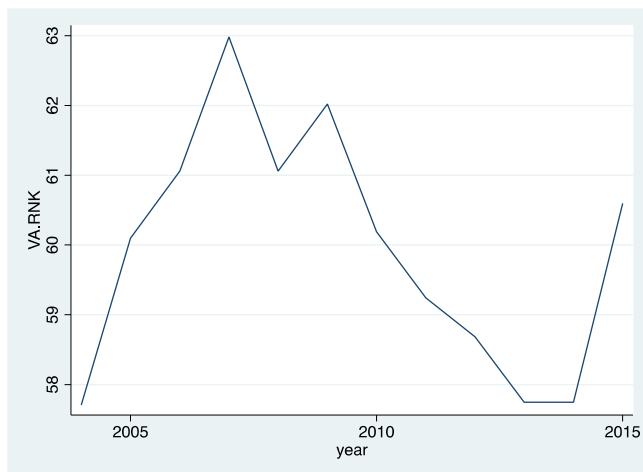


Source: computed by the authors based on Eurostat database (European Commission, 2019a) using Stata 15.1.

Figure 4. Regulatory Quality Percentile Rank in Romania during 2004-2015

Romania scored 71.63 points out of 100 on the 2015 Regulatory Quality reported by the World Bank (2020). Regulatory Quality in Romania averaged 66.87 points from 2004 until 2015, reaching an all time high of 73.93 points in 2010 and a record low of 54.08 points in 2004.

Voice and Accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media (see Figure 5).



Source: computed by the authors based on Eurostat database (European Commission, 2019a) using Stata 15.1.

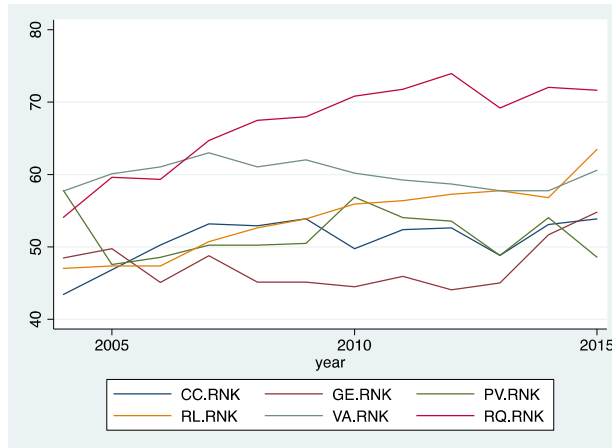
Figure 5. Voice and Accountability Percentile Rank in Romania during 2004-2015

Romania scored 60.59 points out of 100 on the 2015 Voice and Accountability reported by the World Bank (2020). Voice and Accountability in Romania averaged 59.92 points from 2004 until 2015, reaching an all time high of 62.98 points in 2007 and a record low of 57.71 points in 2004.

Rule of Law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism (see Figure 6).

The main aim of ethics trainings for public officials is to prevent corruption and to provide good public service (Viorescu and Nemtoi, 2015). Furthermore, it is essential in developing and enhancing people's capacities and fostering government responsiveness. A stable macro environment and stability in public finances may not be achievable without a strong commitment to price stability by

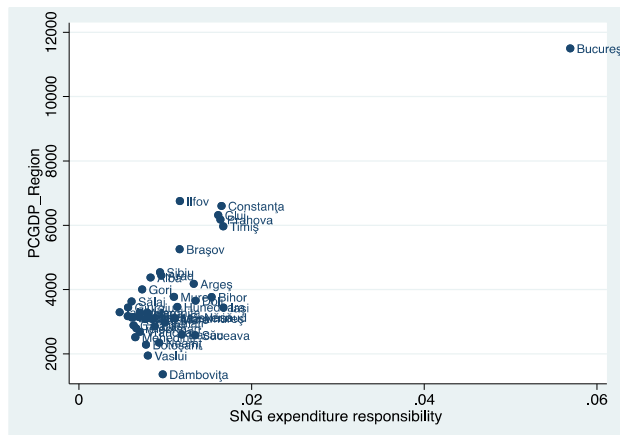
the monetary authority. The inflation rate in the former countries further showed lower volatility.



Source: computed by the authors based on Eurostat database (European Commission, 2019a) using Stata 15.1.

Figure 6. Governance Indicators Percentile Rank in Romania

The quality of subnational government for sustainable development is reflected also by the GDP per capita and the subnational government expenditure responsibility as the share of subnational government expenditure in general government expenditure (see Figure 7).



Source: computed by the authors based on Eurostat database (European Commission, 2019a) using Stata 15.1.

Figure 7. GDP per capita and the subnational government expenditure responsibility in 2015

According to Figure 7, the outlying county is Bucharest, where variables, the GDP per capita and the subnational government expenditure responsibility, are very high. This high gap between Bucharest and the other counties of Romania can be seen in figure 8 also, where is presented the evolution of GDP per capita in all counties-42 of Romania.

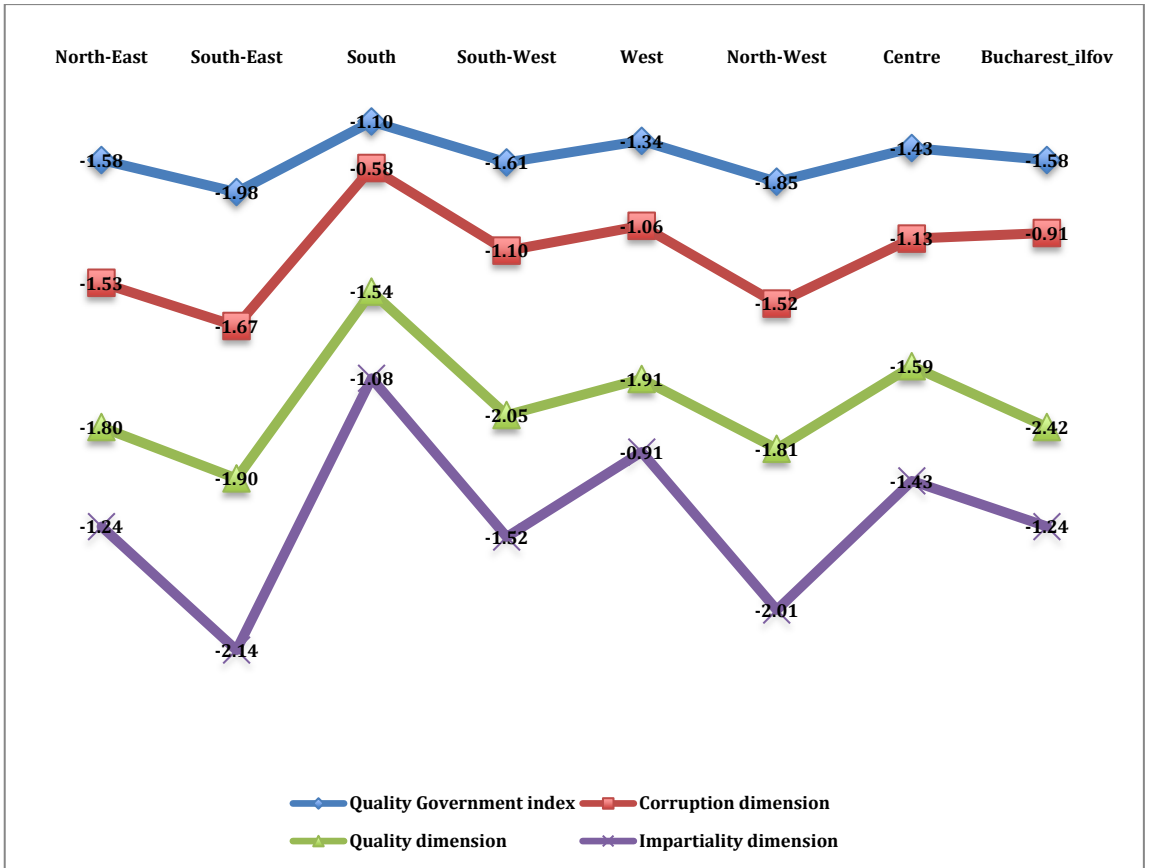


Source: computed by the authors based on Eurostat database (European Commission, 2019a) using Stata 15.1.

Figure 8. GDP per capita dynamic over the period 2005-2015 in Romania counties-42

According to Figure 8, the evolution of GDP per capita is increasing very sharp in Bucharest over the period under analysis. Prahova, Cluj, Ilfov and Constanta register also an increase in GDP per capita.

The European Quality of Government Index (EQI) (see Figure 9) aims at capturing average citizens' perceptions and experiences and is the measure of institutional quality consisting of high impartiality and quality of public service delivery, along with low corruption available at the regional level in the European Union, and the year under analysis is 2017 for Romanian Regions.



Source: computed by the authors based on database of the European Commission (2019b)

Figure 9. Quality of Government Index for Romanian Regions in 2017

3. CONCLUSION

We pay particular attention to the indicators of governance and offer a comprehensive view on the quality of governance and a possible correlation with economic indicators in Romania. Methodological choice of descriptive analyses of indicators of governance, have allowed us to conclude that one of the prime responsibilities of a local or central government must be to build an environment of justice, transparency and trust. These issues are essential for sustainable development.

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LOCAL FISCAL CONSOLIDATION – WHAT ROLE FOR GOOD GOVERNANCE?

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ABSTRACT

There is no doubt regarding the influence of national and local public policies on the general situation and development of local communities. In this context, two major issues are under continuous reflection in theory and practice: the actual quality of governance (and its improvement), and its results from different perspectives (welfare, fairness, transparency, fiscal balance, etc.).

Good governance could be seen as a generic framework for stimulating progress and equity within a society. Considering one of the multiple definitions of good governance, process of decision-making, and considering that this is dimensioned through some principle of the World Bank almost unanimously accepted at global level, we could assume that, respecting those basic principles (voice and responsibility, political stability/absence of violence/terrorism, government effectiveness, quality of regulation, rule of law, corruption control), in fact it actually creates an advantageous context for the improvement of all the public policies (including fiscal consolidation policy), as their outputs intensively dependent on the quality of the decision-making processes.

Particularly, allowing the segment of local budgets governance, it becomes obviously that in the spirit and finalities of good governance (equilibrium, progress, fairness,

transparency, participation, etc.), the local budgets governance is automatically oriented in a similar way, reflecting on the structure and dynamics of local revenues and expenditures, the sustainability of the local budgetary situation, the control of deficits, which generically express results of the local budgetary consolidation efforts.

On this background, the main objective of this paper relates to revealing the relationship between good governance (described through the six world governance indicators –WGI– of the World Bank) and local fiscal consolidation on a timescale of 23 years, from 1996–2018. Based on the empirical results, we formulated adequate conclusions and useful recommendations in matter of public local consolidation and local budgets sustainability.

Keywords: fiscal consolidation; good governance; local budgets; local autonomy; world governance indicators.

JEL Classification: E62, H79

1. INTRODUCTION

Good governance can be generically associated with a management framework aimed at stimulating progress and equity within a society. Considering one of the many definitions of good governance, decision-making process and considering the sizing of the concept by the principles of the World Bank almost unanimously accepted globally (efficiency and effectiveness, rule of law, control of corruption, quality of regulation, political stability and absence of violence, accountability), we can assume that, following these basic principles, a favourable context is actually created for the improvement of all public policies (including those aimed to fiscal consolidation), because their results are strongly dependent on the quality of decision-making processes.

With the increasing role of local budgets in a budgetary system, through the decentralization of public competencies, it is found that they are not always accompanied by clear and stable sources of income, which leads to a permanent discrepancy between the local expenditures and the financial resources covering the local budgets. However, in the case of a limited local autonomy, there is a major risk of diminishing the responsibility and proactive attitude of the local decision-makers, and consequently, of the possibilities of growth and development at the level of the administrative-territorial units.

On the background of identifying the needs of tightening the optimal allocation of local expenditures and increasing local autonomy in the European context, it occurs the need to expose and clarify the relationship between good governance and the process of local public budgets consolidation.

2. LITERATURE REVIEW

Until the present, the governance has been predominantly questioned in relation with economic growth, with the idea that economic development cannot be achieved if governance, the rule of law and democracy have not reached a certain level. While some studies show a positive relationship between

governance and growth (Aron, 2000; Khan, 2009), reinforcing the idea that good governance is an important positive factor for development, distinctly, other studies show that a good score of good governance indicators is not always a guarantee for economic development and growth and that in many countries where the score of good governance indicators is low, economic growth was higher similar to the countries where the good governance score was higher (Kurtz and Schrank, 2007; Kaufmann *et al.*, 2009; Andrews, 2010). Also, other empirical research (Huynh and Jacho-Chávez, 2009) shows that a low level of corruption and government effectiveness are insignificant for economic growth, while its relationship with the variables voice (representation), responsibility and political stability it was extremely nonlinear. However, the authors argue that the results of their research were also influenced by the type of regression used and that government effectiveness must have a strong impact on the economy, an opinion which we support by conducting this study. The relationship between the indicators of good governance and economic growth has been studied in other specialized articles (Huynh and Jacho-Chávez, 2009; Gani, 2011; Omoteso and Mobolaji, 2014). Moreover, indicators of good governance are also studied in relation to other variables, such as development (Bulte *et al.*, 2005; Goldsmith, 2007; Painter, 2012), foreign direct investment (Globerman and Shapiro, 2003; Lambsdorff, 2003), domestic investment (Aysan *et al.*, 2007) but also income distribution (Alesina and Perotti, 1996).

A distinct importance for the present study is also presented by the research on the relationship between governance and decentralization, pointing the idea that good governance (by respecting its principles) can exert an important influence on administrative decentralization but especially on fiscal decentralization, implicitly and on the process of local budgetary consolidation. After all, policies on the decentralization and on budget consolidation are presented in the form of complex decision-making processes, and in theory, the principles of good governance apply to the decision-making process and not to its results (Van Doeveren, 2011).

The multitude of studies on good governance in relation to various macroeconomic variables shows different approaches on how (good) governance of a state influences the development of society. However, the aspect that interests the most for the present study is the revelation of a relationship between the indicators of good governance and the budgetary consolidation, a subject that is quite little debated in the literature. In his own view, the study of this link is of major importance, in the sense that budgetary consolidation, understood as a result associated with increased government efficiency through the optimal allocation of public financial resources, is revealed as a factor in propagating the positive effects of good governance on society development and economic growth. In this sense, we find the work of the authors Barişik and Baris (2017), in which, as they argue, differently from other researches on the effects of good governance, it

directly addresses the impact that World Governance Indicators have on public budgets and budget deficits (budgetary balancing and reduction of public debt, representing, in fact, the targets/ objectives of budgetary consolidation). According to the results of the regression analysis of Barışık and Baris (2017), the increase of the political stability index by one unit, increases the budget balance by 1.83 units and the increase by one unit of the regulatory quality index, leads to the increase of the budget balance by 1.79 units. However, the increase in the voice and responsibility index in the countries included in the analysis has a negative effect on the budget balance. A similar study is led by Tarek and Ahmed (2017), where it is shown that in the case of Middle Eastern countries and the North African region, weaker governance leads to increased public debt to GDP. The authors argue that in order to reduce public debt, state leaders must strive to improve political stability, eliminate violence and improve the quality of legislation and the rule of law, as these variables contribute to lowering government debt. At the same time, state leaders must also implement sound policies and regulations, enabling citizens to express their views effectively. Haan and Sturm (1997) and Woo (2006) also argue that short-term change of governments, the size of their cabinets, and the centralization of budgetary policy decisions (as practical expressions of governance) are important determinants of public debt accumulation.

Governance is studied in relation to many economic variables, but we believe that it can also be studied in relation to indicators from the public administration, in particular with variables related to local budgetary consolidation. In this regard, in the next section we will discuss the particularities of the relationship between good governance and budgetary consolidation.

3. THE INTERACTION BETWEEN BUDGETARY CONSOLIDATION AND GOOD GOVERNANCE – SOME THEORETICAL CONSIDERATIONS

Budget consolidation refers to a set of processes based on decisions and specialized instruments, integrated into public financial policies and with a specific objective, expressing a particular side of governance activity, which consists synthetically in the efforts of public decision-makers to ensure or maintain the health of public finances in the medium and long term. In such a view, the fundamentals and rationale of fiscal consolidation policy must be considered in principle common to those of government as a whole, hence the outputs provided to society are dependent, first and foremost, on the quality of the management act itself, the various facets of it being reunited under the phrase of "good governance". In general, the governance of a state has the significance of ensuring at this level the premises of an optimal functionality of the whole (Agere, 2000; European Commission, 2014), starting from the establishment of a common and adequate (harmonized) framework from a political, social, economic,

financial, fiscal and budgetary point of view, to ensure the achievement of the objectives targeted/ declared in a certain moment or time interval. In this context, the pillars of public governance become the various components of public policy, among which the fiscal-budgetary policy and the monetary policy play a crucial role.

Related to these, the relationship between good governance and budgetary consolidation becomes a bivalent one (see Figure 1) and the process of budgetary consolidation (even seen as a particular episode) will be, by the nature of its link with public authority, ante-conditioned of the quality of public governance associated with the studied system and, conversely, the results of budgetary consolidation will be the basis for the configuration and evaluation of governance in that system.

In the manifestation of this particular relationship, several key levels or steps can be identified to which it is related, respectively, in which the influence of the different factors involved on the budgetary consolidation can be analysed. In this sense, the act of legislation must be considered as the first pillar of budgetary consolidation policies (respectively an indirect instrument of it) by the fact that government programs aimed at strengthening public finances, although essentially political decided, are generated, debated and amended within a legislative process that has its own conditions, meant to guarantee fiscal prudence, rigorous budgetary substantiation, limiting the level or dynamics of budgetary variables in certain contexts or socio-political conditions, etc. The role of the legislative act on the formation and allocation of public financial resources is also emphasized in the literature (Johnson and Stapenhurst, 2008; Posner and Park, 2008).

A second pillar identified in the relationship between budgetary consolidation and good governance refers to structural reforms, representing integrated actions of policy programs aimed at goals such as: reducing unemployment, improving and maintaining the health of the population, improving education, reducing income inequality, fiscal equity, social inclusion, efficiency of the state administrative apparatus, restructuring/ modernization of some branches of the economy, economic growth, etc. Fiscal consolidation is conditioned by the reform actions, especially by those in the fiscal fields (establishment of an independent fiscal body - Fiscal Council, improvement of the fiscal equity, etc.), health, education, economic, etc., constituting premises for optimizing the level and dynamics of budget revenues and expenditures, and on longer term for increasing the fiscal base and the health of public finances, in particular, through the rigor and equity of the fiscal system, improving social capital and through balanced economic growth. A study on the impact of locally conducted reforms in Ireland for 2014 (Turley and McNena, 2016) shows that they have led to a reduction in vertical fiscal imbalances and increased local self-government.

A third pillar in the relationship between budgetary consolidation and good governance refers to the functionality of institutions, a concept that includes aspects related to the logical, clear and coherent structure of institutions, a low level of bureaucracy, receptivity, competence, administrative capacity, etc. The functioning of public institutions imprints a certain configuration on public finances, especially on budget expenditures, where inter-administrative transfers can in many cases be the main source of funding for these institutions. The functionality of public institutions along with the quality of regulation represent essential premises for the implementation of public-private partnerships (interpreted in our study as a result of local budgetary consolidation in a good governance framework), as demonstrated by the empirical study of Sabry (2015).

The relationship between budgetary consolidation and good governance, also reflecting the key steps (legislative act, structural reforms, functionality of institutions) in its manifestation is represented in Figure 1.



Source: the authors

Figure 1. The relationship between budgetary consolidation and good governance

The public sector, considered by its size, represents one of the most important actors for the economy of a country and therefore, also a factor of influence on its progress. Thus, although the subject is quite little researched and debated in the extant literature, where the concept of good governance is rather studied in relation to economic growth and development and other macroeconomic variables, we believe that the (positive) relationship between good governance and budgetary consolidation needs to be highlighted. In this sense, we assume that the budget consolidation process and its outcome can be supported and improved by respecting the principles of good governance (efficiency and effectiveness, rule of law, control of corruption, quality of regulation, competence and capacity,

responsibility, sustainability and oriented long-term, sound financial management, etc.) by national and local governments.

4. GOOD GOVERNANCE PRACTICES IN THE EU MEMBER STATES – COMPARATIVE ASPECTS

According to the European Commission (2001), the concept of good governance consists of a list of principles - openness, participation, responsibility, efficiency, and coherence. The definition thus emphasizes the role of the state, with principles of openness, efficiency, and coherence and, to a lesser extent, the role of citizens in decision-making processes.

The approach to the principles of good governance varies from one international organization to another, but we find that the most recognized principles of good governance at the international level are those developed by the World Bank, according to which it has developed a set of six indicators - Voice and responsibility, Political stability/ Absence of violence/ Terrorism, Effectiveness of government, Quality of regulation, Rule of law, Control of corruption - which measures good governance in almost all countries of the world, they are also used in the development of this study, due to statistical evidence published over a long period of time.

In this section we presented the level of good governance indicators developed by the World Bank. The score of each indicator can vary from a minimum of -2.5 (weak governance) to a maximum of 2.5 (strong governance). In Table 1 it is presented their average value for the years 1996-2018 for European member states.

Table 1. Average of good governance indicators for EU member states, for the years 1996-2018

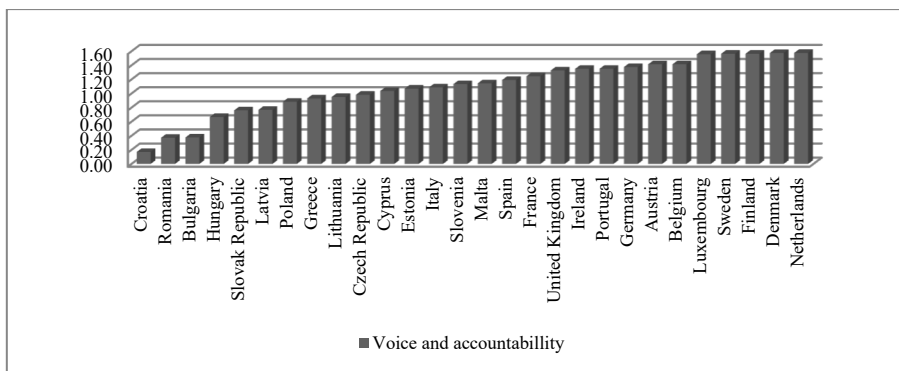
| Countries/ Indicators | Voice and Account ability | Political Stability and Absence of Violence/ Terrorism | Government Effectiveness | Regulatory Quality | Rule of Law | Control of Corruption | Average indicators of good governance |
|---------------------------|---------------------------------|-----------------------------------------------------------------------|-----------------------------|-----------------------|----------------|--------------------------|------------------------------------------------|
| Austria | 1.41 | 1.16 | 1.59 | 1.60 | 1.84 | 1.66 | 1.54 |
| Belgium | 1.42 | 0.85 | 1.44 | 1.22 | 1.37 | 1.43 | 1.43 |
| Bulgaria | 0.38 | 0.16 | 0.11 | 0.20 | -0.19 | -0.26 | 0.06 |
| Croatia | 0.17 | 0.36 | 0.28 | 0.14 | -0.15 | -0.22 | -0.03 |
| Cyprus | 1.04 | 0.47 | 1.05 | 1.14 | 0.81 | 0.99 | 1.01 |
| Czech Republic | 0.98 | 1.09 | 0.77 | 1.17 | 0.98 | 0.59 | 0.79 |
| Denmark | 1.58 | 1.20 | 1.82 | 1.73 | 1.83 | 2.19 | 1.88 |
| Estonia | 1.07 | 0.68 | 0.90 | 1.40 | 0.91 | 0.98 | 1.02 |
| Finland | 1.57 | 1.17 | 1.85 | 1.67 | 1.98 | 2.21 | 1.89 |
| France | 1.25 | 0.50 | 1.37 | 1.11 | 1.46 | 1.28 | 1.26 |
| Germany | 1.38 | 0.95 | 1.67 | 1.62 | 1.62 | 1.93 | 1.65 |

| Countries/ Indicators | Voice and Account ability | Political Stability and Absence of Violence/ Terrorism | Government Effectiveness | Regulatory Quality | Rule of Law | Control of Corruption | Average indicators of good governance |
|--------------------------|---------------------------------|-----------------------------------------------------------------------|-----------------------------|-----------------------|----------------|--------------------------|------------------------------------------------|
| Greece | 0.93 | 0.32 | 0.59 | 0.42 | 0.60 | 0.14 | 0.53 |
| Hungary | 0.67 | 0.88 | 0.68 | 0.73 | 0.73 | 0.36 | 0.51 |
| Ireland | 1.35 | 1.19 | 1.55 | 1.55 | 1.48 | 1.63 | 1.49 |
| Italy | 1.09 | 0.71 | 0.63 | 0.76 | 0.65 | 0.32 | 0.70 |
| Latvia | 0.77 | 0.49 | 0.76 | 1.05 | 0.55 | 0.06 | 0.42 |
| Lithuania | 0.95 | 0.64 | 0.80 | 1.10 | 0.70 | 0.46 | 0.70 |
| Luxembourg | 1.56 | 1.38 | 1.87 | 1.76 | 1.76 | 2.02 | 1.79 |
| Malta | 1.14 | 1.31 | 0.95 | 1.15 | 1.05 | 0.53 | 0.84 |
| Netherlands | 1.58 | 1.20 | 1.90 | 1.93 | 1.76 | 2.05 | 1.81 |
| Poland | 0.88 | 0.69 | 0.67 | 0.80 | 0.60 | 0.67 | 0.78 |
| Portugal | 1.35 | 1.21 | 1.24 | 1.05 | 1.21 | 1.11 | 1.23 |
| Romania | 0.37 | 0.33 | -0.27 | 0.24 | 0.15 | -0.28 | 0.04 |
| Slovak Republic | 0.76 | 0.81 | 0.58 | 0.74 | 0.34 | 0.29 | 0.53 |
| Slovenia | 1.13 | 1.11 | 1.01 | 0.89 | 1.06 | 0.99 | 1.06 |
| Spain | 1.19 | 0.22 | 1.31 | 1.06 | 1.20 | 0.87 | 1.03 |
| Sweden | 1.56 | 1.19 | 1.88 | 1.56 | 1.85 | 2.16 | 1.86 |
| United Kingdom | 1.33 | 0.52 | 1.61 | 1.89 | 1.63 | 1.90 | 1.62 |

Source: (World Bank, 2020)

Overall, the Nordic countries (Finland, Denmark, Sweden) recorded the highest level of the governance indicators, with values between 1.89 and 1.86, these being closely followed by the Central and Western European countries (Netherlands, Luxembourg, Germany, United Kingdom, Austria), with the score between 1.81 and 1.54. Among the countries with the lowest average of the governance indicators, predominantly we find Eastern European states, which were under the communist regime until 1990: Hungary, Latvia, Bulgaria, Romania, Croatia with their scores ranging from 0.51 to -0.03.

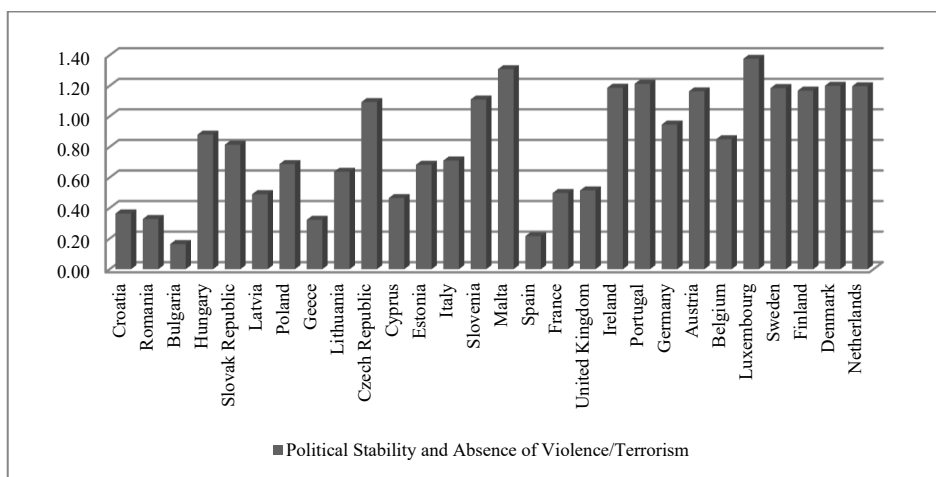
The Voice and Responsibility Indicator (Figure 2) summarizes perceptions on the extent to which citizens can participate in the selection of the government in their country and perceptions of freedom of expression, association and media freedom. The Netherlands, Denmark, Finland, Sweden and Luxembourg are the countries with the highest average in the European Union, with values ranging from 1.58 to 1.56, but admitting that they are still at a significant distance from the maximum that could be reached, 2.5. At the opposite pole we find Croatia, Romania, Bulgaria, Hungary, Slovakia, Slovenia, Latvia and Poland, with the score ranging from 0.17 to 0.88.



Source: (World Bank, 2020)

Figure 2. Average of the Voice and Accountability Indicator in European Union countries, for the years 1996-2018

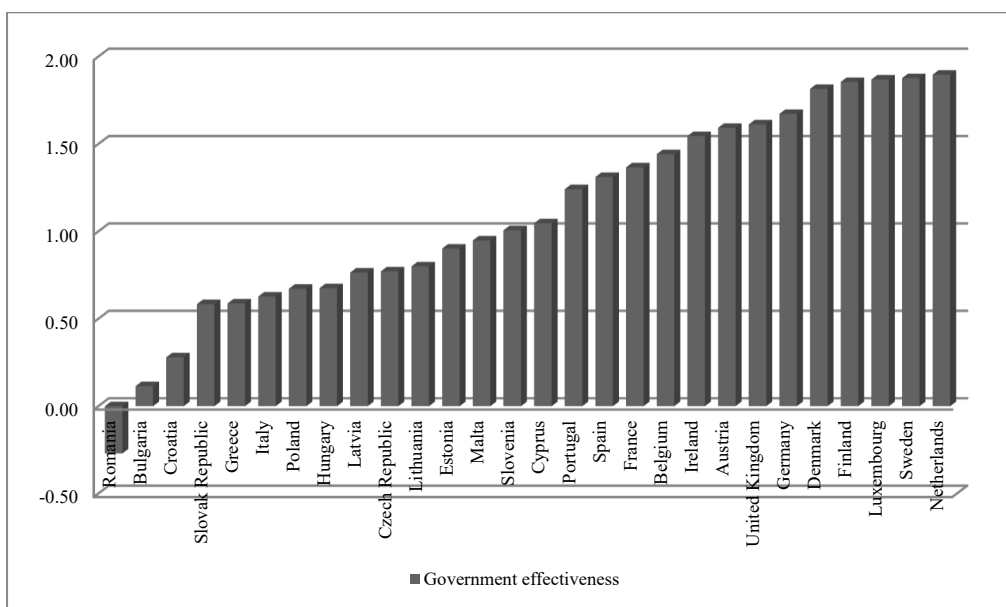
Political stability and the absence of violence/ terrorism (Figure 3) measure the perception on the likelihood of political instability and/ or politically motivated violence, including terrorism. Its maximum values are found in Luxembourg and Malta (1.38 and 1.31), representing that the performance of these governments is far from its maximum potential. On the other hand, according to the analysed indicator, most problems regarding political stability, violence and terrorism were registered in countries such as Bulgaria, Spain, Greece, Romania, Croatia, where it reaches low levels, from 0.16 to 0.36, in these cases a rapid improvement of the governance score on this side being needed.



Source: (World Bank, 2020)

Figure 3. Average of the Indicator of Political Stability/ Absence of Violence/ Terrorism in European Union countries, for the years 1996-2018

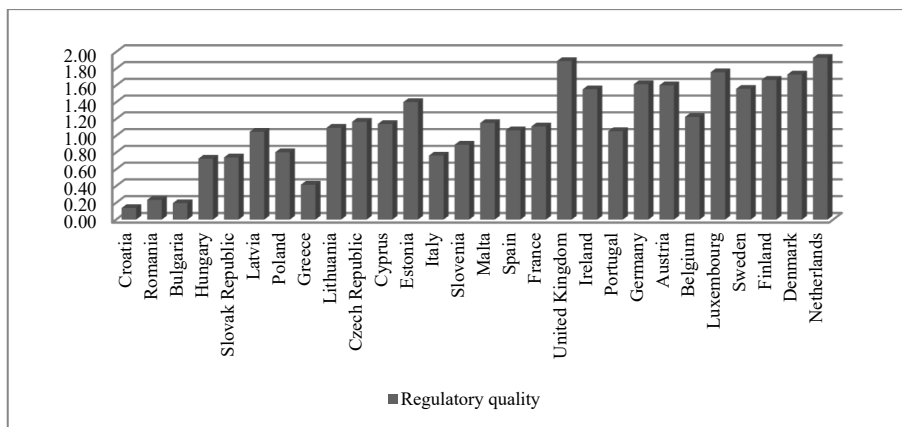
Government effectiveness (Figure 4) summarizes perceptions on the quality of public services and the degree of independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. The best performance in this area is also achieved by the Nordic countries together with other central countries such as the Netherlands and Germany, which has values from 1.90 to 1.67. The average indicator in Romania is the lowest compared to the rest of the EU Member States (-0.27), indicating significant problems in terms of efficiency, productivity of government activity. Next to it, with scores ranging from 0.11 to 0.68, there are countries such as: Bulgaria, Croatia, Slovakia, Greece, Italy, Poland and Hungary.



Source: (World Bank, 2020)

Figure 4. Average Government Effectiveness Indicator in European Union countries, for the years 1996-2018

The Regulatory Quality Indicator (Figure 5) summarizes perceptions of the government's ability to formulate and implement sound policies and regulations that enable and promote private sector development. Its highest averages during the analysed period were registered in the countries: Netherlands, United Kingdom, Luxembourg, Denmark, Finland, Germany and Austria (ranging from 1.93 to 1.60). At the same time, the lowest average scores (from 0.14 to 0.76) were recorded in Croatia, Bulgaria, Romania, Greece, Hungary, Slovakia and Italy).



Source: (World Bank, 2020)

Figure 5. Average Regulatory Quality Indicator in European Union countries, for the years 1996-2018

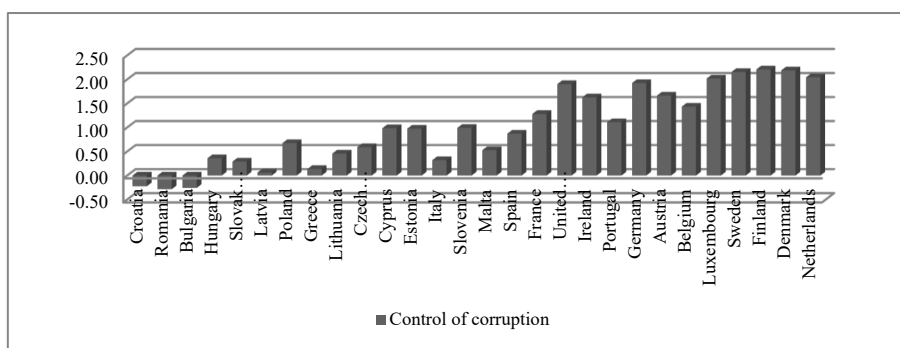
The Rule of Law (Figure 6) reflects perceptions on the extent to which agents trust and abide by society rules, the quality of the contract enforcement, property rights, the police and the courts, and the likelihood of the crime and violence. In the case of this indicator, the highest score for the analysed period was recorded in countries such as: Finland, Sweden, Austria and Denmark, with values ranging from 1.98 to 1.83. In these countries, the private sector has confidence in the state and respects the rules of society in general. At the opposite pole are countries such as Bulgaria and Croatia, where the values are negative (-0.19 and -0.15) and Romania, Slovakia and Latvia (with values of 0.15, 0.34 and 0.55).



Source: (World Bank, 2020)

Figure 6. Average of the Rule of Law indicator in the countries of the European Union, for the years 1996-2018

The Control of Corruption Indicator (Figure 7) summarizes perceptions on the extent to which public power is exercised for private gain, referring to both small and large forms of corruption and the "capture" of the state by elites and private interests. For this indicator, the score is quite high on average, compared to the score of the other indicators. Its level is ranging from 2.21 and 2.02 for the analysed period in countries as Finland, Denmark, Sweden, the Netherlands and Luxembourg, whereas score values close to 2 were recorded in Germany and the United Kingdom. Romania, Bulgaria, Croatia, Latvia and Greece are the countries with poor control of corruption, having the lowest scores of this indicator (from -0.28 to 0.14).



Source: (World Bank, 2020)

Figure 7. Average Control of Corruption Indicator in European Union countries, for the years 1996-2018

A governance framework dimensioned through the principles presented in this section is a favourable premise for improving the design and implementation of fiscal consolidation policies, which are essentially a public decision-making process, considering that a country is well governed when public decision-making respects these principles. In this sense, good governance may be considered an additional tool for ensuring the implementation of fiscal adjustment programs (Mkandawire, 2007), thus, the role of it being identified with the effective management of fiscal governance.

5. PRACTICES ON LOCAL BUDGET CONSOLIDATION IN THE EU COUNTRIES

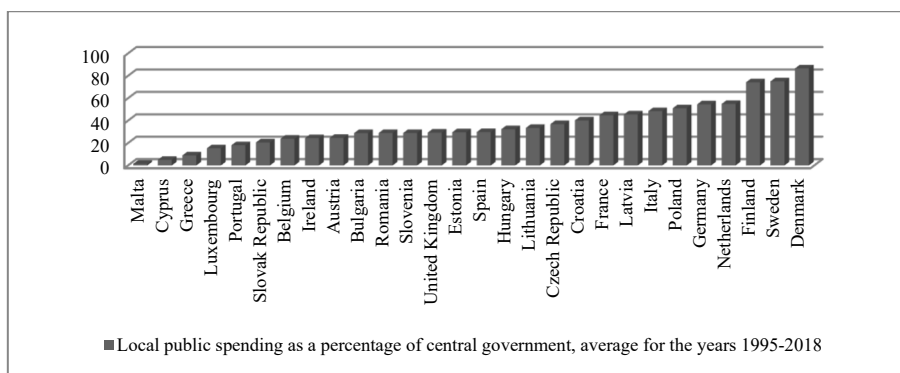
The segment on local budget governance is generically associated with the purposes of good governance in general (balance, progress, equity, transparency, participation), being automatically oriented in a similar direction and reflects the optimization of the structure and dynamics of local revenues and expenditures,

sustainability of local budgetary situation, control of deficits, which generically expresses the results of local budgetary consolidation efforts.

At European level we identify the following examples of good practice in matter of local budgeting, where the local autonomy and the right of self-government of local authorities is recognized at the constitutional level: in Denmark the Constitution establishes local autonomy under the supervision of the central government, in Luxembourg the Constitution grants municipalities the right to administer property and their own interests also under the supervision of the government, and in Sweden and Slovenia the Constitution recognizes and guarantees the principle of self-government. Other countries in which local autonomy is recognized by the Constitution are: France, Italy, Slovak Republic and Spain.

The decentralization of public powers and sources of revenue has been more intense in the Nordic countries and in some countries in Western and Central Europe (Denmark, Sweden, Finland, the Netherlands, Germany and Poland), where local budget revenues and expenditures account for more than 50% of state budget revenues and expenditures. The analysis of the good practices of local fiscal consolidations is realised according to a report on division of powers for European countries of Alcidi *et al.* (2014).

In Figures 8 and 9 we represented the level of decentralization of local public expenditures and revenues, as well as the degree of autonomy of local budgets in the countries of the European Union.

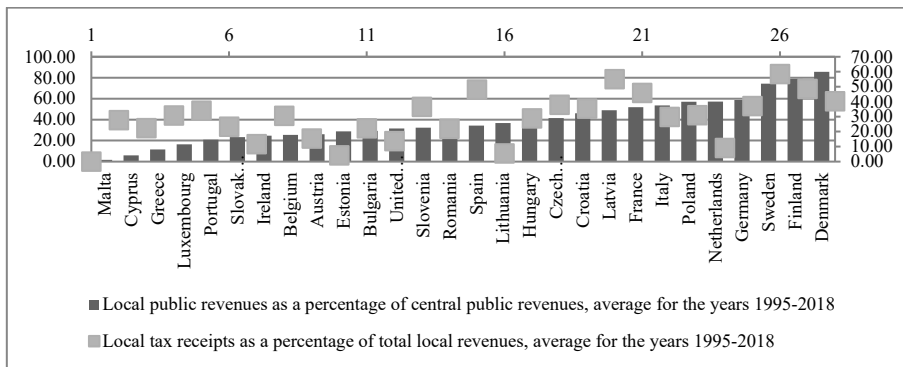


Source: authors' calculations, data from Eurostat database (European Commission, 2020)

Figure 8. Level of decentralization of local public spending in European Union countries, average for 1995-2018

In Denmark, local budgets are set annually by the Government and the National Associations of Municipalities and Regions, which implicitly set limits on service and investment costs and targets for subnational taxes, and the legal

framework and also allows some flexibility from the authorities regarding their applicability. The autonomy of municipalities is greater, as their main source of income is their own tax revenues, local authorities being responsible for the allocation local budget expenditures. Finland also has a highly decentralized system of governance, with Finnish municipalities having the right to set local tax rates in full autonomy. In Sweden, too, local public revenues are largely made up of local taxes and duties. In order to fulfil their financial obligations, local governments have the right to collect taxes on residents' incomes, being free to decide on their own tax levels, the decision-making autonomy regarding the formation and allocation of local financial resources, not being affected by the fact that, from a technical point of view, taxes are collected by the central government and then redistributed on the basis of each tax rate and the tax base.



Source: authors' calculations, data from Eurostat database (European Commission, 2020)

Figure 9. Decentralization of local public revenues and local fiscal autonomy in European Union countries, average for 1995-2018

Additional to the increased local autonomy, the budgetary systems of the three European states also manage mechanisms for balancing local budgets. In Finland, the value of these transfers is determined by a formula that takes into account an estimated central cost for the provision of each local service, demographic factors and population density, geographical location (e.g. islands, distance to major economic centres) and unemployment rates. In Sweden, the redistribution of resources is based on a calculation formula based on different tax bases and local spending levels. Particularly in Denmark, beyond transfers to balance the revenues of each municipality's budgets, we also find an inter-municipal balancing mechanism, established by the 2007 local government reform, according to which financial resources are redistributed from richer to poorer municipalities.

As a federal state, Germany also has an important level of fiscal decentralization, the legal framework being quite precise in terms of public competencies and covering resources for each level of government. In order to cover the expenses of the Länder and the local expenses, the federal state shares taxes with the other two levels of government (e.g. income tax, profit tax, VAT). The balancing mechanism within the German budgetary system is one of the strongest in Europe, with its operation aiming to guarantee at the level of each state, the financial means necessary to cover the expenses and to ensure equivalent living conditions between the Länder. The balancing system is thus carried out on three levels - primary horizontal balancing between the Länder, secondary horizontal balancing within each Land and vertical balancing through additional federal subsidies - significantly reducing the variation in fiscal capacity between the Länder. Similarly, the fiscal balance between municipalities (representing the third level of government) is achieved, the more developed municipalities contributing to balance of less developed municipalities.

Another highly decentralized federal state is Belgium, the regions and communities (federal level) having their own governments are not subordinated to the federal level. However, the ability to finance expenditures through own resources is limited to regions and absent in the case of communities, which are financed by shared taxes at the federal (central) level. Under these conditions, there are permanent huge vertical imbalances between decentralized competences and the resources needed to cover them, which has necessitated the establishment and operation of a balancing mechanism. The main financial transfer to the regions at the level of this mechanism is the so-called federal income tax transfer. Since 1990, this transfer has been allocated horizontally to the regions, depending on each region's contribution to federal income tax revenue.

In the category of regional states, Italy is also a decentralized one, with the Italian regions enjoying a fairly high degree of fiscal autonomy, both in terms of revenue and expenditure. The balancing mechanism takes place on two levels: at the regional level (through the Perequativo Fund) - the state aims to compensate for imbalances between their tax revenues and between local governments, the state seeking to offset the revenues of those municipalities with lower fiscal capacity.

In the European context, in contrast to the most decentralized states and where local autonomy is wider, we also identify states where the two modern democratic principles have a smaller scope (compared to the others): Austria, Bulgaria, Cyprus, Estonia, France, Greece, Ireland, Latvia, the Netherlands, Poland and Romania. Thus, in Austria, although local authorities have a significant role to play in collecting tax revenue, they have limited powers to make decisions on local taxes. In Bulgaria, the most consistent resource of local budgets is transfers from the state budget, similar to the case of Romania, as their own revenues can cover only a small part of their financial needs. In Estonia, too, local

governments have limited autonomy, with local budgets balanced by a fiscal balancing fund and transfers on the basis of expenditure needs, determined by population size and age structure and based on outstanding (uncollected) revenues at the level of each local government.

A different case is France, which although is a relatively centralized state and local authorities have quite a limited local autonomy, municipalities have the right to set the tax rate on taxes such as the tax on buildings, other properties and lands. Also from the category of centralized states are Malta and Luxembourg. In Malta, local authorities are more than 90% dependent on state budget transfers and in Luxembourg the dependence on these transfers is slightly lower, but local authorities have the right to impose and set the level of taxes after the approval of the central government. In the case of these two states, the reduced local financial autonomy occurs conjectural as a result of the reduced territorial extent, without being associated with governance factors.

In the case of other states, limited local autonomy means both a low level of own financial resources to finance expenditures, but this is also associated with a reduced autonomy of decision regarding the imposition and setting of tax rates (Estonia and Lithuania). On the other hand, in the Netherlands limited local autonomy occurs due to the fact that the most part government functions are centralized and the funding of those at the local level largely depends on transfers from the central government.

If the general trend (at European level) has been/ is to increase the scope of activity of local authorities, there are states in which some measures have counteracted this trend. Thus, in Hungary, where the decentralization process began in 1990, when local authorities were also granted the right to self-government, in 2011, the government adopted a new law on local self-government, which restricted the range of local public services by re-centralization of a certain number of public competences. The volume of their own fiscal revenues being quite low, the municipalities benefit, consequently, of lower fiscal autonomy, but having the possibility to establish the tax quotas within the limits of a legal level established at central level. Most transfers from the state budget are provided in the form of regulatory subsidies, balancing transfers and deficit subsidies. Based on the volume of expenditure to be incurred, such a balancing system tends to discourage the efficiency and quality of local public services.

The analysis in this article reveals that the countries where governance is stronger are especially those in northern Europe (Finland, Denmark, Sweden) and also some Western and Central Europe (the Netherlands, Great Britain, Germany and Austria). In terms of local budget consolidation practices, we also find a more intense manifestation of financial decentralization, local autonomy in the Northern, Western and Central Europe states. Assuming that good governance is a prerequisite for the process and results of budget consolidation, the findings could be interpreted as fragile empirical evidence on the existence of a causal

relationship between governance and budget consolidation, which allows further in-depth research regarding the impact of good governance on budgetary consolidation.

6. CONCLUSIONS

Fiscal-budgetary policy (along with other components of public policy) is identified as a pillar of good governance, which has the significance of ensuring the premises of optimal functionality of the whole, starting from the establishment of a common and appropriate (harmonized) framework in political, social, economic, financial, fiscal, budgetary, etc., to ensure the achievement of the objectives targeted/ declared in a certain moment or time interval. Compared to these, the relationship between good governance and budget consolidation becomes a bivalent one, in the sense that a budget consolidation process is by its natural link with public authority, conditioned ex-ante by the quality of public governance associated with the studied system and, conversely, budget consolidation results will form the basis for the configuration and evaluation of governance in that system.

The indicators of good governance presented in this study show a stronger governance in the Nordic countries and in some of the Central and Western countries of the European Union and also the decentralization and local decision-making and fiscal autonomy, respectively, the self-financing capacity of local budgets are higher in these states compared to the others. For this reason, we believe that the establishment of a framework of good governance will have a positive influence on the local public finance system, in addition to the potential benefits of fiscal policy as a whole. Orientation towards a process of budgetary consolidation taking into account the principles of good governance, as well as achieving a certain resilience of public budgets will allow a better allocation of public financial resources in the long run, which can have a positive (and sustainable) effect on development and economic growth. Thus, our analysis could be interpreted as an incipient form of empirical evidence regarding the possibility of a causal relationship between governance and budgetary consolidation, in this case that of local budgets, which would allow econometric studies in future research.

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IMPLICATIONS OF COVID-19 PANDEMIC ON FINANCIAL AUDIT ACTIVITIES IN ROMANIA

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ABSTRACT

The paper aims to highlight the importance of reporting the subsequent events caused by the COVID-19 pandemic in the financial statements, but also of the aspects that can significantly influence the going concern, respectively how these effects can cause changes in the quality of audit services. The aim of the paper is to investigate the theoretical and legislative aspects that regulate the challenges posed by the pandemic on accounting and auditing, but also to investigate the practical aspects in this field. The case study is a qualitative one, respectively the analysis of a number of 58 companies listed on the Bucharest Stock Exchange. Were analyzed the financial statements and the independent auditor's report for the year 2019, grouping the entities by industries. Subsequently, were synthesized the published information, respectively if the companies declared significant effects produced by the COVID-19 pandemic and if these effects were reported as subsequent events or adjustment of the annual financial statements. Respectively, were analyzed if the declared effects were also highlighted by the auditor when issuing the audit report and if these events changed the audit opinion. Empirical research has shown that the effects of the COVID-19 pandemic have had a significant impact on most of the industries studied, affecting both the smooth running of activities by closing borders, reducing or even closing certain activities, stopping travel and making communication with suppliers, customers more difficult. or investors, diminished sales, deferred payments or the need to optimally manage costs and available resources, as well as at the level of employees by providing home services, technical unemployment or salary reductions, but also at the level of the client-auditor relationship, by limiting travel in the interest of business. The main conclusion resulting from the case study is that certain auditors assessed the risks posed by subsequent events reported by companies, providing insignificant uncertainties in some cases, but also significant uncertainties regarding the continuity of activities of some companies.

Keywords: COVID-19; audit; subsequent events; going concern; adjustment.

JEL Classification: M40, M41

1. INTRODUCTION

The beginning of 2020 was marked by major challenges caused by the COVID-19 pandemic. Both, everyday life and business area were subject to restrictions that had serious repercussions. Companies were forced to assess the risks caused by this pandemic on their financial statements, which will be reported as much as they occur or can be estimated.

Although the upward trend of evolution and globalization of the economic environment has experienced a favorable evolution lately, the COVID-19 pandemic has brought a strong reversal of the situation, causing many blockages for this environment.

The main concern of the organizations was to find out where and how their people are, but also to take measures to protect them and limit the risk of contamination with this virus.

Although seemingly simple, the COVID-19 crisis has forced governments to impose strict measures, such as restricting travel even in the business interests, or temporarily shutting down certain industries and automating, redirecting employees to home office or even technical unemployment.

Through the visible effects produced by the COVID-19 pandemic, can be listed: stopping purchases from various quarantined areas, limiting or blocking deliveries in certain quarantined areas, interrupting production, limiting employees and adapting it to other forms of work, significant reduction of the activity in the HORECA field, reduction of the possibilities of external financing, falls of stock market indices or even the declaration of the state of insolvency.

The pandemic caused a significant impact on all aspects of the life, but also on the financial reporting and the conduct of the audit activity.

Auditors need to be innovative in adjusting audit procedures to gather sufficient and appropriate audit evidence to support the audit opinion, especially as audit risk has increased and travel restrictions at the client's are limited or even prohibited in some countries. Even so, it is imperative to comply the auditing standards and applicable rules in order to maintain the required level of audit quality.

As it is not known how long this pandemic can last, it is advisable for the companies to do a thorough assessment of the risks and potential impact of this epidemic, but also to implement measures to reduce any risk.

A generally valid set of procedures does not suit to all companies. In this case, it is recommended that companies to speak with the auditor for specific advice depending on the field in which the company operates, the nature of the activity, the country of origin or any other element that could be affected by this event.

The auditor has the responsibility to plan and perform a quality audit, applying professional skepticism and taking into account the fact that there may be certain circumstances that can denature the financial statements. A relevant

example would be the related consequences of the COVID-19 pandemic that have led to risks of material misstatement, either as a result of fraud or error, or of a change in the internal control environment in which entities that may incur errors in the financial reporting. Auditors should pay attention to these factors risk and ensure that professional skepticism is applied throughout the audit process.

If is identified fraud or errors, the auditor should discuss these issues with the company management, or as appropriate, with those responsible for governance. If can be obtained enough audit evidence, the auditor should assess the effect of the lack of sufficient and adequate evidence on the audit opinion, in accordance with ISA 705.

In this paper, was analyzed the effects of the COVID-19 pandemic on the financial statements reporting and if these effects led to the adjustment of the financial statements or even led to a change in the auditor opinion issued. The sample consists of 58 companies listed on the Bucharest Stock Exchange with non-financial activity.

The results of the case study indicate that the COVID-19 pandemic has produced numerous changes in financial reporting and financial audit activity. In most cases, companies were forced to close down or reduce certain areas of activity, as this directly influenced the employees and revenues of the companies concerned. Also, the smooth running of the economic market was disrupted by sudden changes in prices and demand for certain raw materials, thus producing a supply shortage that forced companies to better manage existing stocks and resources. A large part of the companies' budgets have been allocated to the purchase of protective materials and disinfectants, but also to donations to institutions that treat COVID patients. The only industry that gained value from this pandemic was the drug industry, which in this situation has increased the production of drugs used to treat and prevent contamination, and these new products will be exported to new markets.

The research will contribute to the development of the literature because it provides an analysis of available data on reporting subsequent events following the COVID-19 pandemic by listed companies in Romania, from a perspective oriented to the need to declare and assess the risks arising from subsequent events produced by the COVID-19 pandemic.

The paper is structured as follows: a section containing a synthesis of the relevant literature on the reporting of the effects produced by the COVID-19 pandemic, followed by the second section describing the research methodology. The third section presents the results of the study together with the analysis and synthesis of the data, and the paper is completed with a part reserved for the conclusions, the limits of the study and the future research directions.

2. LITERATURE REVIEW

As the pandemic began spontaneously, auditors and regulators of the profession had to find quick and viable solutions to align the standards imposed by the profession at the best level. In this regard, ACCA experts (ACCA, 2020) consider that the current restrictions generated by the COVID-19 pandemic affect both the auditor and the audited entities, the auditors being required to perform audit procedures to assess the validity of changes after the preparation of the annual financial statements. These changes differ depending on the industry in which the audited company operates. If the entity has ceased operations, the changes should not cause problems for auditors. Otherwise, if trade has been possible, the changes can be significant and may even make audit procedures more difficult.

Also, have been conducted studies by BIG4 specialists. KPMG (2020) analyzed the effect of the COVID-19 pandemic on international taxation or applicable social security legislation. The answers found in their case study reflect the application of the following measures to limit the effects of the pandemic on the business environment: monitoring the legal, tax and immigration implications in each jurisdiction, reviewing employee mobility policies, improving employee experience, information security technologies, additional costs generated by different forms of work and benefits brought to the company, review of remuneration packages, and PwC Romania (2020) conducted a study on the continuation of companies' activity after the COVID-19 pandemic, using a questionnaire created for this purpose on a number of 91 companies from various sectors. Thus, 37% of the surveyed companies partially or totally interrupted their activity after declaring the state of emergency, 20% restricted their activity, 19% opted for work at home and 27% stated that they would resort to technical unemployment.

Deloitte professionals (Deloitte, 2020) believe that from a financial reporting perspective, entities may face significant challenges for future reporting periods. To address these implications, experts suggest the following adjustments to the balance sheet items: impairment of fixed assets, adjustment of inventories, provisions for onerous contracts, provisions for retirement benefits and subsequent events.

BDO (2020) argues that this event may affect the sustainability of companies due to factors such as declining revenues, low financial liquidity or concerns of key business partners.

Accountancy Europe (2020) proposed four steps for a sustainable recovery during the pandemic: improving management risk, especially in the case of SMEs, moving to a circular economy, adapting the public sector, a change in lobbying.

CAFR (2020) presents the fact that the COVID-19 pandemic is an event after the close of the financial year 2019 that may or may not lead to sharp adjustments

to the figures in the annual financial statements, insofar as they can be reliably estimated.

The economic effects on the audited company can be reflected in the category of subsequent events until the date of issuing the audit report, the audit risk being carefully analyzed by the auditors because companies have the obligation to assess how their financial reporting for the financial year 2019 will be affected of this subsequent event.

All the implications on the annual financial statements as well as the risk of business continuity require a careful analysis by the persons responsible for governance and by the financial auditors.

One standard that contributes to increasing the quality of audit services provided is ISA 701, "Communication of Key Audit Aspects in the Independent Auditor's Report." In the case of the implications of the COVID-19 pandemic, the auditor should carefully consider these key issues and introduce them in a special paragraph regarding the impact of the business continuity risk. In the case of companies that do not currently adopt this standard, the auditor must carefully evaluate the content of the explanatory notes detailing these issues, as well as the risk assessment included in the Administrator's Report, according to OMFP 1802/2014.

The second standard that contributes to increasing the quality of audit services is ISA 570 "Going concern", which specifies that the preparation of annual financial statements require management to assess the company's ability to continue operating even if the general financial reporting framework does not include a requirement in this regard.

ISA 315 "Identifying and assessing the risks of material misstatement through understanding the entity and its environment" requires auditors to identify and assess the risks of material misstatement, either as a result of accounting fraud or error, or by understanding the entity, its environment, and internal control. a basis for designing and implementing responses to identified distortion risks.

In the case of entities that were significantly affected by the impact of the COVID-19 pandemic, it is necessary to consider the possibility of preparing financial statements based on going concern, even if the significant impact on activity occurred after December 31, 2019. If the company's management is aware of certain uncertainties that may significantly affect the entity's ability to continue operations, they should be disclosed and quantified in the annual financial statements.

Also, the ISA 560 "Subsequent Events" standard requires the inclusion in the financial statements as of December 31, 2019 of detailed explanatory notes, so that users of the financial statements can assess the effects of these implications on the company concerned or even the economy in general.

In this case, were found two types of subsequent events:

- Events that do not adjust the annual financial statements: when the financial results for 2019 are not influenced by this event, in this case it is necessary to include in the explanatory notes and in the directors' report the analysis of uncertainties and risks to which the entity is exposed in the future.
- Events adjusting the annual financial statements: for companies that have a different financial year than the calendar year.

The impact of the COVID-19 pandemic on the financial audit activity was also studied at international level by elaborating scientific studies, especially qualitative ones, being a relatively new event, which still does not have many concrete and declared numerical data. In this approach, the authors Castka *et al.* (2020) conducted a qualitative study to analyze how Sustainable Development Standards (VSS) have adjusted their certification services following the COVID pandemic - 19. The results show a significant adoption of remote auditing, even if it uses advanced technologies for certification services.

Ramadhan *et al.* (2020) sought answers in its case study regarding the examination of the distribution of social assistance funds in anticipation and treatment of the impact produced by the COVID-19 pandemic. The authors opted for a qualitative study, respectively a research of the literature review and the main conclusion is that the reports regarding the distribution of funds issued by the local administration to manage the COVID-19 pandemic were prepared together with the revenue and expenditure budgets, following that the report to be audited after the end of the fiscal year.

According to Deb and Chakraborty (2020), the auditors were entrusted with the responsibility of ensuring the correctness of the financial statements, taking into account the effect produced by the pandemic. Thus, the challenges faced by auditors following the COVID-19 crisis are: stock valuation, asset depreciation, revenue recognition, cash management and payment of tax liabilities, in order to maintain the relevance and correctness of the audited financial statements.

3. RESEARCH METHODOLOGY

For the case study were analyzed 58 companies listed on the Bucharest Stock Exchange (BVB), with non-financial activity (BVB, 2020). Based on the annual reports published for the financial year 2019, the companies were grouped by 9 business sectors and the financial statements and auditors' reports were analyzed for the specified period, highlighting subsequent events following the COVID-19 pandemic and the extent to which the auditor took these into account when expressing his opinion or having to change his original opinion.

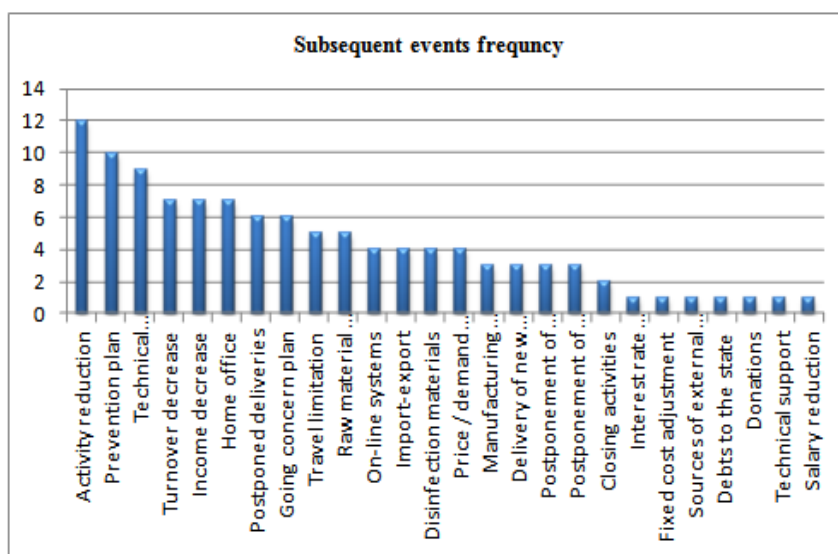
4. RESULTS

Even though the COVID-19 pandemic started suddenly and inevitably, the companies failed to estimate exactly the value of the effects produced on the annual financial statements and on the balance sheet elements. For this reason, the

companies did not consider it necessary to adjust the financial statements, being difficult to estimate a relevant value in the event of subsequent events caused by the pandemic.

Following the analysis, were found that the subsequent events declared by the companies in the annual reports affected the industries both at the microeconomic level, but especially at the macroeconomic level by imposing strict restrictions on the movement and development of manufacturing (see Appendix 1).

Of the 58 companies analyzed, 20 companies did not report subsequent events caused by the COVID-19 pandemic.



Source: own projection

Figure 1. Subsequent events frequency

A first classification of subsequent events caused by the COVID-19 pandemic was made according to their frequency (see Figure 1). The most common are the reductions in activity in various industries, the implementation of plans to protect employees and prevent contamination, but also the allocation of employees in technical unemployment.

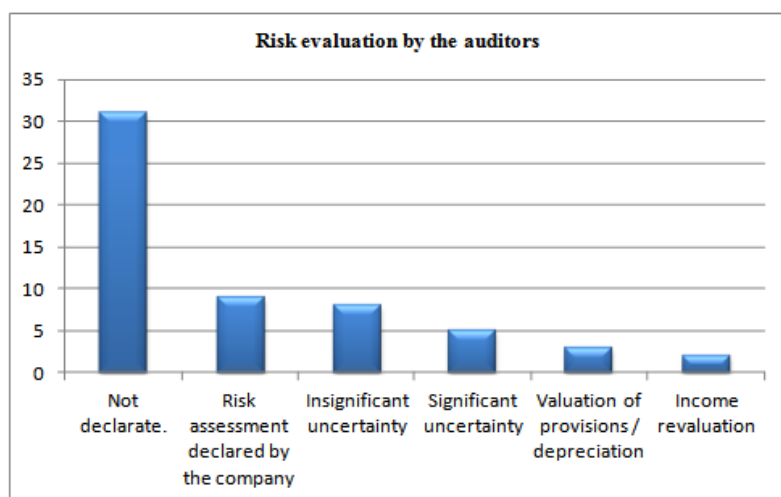
With the same frequency we find subsequent events such as: the decrease of the turnover, the decrease of the incomes or the performance of the work at home by the employees.

Thirdly, was meeting the need to postpone deliveries and implement business continuity plans. The ranking is followed by events that limit business travel but also optimal management of raw materials.

Less common are subsequent events caused by border closures, the development of an online communication system with suppliers, customers and investors, changes in the price and demand for raw materials, but also the allocation of costs for the purchase of protective and disinfection materials.

They are then followed by subsequent events that have led to an increase in the production of medicines and their delivery to new markets, the postponement of the payment of contracts with suppliers and customers, but also the postponement of the payment of rents.

On the penultimate place was find the closure of the activity in severely affected industries, and the ranking is finalized with subsequent events such as: lowering the monetary policy interest rate, adjusting fixed costs, stopping access to external financing sources, postponing payments to the state, reducing wages, donations offered to hospitals and clinics, but also the implementation of a technical assistance support.



Source: own projection

Figure 2. Risk evaluation by the auditor

In the case of the audit reports, it was not necessary to issue another audit opinion or modify the initial report. Some auditors reported significant uncertainties about business continuity for companies in significantly affected industries, while some auditors felt that the current uncertainties were not significant and only temporarily affected business continuity in the audited industries. Also, a significant proportion of auditors did not assess the risks or uncertainties caused by the COVID-19 pandemic (see Figure 2).

Of the total of 58 audit reports analyzed, 31 reports do not provide information on subsequent events caused by the COVID-19 pandemic, most of

which were in the case of companies that did not report further events in this regard. The risks declared by certain companies were assessed by 9 auditors in the audit reports, 8 auditors considered that there were insignificant uncertainties regarding the continuity of the companies' activity and 5 auditors assessed these uncertainties as significant on the continuity of the activity.

Also, 3 auditors evaluated the calculated provisions and the depreciations already expected, and another 2 auditors considered that a revaluation of the revenues obtained by the companies is necessary.

5. CONCLUSIONS

Through this paper were presented the theoretical and practical aspects of the effects and subsequent events following the COVID-19 pandemic, both at the level of financial reporting and audit activity.

The COVID-19 pandemic has produced numerous changes in all aspects of life, but also in the annual financial reporting or even the conduct of the planned audit activity.

The main affected industries were the extractive industry, HORECA, transport and manufacturing, while the medicine industry benefited from a more than 50% increase in the production of drugs used to treat the COVID pandemic. 19.

We face to two categories of subsequent events that occurred as a result of the COVID pandemic: events that do not adjust the financial statements, in which case it is necessary to include in the explanatory notes and in the directors' report the analysis of uncertainties and risks to which the entity is exposed in the future, and subsequent events that adjust the annual financial statements.

A significant effect of the pandemic was the limitation of business travel, which made it more difficult to plan the audit activity, in some cases being necessary to communicate with the client only through the online system.

Under these conditions, auditors must be innovative in adjusting audit procedures to gather sufficient and appropriate audit evidence to support the audit opinion, especially as the audit risk has increased. Even so, it is imperative to comply with auditing standards and applicable law in order to maintain the required level of audit quality.

If is identified fraud or error, the auditor should discuss these issues with the company management, or as appropriate, with those responsible for governance. If cannot be obtain evidence of discovered nonconformities, the auditor should assess the effect of the lack of sufficient and adequate evidence on the audit opinion, in accordance with ISA 705.

Auditors should consider the impact of the following:

- Increased risk of management oversight due to increased pressure to commit financial reporting fraud;

- Increasing the level of uncertainty regarding estimates, depreciations or establishing fair value and provisions;
- Changes in the activity of the company executed during the blocking period, the impact on the internal control environment;
- Changes in internal controls following the cessation of activity, including the impact of staff damage, remote work or even technical unemployment;
- Assessing assets and cash flow;
- The impact of subsequent events;
- Non-compliance with the legislation in force for each field of activity;
- Determining the audit materiality and the risks of significant misstatement.

The paper can be a bibliographic source for researchers in the field of accounting and financial auditing, for business management representatives to understand the need and importance of reporting subsequent events, especially in these uncertain conditions.

The limitations of the research consisted in the fact that there is no certified database, the data were collected manually being taken from the information published by companies, their degree of trust being ensured by the reports issued by independent financial auditors.

Future research directions can materialize in expanding the number of companies both nationally and internationally, as well as conducting quantitative empirical research.

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APPENDIXES

Appendix 1. Empirical research results

| Nr crt . | Audited company | Auditor | Period | Auditor opinion | Industry | Effects declared by the companies | Effects declared in the auditor's report |
|----------|------------------------------|-------------------------------------|--------|---------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| 1 | OMV PETROM S.A. | Ernst& Young Assurance Services SRL | 2019 | Unqualified opinion | Mining | Changing prices and demand for petroleum products and crude oil. | Evaluation of the effects declared by the company. |
| 2 | ROMPETROL WELL SERVICES S.A. | Ernst& Young Assurance Services SRL | 2019 | Unqualified opinion | Mining | Changing prices and demand for petroleum products and the negative impact on the Romanian market. | Evaluation of the effects declared by the company. |
| 3 | S.N.G.N. ROMGAZ S.A. | Ernst& Young Assurance Services SRL | 2019 | Unqualified opinion | Mining | Injection of natural gas into deposits. Postponement of deliveries. Reduction of activity. Closure of factories in the affected countries. Closing borders. | Evaluation of the effects declared by the company. |
| 4 | AEROSTAR S.A. | Mazars Romania SRL | 2019 | Unqualified opinion | Manufacturing | Implementing a business continuity plan. Adjust the activity according to the activity flows. | Reserves evaluation. |
| 5 | ALRO S.A. | Ernst& Young Assurance Services SRL | 2019 | Unqualified opinion | Manufacturing | Donations to public institutions. Implementing procedures to prevent the risk of infection and to protect employees and business partners. | Not declared. |
| 6 | ALTUR S.A. | MICONT EXPERT SRL | 2019 | Unqualified opinion | Manufacturing | Not declared. | Ensuring going concern. |
| 7 | ANTIBIOTICE S.A. | SOCECC Audit Consulting | 2019 | Unqualified opinion | Manufacturing | Increasing the production and delivery of drugs used to treat the symptoms of COVID-19. | Not declared. |

| Nr crt . | Audited company | Auditor | Period | Auditor opinion | Industry | Effects declared by the companies | Effects declared in the auditor's report |
|-----------------|------------------------|----------------------|---------------|------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| | | | | | | Maintaining a connection with business partners, suppliers and customers. Expanding the portfolio by assimilating new products. Delivery on the national and international market of the range of products dedicated to COVID-19 treatment. | |
| 8 | ARMATURA S.A. | Accounting Audit SRL | 2019 | Disclaimer of opinion | Manufacturing | Not declared. | Not declared. |
| 9 | ARTEGO SA | SC EXPERT ACNT SRL | 2019 | Unqualified opinion | Manufacturing | Not declared. | Not declared. |
| 10 | BERMAS S.A. | CODEXPART OFFICE SRL | 2019 | Unqualified opinion | Manufacturing | Decreased income Negative impact on financial position. Distribution network suspended due to HORECA industry restriction | Incomes revaluation. |
| 11 | BIOFARM S.A. | BDO AUDIT SRL | 2019 | Unqualified opinion | Manufacturing | Cost analysis to increase efficiency. Continuation of investments Improving managerial strategies Strengthening the internal market. Maintaining product quality and competitiveness. Implementation of measures to protect employees and collaborators. The employees involved in the production process follow a work schedule adapted to the legal requirements, and some of the employees work from home. | Economic and human risk evaluation. |

| Nr crt . | Audited company | Auditor | Period | Auditor opinion | Industry | Effects declared by the companies | Effects declared in the auditor's report |
|-----------------|------------------------|------------------------------|---------------|------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| 12 | CARBOCHIM S.A. | INTEGRAL AUDIT SRL | 2019 | Unqualified opinion | Manufacturing | Not declared. | Economic impact estimating. |
| 13 | CEMACON SA | DELOITTE AUDIT SRL | 2019 | Unqualified opinion | Manufacturing | Analysis of contracts from the perspective of fulfilling obligations. Possible supply chain disruptions. Changing the demand for construction materials. Implementing a business continuity plan. | Not declared. |
| 14 | COMELF S.A. | Audit Coman Expert – ACE SRL | 2019 | Unqualified opinion | Manufacturing | Reduction of raw material stocks. | Going concern evaluation. |
| 15 | COMPA S. A. | AuditCont SRL | 2019 | Unqualified opinion | Manufacturing | Stopping deliveries on almost all manufactured products. Stopping activity in most sectors. Suspension of employment contracts for most employees and their inclusion on the technical unemployment lists. | Going concern evaluation. |
| 16 | CONTED SA | MCO CONTAB CONSULT SRL | 2019 | Unqualified opinion | Manufacturing | Not declared. | Not declared. |
| 17 | ELECTROAPARATAJ S.A. | IRAMTAS EXPERT SRL | 2019 | Unqualified opinion | Manufacturing | Impairment of imports and exports of electrical equipment. Changing the ability of customers to pay their bills in full and on time. | Uncertainties about going concern. |
| 18 | ELECTROARGES SA | BDO Audit SRL | 2019 | Qualified opinion | Manufacturing | Not declared. | Not declared. |

| Nr crt . | Audited company | Auditor | Period | Auditor opinion | Industry | Effects declared by the companies | Effects declared in the auditor's report |
|-----------------|---------------------------------------|---------------------------|---------------|------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| 19 | ELECTROMAGNETIC A SA | DELOITTE AUDIT SRL | 2019 | Unqualified opinion | Manufacturing | Cessation of supply activity on China relationship. Decreased sales. Postponement of rent payment by tenants or even their inability to pay. | Not declared. |
| 20 | ELECTROPUTERE S.A. | BDO AUDIT SRL | 2019 | Qualified opinion | Manufacturing | Not declared. | Significant uncertainties about going concern. |
| 21 | GRUPUL INDUSTRIAL ELECTROCONTACT S.A. | SC MCO CONTAB CONSULT SRL | 2019 | Unqualified opinion | Manufacturing | Not declared. | Significant uncertainties about going concern. |
| 22 | IAR SA Brasov | Macaveiu Consult SRL | 2019 | Unqualified opinion | Manufacturing | Not declared. | Not declared. |
| 23 | MECANICA CEHLAU | KPMG Audit SRL | 2019 | Qualified opinion | Manufacturing | Providing health insurance to ensure business continuity. Limiting public interaction. Performing tasks at home. Restricting travel outside companies. Implementation of an IT department to provide technical support in carrying out work at home. | Not declared. |
| 24 | MECANICA FINA SA | BDO AUDIT SRL | 2019 | Qualified opinion | Manufacturing | Not declared. | Pandemic risk evaluation. |
| 25 | PREBET SA AIUD | AMNIS AUDITEVAL SRL | 2019 | Unqualified opinion | Manufacturing | Affecting the downstream and upstream sectors. | Uncertainties about going concern. |

| Nr crt . | Audited company | Auditor | Period | Auditor opinion | Industry | Effects declared by the companies | Effects declared in the auditor's report |
|-----------------|------------------------|--------------------------|---------------|------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| 26 | PREFAB SA | AUDIT EXPERT SRL | 2019 | Qualified opinion | Manufacturing | An increase in turnover. Marketing an increased volume of products with an increased commercial margin. | Uncertainties about going concern. |
| 27 | PRODPLAST S.A. | DELOITTE AUDIT SRL | 2019 | Unqualified opinion | Manufacturing | Not declared. | Not declared. |
| 28 | RETRASIB SA | JP Auditors Advisors SRL | 2019 | Unqualified opinion | Manufacturing | Continued supply of raw materials (the main suppliers being in Italy). Provision of work at home by certain employees. Disinfection measures for staff and the workplace. Use online systems to communicate with employees, suppliers and customers. Optimal management of procurement of raw materials and materials. | Uncertainties about going concern. |
| 29 | ROMCAB SA | EVALEX SA | 2019 | Qualified opinion | Manufacturing | Not declared. | Significant uncertainties about going concern. |
| 30 | ROMCARBON SA | DELOITTE AUDIT SRL | 2019 | Qualified opinion | Manufacturing | Preventive measures to protect employees and collaborators. Optimizing the activity in the damaged sectors. Establishment of technical unemployment of 197 employees. Declining sales but also demand in the automotive and construction industries. | Not declared. |

| Nr crt . | Audited company | Auditor | Period | Auditor opinion | Industry | Effects declared by the companies | Effects declared in the auditor's report |
|-----------------|-----------------------------|-------------------------------------|---------------|------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| 31 | ROMPETROL RAFINARE S.A. | Ernst& Young Assurance Services SRL | 2019 | Unqualified opinion | Manufacturing | The collapse in oil prices. | Not declared. |
| 32 | SANTIERUL NAVAL ORSOVA S.A. | A.B.A AUDIT SRL | 2019 | Unqualified opinion | Manufacturing | Not declared. | Not declared. |
| 33 | SINTEZA S.A. | ACF Confident SRL | 2019 | Unqualified opinion | Manufacturing | Not declared. | Not declared. |
| 34 | TERAPLAST SA | Deloitte Audit SRL | 2019 | Unqualified opinion | Manufacturing | Potential negative developments on turnover. Adjusting fixed costs to reduce the impact on profitability. Limiting interaction with external staff and business travel, as well as the use of electronic means of interaction. 50% reduction of salaries. | Not declared. |
| 35 | TMK - ARTROM S.A. | Ernst& Young Assurance Services SRL | 2019 | Unqualified opinion | Manufacturing | Difficulties in shipping products. Restricting exports, with most products being sold in severely affected countries. Implementation of measures imposed by the authorities. | Not declared. |
| 36 | TURBOMECANICA S.A. | DELOITTE AUDIT SRL | 2019 | Unqualified opinion | Manufacturing | Purchase of tools and protective materials. Identification and use of sources of raw materials and consumables. Reprogramming delivery times. Ensuring effective communication with suppliers. | Not declared. |

| Nr crt . | Audited company | Auditor | Period | Auditor opinion | Industry | Effects declared by the companies | Effects declared in the auditor's report |
|-----------------|------------------------------------|-------------------------------------|---------------|------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| 37 | UAMT S.A. | LEOCONT EXPERT SRL | 2019 | Unqualified opinion | Manufacturing | Decrease of the company activities, due to the strongly affected field. Prudential behaviour of car buyers. Impairing the ability to access funding sources Impairment of debt repayment capacity. | Uncertainties about going concern. |
| 38 | UZTEL S.A. | SC ECOTEH EXPERT SRL | 2019 | Unqualified opinion | Manufacturing | Decreasing the volume of orders and commercial contracts. | Pandemic risk evaluation |
| 39 | VES SA | ContAudit SRL | 2019 | Disclaimer of opinion | Manufacturing | Not declared. | Significant uncertainties about going concern. |
| 40 | VRANCART SA | BDO Audit SRL | 2019 | Unqualified opinion | Manufacturing | Temporary restriction of certain sectors of activity. Some employees work from home or are technically unemployed | Not declared. |
| 41 | ZENTIVA S.A. | Ernst& Young Assurance Services SRL | 2019 | Unqualified opinion | Manufacturing | Stopping business travel. Cleaning and disinfecting the space. Increased drugs production. Increasing the price of raw materials. Delay in imports. | Not declared. |
| 42 | S.N. NUCLEARELECTRIC A S.A. | MAZARS ROMANIA SRL | 2019 | Qualified opinion | Electricity, gas, steam and air supply | Postponement of the planned shutdown for a production section. | Reserved and adjustment revaluation. |
| 43 | C.N.T.E.E. TRANSELECTRICA | DELOITTE AUDIT SRL | 2019 | Unqualified opinion | Electricity, gas, steam and air supply | Reducing electricity consumption Increasing the costs of protective materials. | Not declared. |
| 44 | IMPACT DEVELOPER & CONTRACTOR S.A. | DELOITTE AUDIT SRL | 2019 | Unqualified opinion | Construction | Not declared. | Not declared. |

| Nr crt . | Audited company | Auditor | Period | Auditor opinion | Industry | Effects declared by the companies | Effects declared in the auditor's report |
|-----------------|-------------------------------------|--------------------------|---------------|------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| 45 | TRANSILVANIA CONSTRUCTII SA | Fătăcean Gheorghe | 2019 | Unqualified opinion | Construction | Not declared. | Not declared. |
| 46 | SOCIETATEA DE CONSTRUCTII NAPOCA SA | Fătăcean Gheorghe | 2019 | Unqualified opinion | Construction | Not declared. | Not declared. |
| 47 | ALUMIL ROM INDUSTRY S.A. | Accordserve Advisory SRL | 2019 | Unqualified opinion | Wholesale and retail trade | Revision of the business continuity plan. Development of measures to prevent infection. Supply difficulties. Starting a telecommuting program. Stopping travel abroad. Effective communication with suppliers and collaborators. | Uncertainties about the receivables depreciation. |
| 48 | FARMACEUTICA REMEDIA SA | SC INTERAUDIT SRL | 2019 | Unqualified opinion | Wholesale and retail trade | Not declared. | Not declared. |
| 49 | ROPHARMA SA | BDO AUDIT SRL | 2019 | Unqualified opinion | Wholesale and retail trade | Implementation of protection measures. Reorganization of the work schedule. | Negative economic effects evaluation. |
| 50 | CONPET SA | BDO AUDIT SRL | 2019 | Unqualified opinion | Transportation | Suspension of service contracts. Monitoring the impact of contamination. Application of protection measures. | Not declared. |
| 51 | S.N.T.G.N. TRANSGAZ S.A. | BDO AUDIT SRL | 2019 | Unqualified opinion | Transportation | Reducing the monetary policy interest rate. Provision of protective equipment and materials. | Not declared. |
| 52 | OIL TERMINAL S.A. | ROMAR CO AUDIT SRL | 2019 | Unqualified opinion | Transportation | Elaboration of a business continuity plan. | Incomes evaluation. |

| Nr crt . | Audited company | Auditor | Period | Auditor opinion | Industry | Effects declared by the companies | Effects declared in the auditor's report |
|-----------------|-------------------------------------------------|-------------------------|---------------|------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| | | | | | | Implementation of protection measures. | |
| 53 | SOCEP S.A. | JPA AUDIT & CONSULTANTA | 2019 | Unqualified opinion | Transportation | Affecting the company's activity. Implementing procedures to protect employees. Resource management and limiting the impact on the financial result. Ensuring business continuity. | Influencing future activities. |
| 54 | CASA DE BUCOVINA-CLUB DE MUNTE | Russell Bedford | 2019 | Unqualified opinion | Accommodation and food service activities | Implementation of protection and safety measures. Investor information | Not declared. |
| 55 | TURISM, HOTELURI, RESTAURANTE MAREA NEAGRA S.A. | A.B.A AUDIT SRL | 2019 | Unqualified opinion | Accommodation and food service activities | Decreasing the advances received from sales and rentals. Increased debts to the state budget due to the postponement of payment terms. Decrease of the company activities, due to the strongly affected field. | Uncertainties about the going concern, taking into account that the industry is very affected. |
| 56 | TURISM FELIX S.A. | SC LEOCONT EXPERT SRL | 2019 | Unqualified opinion | Accommodation and food service activities | Decrease of the company activities, due to the strongly affected field. | Uncertainties about going concern. |
| 57 | SIF HOTELURI SA | ACF Confident SRL | 2019 | Unqualified opinion | Accommodation and food service activities | Negatively cash flows. | Not declared. |
| 58 | SOCIETATEA ENERGETICA ELECTRICA S.A. | Deloitte Audit SRL | 2019 | Unqualified opinion | Professional activities | Not declared. | Not declared. |

Source: own projection

THE „MAGIC SQUARE” OF MACRO INDICATORS DURING THE CORONAVIRUS PANDEMIC (CASE STUDY - ROMANIA)

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ABSTRACT

The outbreak of the "Chinese virus" or "SARS-CoV-2", as it was called, first detected in December 2019, has rapidly spread around the world, and the economic and social consequences are expected to be much more severe than those of other pandemics mankind experienced throughout history.

We used the magic square defined by Nicholas Kaldor in 1971 to study the impact of the coronavirus pandemic on the Romanian economy with the support of specialized software, available online.

Our paper attempts to forecast the level of economic decline under the impact of the COVID-19 pandemic between 2020 and 2021, in order to determine whether key macroeconomic indicators define a technical recession (e.g. GDP decline in two consecutive quarters) or a fundamental one. As we witnessed a strong decline in economic activity during 2020, we will present the main courses of action based on sustainability and healthy growth for economic recovery.

Finally, we outlined a set of measures, according to Keynesian theories, which, when applied, lead to the revitalization of the economy affected by the psychological impact of the pandemic, social distancing, the border shutdowns, and limits on rights and freedoms that led to "a freezing" of the national economy for several months.

Keywords: economic decline; magic square; government policy; COVID-19 pandemics; financial impact.

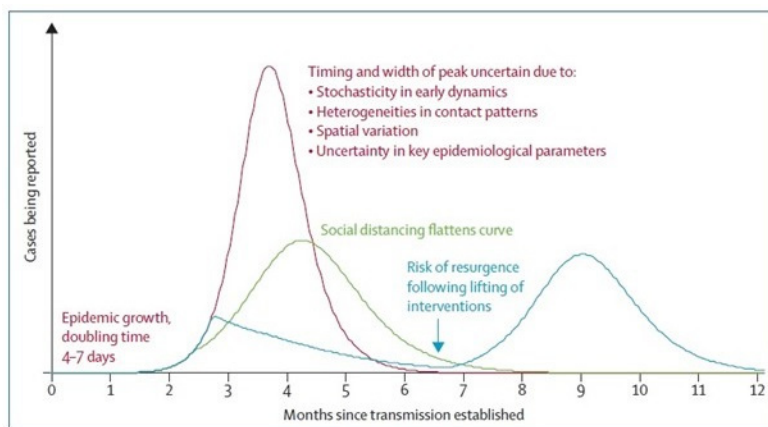
JEL Classification: D81, E12, E6, H12, O23

1. INTRODUCTION

Evolution is a natural process for humans or any living ecosystem, including viruses and bacteria. Pandemics have ravaged humanity since ancient times - the mysterious plague of 165-180 that led to the decline of the Roman Empire, the plague of Justinian that caused the death of half the world's population in the sixth century, the bubonic plague (Black Death) which reduced the population of Europe by 30-60%, these being just a few examples. Yet the pandemics continued, causing severe material damage, but also widespread deaths, each time putting the world economy to a significant test.

The first official cases of infection with the new coronavirus were registered in Wuhan City, Hubei Province on December 31, 2019. Soon, on January 24, the entire city of Wuhan with about 11 million residents was closed and declared a quarantine area.

Anderson *et al.* (2020) generated a model of the SARS-CoV-2 epidemic evolution according to the complementary measures that can be taken to limit the spread of infections in the population presented in Figure 1.



Source: (Anderson *et al.*, 2020, p. 3)

Figure 1. Illustrative simulations of a transmission model of COVID-19

The red trend simulates with case isolation; the green one represents the simulation in which social distancing rules are applied and the blue one is the simulation of the pandemic evolution if social distancing took place just for limited time and regularly it is followed by a second infection wave.

The rapid evolution of the COVID-19 epidemic has led the World Health Organization to declare a pandemic of the new coronavirus infection on March 11, 2020. According to WHO, a pandemic is the worldwide spread of a new disease. This virus has created challenges for the medical system and both the economic and social systems of the EU member states and around the world,

affecting thousands of lives. In this context, it is necessary to manage the economic and social problems as soon as possible, but also to support/ promote solutions that will support the sectors affected by the pandemic crisis.

2. LITERATURE REVIEW

Several studies (including Pritchett and Summers, 1993; Bloom and Sachs, 1998; Bhargava *et al.*, 2001; Cuddington *et. al.*, 1994) have highlighted the correlation between the health state of the population and economic growth. WHO Commission on Macroeconomics and Health (2001) and Kono (2006) study these aspects in detail using econometric models of economic growth, as defined by van Zon and Muysken, (2001).

Research focuses on the implications of mortality and morbidity in epidemics on future financial and economic outcomes. As a result, several phrases have emerged that are lately used in the modern economy.

The concept of "black swan" first appears in one of the most influential 12 books after World War II. The author of the best-selling book "The Black Swan: The Impact of the Highly Improbable" (Taleb, 2007) defines the phrase as that improbable, unexpected, even unimaginable event, similar to a tornado and referring to European explorers in Australia who were amazed at the sight of a black swan, all the swans in their imagination being white.

However, Nassim Taleb points out that the coronavirus pandemic cannot be considered a black swan, but rather a white one, as it could have been prevented. From his point of view, the black swan can be associated with the terrorist attack of September 11, 2001, but this epidemic that could have been anticipated cannot fit that pattern. As a result, organizations have no excuse for not being prepared for this, and it is certainly no excuse for governments not to be prepared as well.

Taleb also harshly criticized the reaction of the states to the epidemic that had to be stopped at the first signs, especially the Trump administration, which chose only to restrict traffic from China, so we can't talk about a black swan, since they ignored the warnings. He also explained that the fight against coronavirus cannot be separated from the economic problems that have arisen in the context in which "we do not have two parallel universes", and the problem that humanity is currently facing is also related to "too much connectivity".

In turn, the American economist Nouriel Roubini (2019), who predicted the crisis of 2007-2008, warns that a decade of economic crisis of a possible greater magnitude than that caused by the Great Depression (1929-1933) awaits us, and the impact of the pandemic on society will lead to the disappearance of many jobs.

If we comparatively analyze the two financial crises, given the difference in speed, we will see that in 2008 there was a steady and sharp decline in production over a period of 3 years, but the current crisis has caused much more chaos, effectively stopping production and putting the economy on hold, anticipating a much ampler financial effect.

In the same context, American analyst Michele Wucker, who specializes in issues related to the world economy and crisis anticipation, recalls that epidemiologists and public health experts have been predicting a possible flu pandemic or contagious disease since 2019, which would encompass the whole humanity and which would lead to a high number of deaths and severely affect the world economy.

The context provided by the concept of "black swans" provided policymakers with coverage and the opportunity not to act in the light of clear and present dangers. In the book "The Gray Rhino: How to recognize and act on the obvious dangers we ignore" (Wucker, 2016) he uses another more appropriate metaphor for these dynamics, namely the "gray rhino" to describe the effects of a crisis that fits much better the specifics of the current situation. Consequently, "the gray rhino is a massive animal of a few tons, with its horn pointed at you, stepping on the ground and preparing to attack - and, most importantly, giving you a chance to act." Paying attention to the gray rhino - that is, doing something to fix the things we see in front of us, would be a much better use of our time than retrospectively locating black swans.

3. METHODOLOGY

For the interpretation of the viability and sustainability of an economy, Kaldor (1971) proposes the parallel analysis of four variables, namely gross domestic growth, inflation, unemployment and trade balance.

The four indicators able to quantify relevantly and coherently the four major balances or imbalances of any economy are presented visually in the form of a diagram that summarizes all four objectives of macroeconomic policy: [1] balancing through economic growth; [2] balancing the economy through price stability; [3] balancing the labor market through the fullest possible employment; [4] external balancing of the economy.

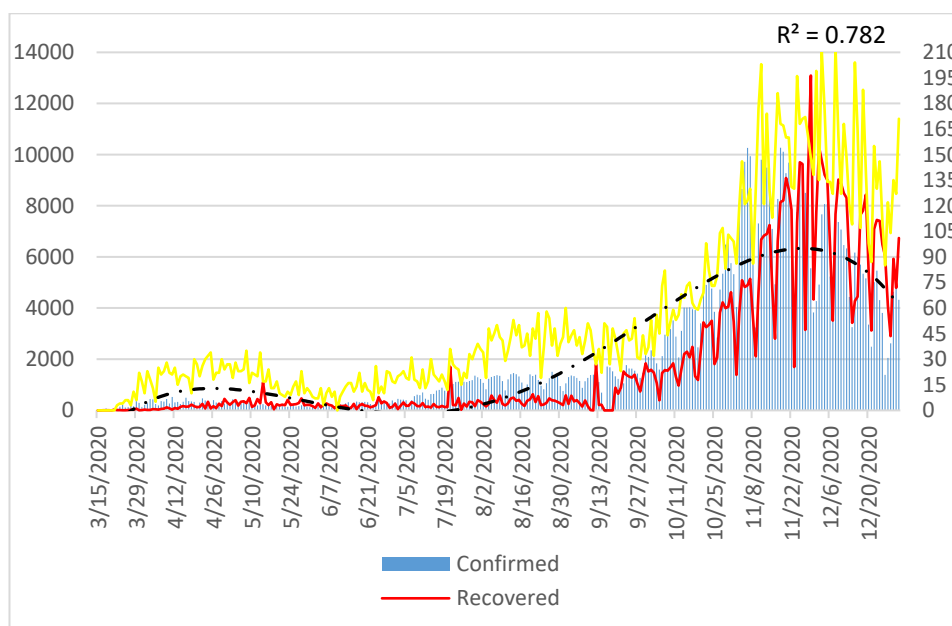
According to British economist Nicholas Kaldor, a Nobel laureate in economics, it is virtually impossible for the four previously set goals to be achieved at the same time, and for this reason, the name of the polar chart has remained "the magic square". It developed a tool for graphical approximation of financial results by introducing the four indicators on the same axes, thus generating a quadrilateral. Hence the larger the area of the quadrangle, the healthier and more prosperous the economy is considered.

In his view, a viable and sustainable economy must ensure a low level of unemployment, a balance of external payments, a satisfactory growth rate of the economy as a whole and stability of prices and wages.

The OECD proposes benchmarks for a sustainable and healthy economy, but with a null evolution. To generate this quadrilateral we used a special software, available online (Groupe d' Expérimentation Pédagogique de Sciences Économiques et Sociales de l'Académie de Versailles, 2020).

4. COVID IMPACT IN ROMANIA

The first case of SARS-CoV-2 virus infection was announced on February 26, 2020, and in the period that followed, 1-2 new cases were confirmed daily, without having a significant impact on the study. Starting with 15.03.2020, a state of emergency was established in Romania, in which some civil rights and freedoms were limited, such as the right to free movement. The evolution of confirmed infections, deaths and cured cases per day are presented in Figure 2 starting with the date of declaration of the state of emergency until 31.12.2020. The right scale is used for death number while the left scale is used for the number of cases and recovered.



Source: authors processing, data from Code for Romania/ Romanian Government/ The Authority for the Digitalization of Romania (2020)

Figure 2. The daily evolution of the CoViD-19 pandemic in Romania (confirmed cases, deaths, and registered cures)

Limiting the right to free movement came with multiple restrictions in terms of economic as well as social activities, which then gradually focused on measures of social distancing, as presented by Anderson *et al.* (2020) in their paper. Making an association between the two graphs, we can say that in the case of Romania the graph is presented starting with the 3rd month related to Anderson's simulation. Starting with 01.06.2020, the Romanian government applied social relaxation measures leading to the increase of the risk of the second wave of infection related to period 7 - 8 in the chart prepared by Anderson.

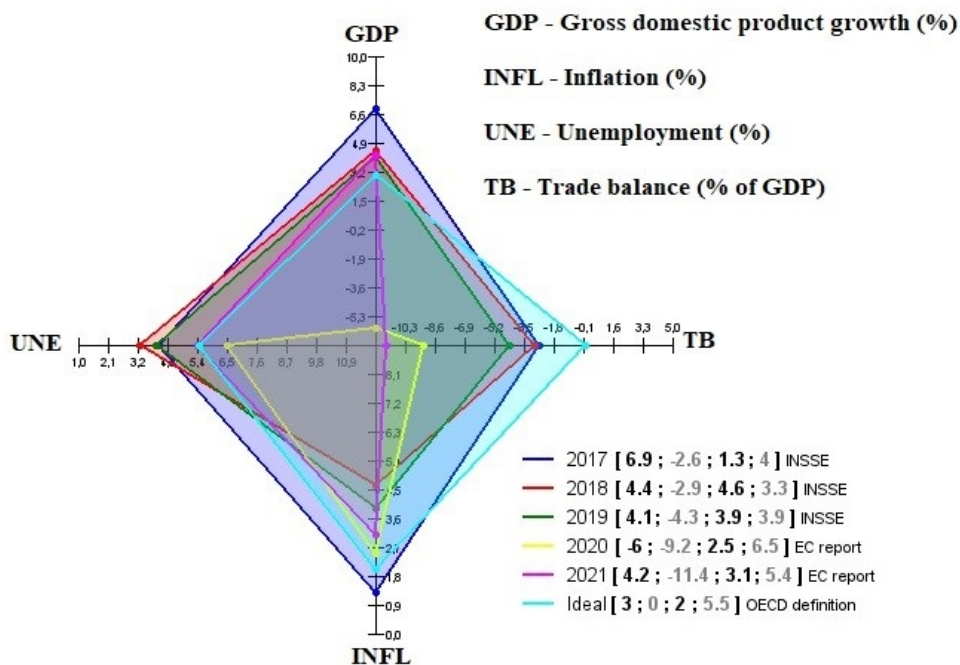
It can be seen in Figure 2 the evolution and increase of the number of active cases after 01.06.2020, culminating somewhere around 25th November. However, the highest number of daily confirmations was reached on 18.11.2020 when 10269 new cases were reported. The general decreasing trend can be observed both in terms of the number of confirmed cases and the number of reported deaths as well as the increasing trend in the number of people cured. The trend curve has an accuracy of over 78%.

Given the evolution at the national level of confirmed cases of the COVID-19 virus, as well as the measures implemented to limit the spread of infection, all led to a decrease in activity especially in the tertiary sectors - tourism, culture, trade, heavy industry, real estate, transport, and logistics, etc. All these decreases related to the economic sectors have led to changes in the structure of the macroeconomic results expected for 2020.

To create an overview of the impact of the pandemic on the Romanian economy, the instrument proposed by Kaldor (1971) was used, namely the magic square of macroeconomic indicators using the latest values estimated by the European Commission (Directorate-General for Economic and Financial Affairs, 2020) on the economic results for the current year and those for 2021. Therefore, we will try to forecast the level of economic decline under the impact of the SARS-CoV-2 pandemic in the period 2020 - 2021, in order to determine whether the key macroeconomic indicators describe a technical recession (e.g. the decline in GDP in two consecutive quarters) or a fundamental one.

Following the analysis of Figure 3, in 2020 a strong decline of the main macroeconomic indicators can be observed, which will strongly destabilize the national economy. In this context, the consolidated financial results for the current year (the area generated by the four edges of the quadrilateral) are expected to be half of those of previous years. However, the impact of economic shocks depends on the policies promoted, adopted and applied by the decision-makers of the executive power in order to prevent a possible major crisis, but also by the countercyclical measures implemented by the National Bank of Romania.

Regarding the GDP indicator, if in October 2019 the International Monetary Fund forecast an increase of 4.4% by the end of 2020 for Romania, after 6 months the European Commissioners within the Directorate General for Economic and Financial Affairs reviewed the economic prospects and eventually indicated a decrease of up to 6 percentage points compared to the previous year.



Source: * data according to INSSE Romania (National Institute of Statistics, 2020); ** European Commission forecast on the evolution of macroeconomic indicators in the case of Romania (Directorate-General for Economic and Financial Affairs, 2020); *** OECD definition of the other perfect values of the magic quadrilateral apaud (Kučera, 2012)

Figure 3. The magic square generated by Romania's macroeconomic indicators in the period 2017-2021

Although during the state of emergency the Romanian Government took measures to support the economy by subsidizing the value of technical unemployment up to 75% of the average gross salary, European economists predict an increase in the unemployment rate in Romania from 3.9% to 6.5%. According to data reported by the Romanian Ministry of Labor and Social Protection which formed the basis of the "Analysis of the impact of the minimum wage increase in Romania" published in November 2019, at that time, there were approximately 5650000 active employees. Given the unemployment rate we can further determine the labor force - about 5880000, and the approximate number of unemployed 230000. If the forecasts come true, the number of unemployed people can increase with an additional 150000, resulting in over 380000 unemployed.

According to the latest analysis conducted by UBB-FSEGA (2020) on 30.05.2020 there were a number of unemployed persons (with terminated

employment contracts) of approximately 425000 and approximately 600000 people in technical unemployment, well above the approximations of the European Commission.

In this context, in Romania, the negative influences of the pandemic on the financial system are observed. The first major player in the banking market announced an increase in the advance on mortgages from 15% to 35% given the uncertainties in the market in order to support a responsible lending policy (lesson learned from the 2008 liquidity crisis). Thus, it sent a strong message on the sustainability of economic growth in recent years. Two days later the same bank revised the required advance from 35% to 25%.

Given the presented, as well as the statements of the Romanian Minister of Finance who claimed that we are in a period of economic regression and predicts a return in V shape, the need for liquidity generated by the psychological impact of the pandemic is visible (people usually save in such periods), as well as the restrictions imposed by banks. This gap in the market will leave its mark on the prices of products and services and implicitly on the inflation rate.

European economists forecast an increase of 2.5 percentage points for the inflation indicator, a smaller advance than in previous years due to the drastic fall in the price of a barrel of oil on the free market.

This shock caused by the CoViD-19 pandemic, that generated a slowdown which almost stopped the economy, found Romania in first place in the European Union in terms of budget deficit/ (trade balance) with a share of 4.3% of GDP. This position does not benefit the country in terms of stability and sustainability. Moreover, the European Commission expects for 2020 the decrease of this indicator to the level of 9.2%, and in 2021 to the level of 11.4%, the largest deficit in the European economy. In the graph, you can practically see the alignment of two sides of the quadrilateral giving the impression that for 2021 a triangular type graph is generated.

Thirlwal (1983) demonstrates that economic results are fundamentally conditioned by the balance of payments, and therefore implicitly by the budget deficit. Without ensuring an optimal level of this indicator, the sustainability of economic recovery measures is only temporary, without solid support and basis.

Given the imminence of entering the recession as a result of the implementation of social distancing measures in Romania, both by stopping activities involving a large number of participants (educational courses, socio-cultural events, etc.) and by decreeing the state of urgency and limiting the right to free movement for all Romanians for 61 days (March 16 - May 15) we can conclude that there is a need to take the necessary measures specific to crisis management.

From a strategic point of view, the organization for the implementation of crisis management can be done in 5 stages, as follows:

- early identification of possible situations generating crises in the field of activity;
- capitalizing on existing opportunities in the markets where they operate or where they intend to operate;
- updating norms and standards;
- assessing changes in both the spectrum of the legal framework and the needs of customers;
- creating opportunities for effective leadership.

The main activities necessary to be carried out in the application of efficient crisis management, according to Zub (2015), are the following: [1] Involvement of all decision-makers in the crisis management activity; [2] Stimulating employees and using their skills in solving problems generated during the crisis situation; [3] Identifying the weaknesses of the organization and allocating the necessary resources to solve them; [4] Preparation of documents, procedures and other materials for effective communication with both the market (using media links) and stakeholders during the crisis; [5] Ensuring good information by hiring consultants or attending courses on crisis management.

Or, given the context and organizational moment specific to each entity, the pandemic generated by the infection with the new coronavirus can be described in various forms. There are organizations that consider this pandemic as a black swan, those that do not have the capacity to assimilate and interpret market signals and the economy. Other entities have considered such an event to be a gray rhino, given the analysis conducted by both epidemiologists and other professions who have concluded that the Asian area is a possible outbreak of a pandemic due to exotic gastronomy. Most, however, see the current pandemic as a white swan that is still developing, exploiting the weaknesses of governments around the world.

Regardless of the approach of this pandemic, there is a need to develop communication capabilities at the level of each entity to increase the capacity to assimilate and interpret signals from the market and the economy.

5. CONCLUSIONS AND DISCUSSIONS

The fear of an unknown killer virus causes profound psychological effects and a strengthened position towards bioterrorism or other types of threats that lead to increased insecurity, with long-term consequences. Also, the fear of the population generated by the high number of deaths may cause the absence of staff from the workforce due to the lack of prophylactic measures with a significant impact on economic results.

Following the creation of the magic quadrilateral defined by Nicholas Kaldor we could notice a strong contraction of the economy under the impact of the SARS-CoV-2 pandemic between 2020 and 2021 and we can expect not only a technical recession, but also a great crisis costlier than the one in 2007-2009. The impact of the shock will largely depend on the policies promoted, adopted and

applied by policymakers in order to prevent a possible major crisis, but also by countercyclical measures implemented by the National Bank of Romania.

The European Commissioners predict a contraction of the Romanian economy by almost half for 2020, but the analysis carried out in this study highlighted an even stronger depression. In this context, given the importance of the underlying actions for a sustainable and rapid recovery, we propose the following measures according to Keynesian theories:

- Increasing the budgetary apparatus to reduce the unemployment rate;
- Promoting the consumption of products from domestic production;
- Granting subsidies to stimulate domestic production;
- Making public investments of national interest;
- Increase in taxes and duties on imported products to stimulate consumption of domestic production;
- Resource allocation to economic entities for the internationalization of companies and support in this context for exports of goods/ services;
- Maintaining the monetary policy rate in line with market developments (in the event of a deepening crisis, downward adjustments to minimum reserve rates and the reference interest rate will be made);
- Maintaining technical unemployment support for economic entities and adjusting its amount as the economy recovers;
- Applying reasonable grace periods for unpaid debts so as not to record penalty interest leading to additional burdens on natural or legal entities;
- The reorientation of economic entities with state capital towards the manufacture of products where demand is very high, and this is not covered by supply and generates an artificial price increase.

From a managerial point of view, the crisis outlines an acute need in terms of flexibility and, implicitly, the adaptability of organizations to turbulent market conditions. Adopting a transactional leadership style, developing soft skills and even increasing the degree of diversity (gender, culture, age) in organizations inevitably lead to the development of management characterized by feminine values. This type of management generates a greater capacity to adapt the organizational culture to the specifics of the market given the instability and uncertainty in both the political and fiscal spheres.

Currently, the whole world is focused on delimiting the optimal prevention and intervention measures to limit the impact of this pandemic on the global economic results, minimizing as much as possible a major global recession.

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IMPACT OF COVID ON THE CULTURAL WORLD

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ABSTRACT

In 2020 the world has faced unprecedented times; the lockdown has affected many countries, communities and families and its waves continue to date. Cultural world, artists and the fine art market were not left aside, all principal players on this market were affected: artists, galleries, museums, events. The research focuses on studying the effects of COVID on the cultural world, concentrated around the artists and the fine art market. The methodology used is collecting data from multiple sources and online financial reports to highlight the changes in the period analysed.

Keywords: Covid-19; artists; pandemic; culture; museums; galleries.

JEL Classification: Z11

1. INTRODUCTION

The arts and culture are a fragile sector in the economy of many countries, including Romania. Although it was demonstrated the role played by the art and culture in the economic development, culture is still a sector which needs subsidies and special policies and reform. The pandemic has put a greater pressure on this sector due to the nature of the cultural activity: the artistic act connects audiences and creates special moments between the viewer and the artist; the artistic act consists of bringing people together. The pandemic forced the artistic world to reinvent themselves and to find ways to connect with audiences. The cultural institutions tried to understand the phenomenon through interviews and

surveys, so they trace the alarm timely and appropriate measures are adopted timely.

2. RESEARCH QUESTIONS/ AIMS OF THE RESEARCH

Culture is a pillar in the economic development policies of European Union and other countries worldwide. The pandemic hit all the sectors; art and culture being one of the most affected industries. How did the cultural sector, artists in the visual arts mainly, reacted to pandemic's challenges?

3. RESEARCH METHODS

The methodology used is collecting data from multiple sources and online financial reports to highlight and understand the changes in the period analysed. Sources include mainly online articles and surveys, podcasts, and interviews with people from cultural domain (fine arts), art and humanities literature, subject-specialist books as well as financial information with the purpose to corroborate the conclusions from different surveys and to understand the impact on this sector, how it has reacted to pandemic and potential measures to be considered for the future.

4. STUDIES AND SURVEYS: CULTURE AND COVID-19

The effects of the pandemic were unprecedented, countries locked their borders, airports were empty, some companies stopped the activity, people lost jobs or even worse, people got infected and humanity was hit by the number of deaths. During these times, investors watched closely the stock markets, corporations were paying attention to cash reserves to survive, economies shrank, and governments were focused on what measures to adopt to pass the crisis.

Humanity was not ready for this. Cultural world, artists and the fine art market were not left aside, all principal players on this market were affected: artists, galleries, dealers, museums, curators, collectors, etc.

The year 2020 will be the reference year of before and after COVID.

During pandemic, many persons turn to culture for comfort; movies, games, music, paintings, readings where the alternative ways people spent their time and tried to overcome the social distance and the feeling of being locked down. Online was the new normal. People got creative and created ways to connect with the neighbours: singing in the balcony, forming painting groups (e.g. "what you see from the balcony"), creating videos on the social media from homes, making jokes (e.g. - how to go to work in the bathroom). Art is a pleasure and necessity, it is that side of us that makes us apart, as people.

Culture is the key ingredient where people turn to charge themselves. The pandemic made many people return to arts in different forms. However, although many of us enjoy the art itself it is also an industry where people are working and which, as any other industry, got affected by the pandemic.

4.1 Culture and creative EU city monitor

In order to measure the impact on the art world and culture in general, European Commission has created in 2017 the culture and creative cities monitor, which supports EU policy on culture: it was a basis for the economic impact assessment underpinning the 2018 'New European Agenda for Culture', and is one of the actions included in the 'European Framework for Action on Cultural Heritage' to help ensure that the European Year of Cultural Heritage 2018 has a lasting impact (European Commission, 2018).

The monitor is based on quantitative and qualitative data, and measures three dimensions: cultural vibrance, creative economy and enabling environment. The analysis benchmark cities depending on the population.

In the culture and creative activities monitored before the pandemic, Romania had 5 cities in total 190 cities analyses: Bucharest, Baia-Mare, Cluj-Napoca, Sibiu, and Timisoara. Cluj-Napoca had the highest cultural vibrance, occupying 27th place in the 40 ranked European cities (L category, inhabitants between 250,000 - 500,000), Timisoara ranked on 35th place, having a high score on Cultural Participation & Attractiveness; Timisoara will also be the European capital of culture in 2021. In 2019, Bucharest ranked 10th in its group of 20 cities with more than 1 million inhabitants, due to its high scoring on the New Jobs in Creative Sectors. This was mainly due to the Romanian Design Week, the Bucharest Creative Quarter, who brought together artists and cultural institutions to develop a creative - business environment. The situation changes clearly in 2020.

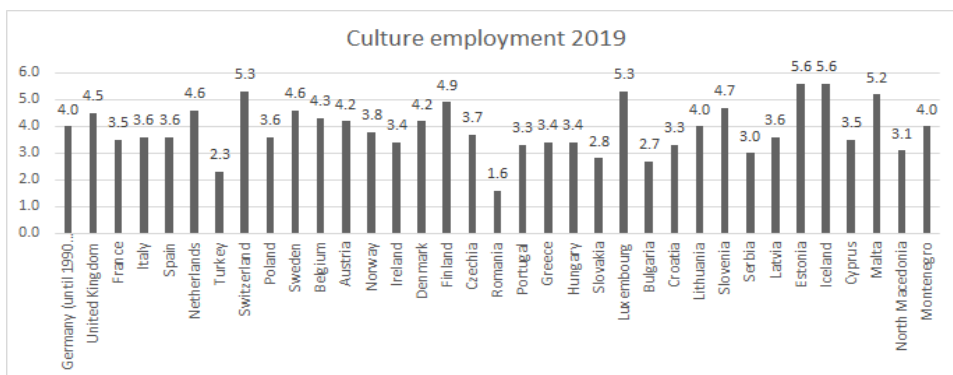
During pandemic, the culture life of the cities has been disrupted, artists being in the impossibility to get a public. The artists were one of the most affected professionals by the lockdown, due to the high number of freelancers, who rely exclusively on the artistic act for their living. In order to identify the most vulnerable cultural jobs and creative cities, the Joint Research Centre (JRC), the Commission's science and knowledge service, carried out a study done during the pandemic, using the cultural jobs statistics from Eurostat (2019) and the JRC's Cultural and Creative Cities Monitor.

The JRC's Cultural and Creative Cities Monitor study (Eurostat, 2019) revealed the following:

- Cultural jobs are particularly at risk due to high fragmentation (small companies and micro enterprises) and due to reliance upon live events and institutions/ premises open to the public. During the lockdown all the institutions and art premises were closed, and all events were cancelled. Furthermore, the artists are at risk to lose income. There is a high number of freelancers in total cultural workers: in 27 EU countries, on average 32% of them are self - employed, compared to 14% in overall employment. The percent is higher among the artists and workers (44%). They are at risk to lose income and not to have alternative sources of income.

- The decrease of tourism, closing restaurants and transport limitations affected the cultural sector in European medium sized cities. They are also affected by the lack of a diversified and larger job market as in the big cities.
- Lack of mobility affected the European-sized cities with high share of tourism jobs.
- Most governments in EU reacted with measures to support the cultural institutions through different types of measures, such as: payments of grants already allocated even if the institution was closed, indirect support such as VAT and tax reliefs, measures to compensate for income losses, other form of support such as advisory services.
- Complementary support measures have been also adopted, for instance many cities have promoted digital culture initiatives, through dedicated pages, organized open air concerts, or offered material or social help.
- The supply chain for the materials of the artwork was suspended due to the travel restrictions.

The effects of the above findings on the cities depends on the countries' cultural development. In Romania although the artistic community had been affected severely, the domain is not developed as in other more developed countries from European Union. According to Figure 1, Culture employment 2019, Romania has only 1.6% employees in the cultural sectors, however it is worth mentioning that many artists have a second job, and they might appear employed on other sector or there are artists, as freelancers, which are not include in the statistics, not having a permanent job.



Source: (Eurostat, 2020)

Figure 1. Culture employment 2019

4.2 UNESCO

The information above can be corroborated with the information UNESCO published in a special issue to highlight the impact on the cultural industries (UNESCO, 2020). The role Europe is playing in the cultural heritage is illustrated

by the fact that 40% of all UNESCO cultural heritage sites are in EU Member states (over 350 in 2019), according to EUROSTAT.

- 95% of the estimated 95,000 museums worldwide were closed in May due to COVID-19.
- Few countries which were not affected by the COVID 19, and had the museums open, were impacted by the decrease of tourism. According to the World Tourism Organization, the tourism decreased by 93% in June globally, with a 66% decrease in Europe. Measuring the arrivals, in June 2020 there were 10,089 arrivals compared with 135,635 in June 2019. In Romania, tourism as percentage of GDP is around 3%. (UNWTO, 2020). Cultural tourism makes up 40% of world tourism revenues.
- 46% of global population remains offline.
- US 10 billion film industry estimated losses by the end of May.
- Europe was one of the first region affected the pandemic. The creative industries represent a significant part in the economy. Many governments announced different measures to support the sector. At the regional level, the European Union has also launched two platforms to help share challenges and solutions at the EU level: to permit cultural ministries to exchange good practices and one to help people in the cultural and creative sectors share information and solutions more easily. In Europe, there are around 75%-80% reported losses in income for museums.

UNESCO launched ResiliArt, a global movement joined by cultural professionals worldwide to the aim to ensure continuity of conversations, data sharing and a way to change knowledge in the cultural sector.

4.3 Museums as Institutional players in the culture and creative sector

The cultural industry has institutional players, such as museums, funded mainly through the state budgets, and the independent sector, which is represented mainly by artists, free-lancers and small companies that fund themselves. The central role of the museum is to preserve the heritage and to attract and educate the communities, its performance being monitored based on the number of visits, rather than on the revenues they generated. This put them in contradiction with the independent sector which does not have any stable finance source.

The Network of European Museum Organization run a survey on the impact of COVID -19 on museums in Europe (NEMO, 2020). The museums are part of the institutional category of the cultural and creative industry's actors. There were 961 responses collected and analysed from 24 March - 30 April 2020, out of which 28 were from Romania. Responses came from 48 countries in total, including all 27 EU Member States. The results are consistent with the conclusion communicated by UNESCO and the JRC above. In addition, it is worth mentioning the following:

- 3 out of 5 museums reported losing an average of €20,300 a week due to closure and travel halt.
- Most employees in museums worked from home (over 83%) and the museums were not pressured to lay off personnel. However, 3 out of 10 museums have put on hold contracts with freelancer, and 3 out of 5 museums have stopped entirely their volunteer programs.
- The survey showed that museums relying mostly on private funding reported greater vulnerability in the past weeks.
- 4 out of 5 museums have increased their digital services.
- 2 out of 5 museums reported an increase in online visits, ranging between 10 to 150% during the reporting time.
- Museums that were able to change staff tasks and/or add resources were also able to increase their digital services and observed an increase in their online visits.
- Museums reported that next to social media, both educational and collections related materials, including video and film content, were most popular with online audiences.
- Sound metric to benchmark online visits is missing.

4.4 Galleries

Art Basel and UBS published 'The Impact of COVID-19 on the Gallery Sector', a 2020 mid-year survey written by Dr. Clare McAndrew, founder of Arts Economics (McAndrew, 2020a). The study covers galleries around the world; it was sent to 3000 galleries and 920 responded. Europe represents 59% of the responses, North America 19%, Asia 10%, and the rest by South America, Africa, Oceania. The conclusions of the survey were the following:

- Almost all galleries (93%) had closed their premises between January and July 1 of 2020, with an average closure period of 10 weeks.
- One of the biggest expenses, next to rent and art fairs participation, is the payroll expense. Many galleries had to furlough or permanently lay off staff in response to the COVID-19 crisis. One third of galleries surveyed downsized their staff in the first half of 2020. Galleries that downsized in the first half of 2020 lost an average of four employees, with around half of the losses being full-time employees.
- Comparing the first six months of 2020 with the same period in 2019, galleries reported that the value of their sales fell by 36% on average (with a median decline of 43%). Smaller galleries, with turnover of less than \$500,000, reported the largest declines in sales.
- Online in the art market was adopted slowly not reaching the pace of the other sectors. Before pandemic only 10% of the total gallery sales were done online. In H1 2020, this increased to 37%. Majority through their platform,

and only 8% using a third-party platform. The increase in online sales is concomitant with a decrease in the sales in the art fairs.

- Galleries cancelled over 50% of the exhibitions or art events they planned for 2020.
- The cancellation of the art fairs conducted to a decrease of 30% from 46% to 16% of sales through this channel in 2020.
- There will be less events planned in 2021 compared with the plans done in 2019 for 2020.
- The most support received during the pandemic was through government grants; however, in smaller art markets, it was very little access to government aid and support.

Analysing the behaviour of the consumer, the study “China COVID-19 Impact Consumer PulseCheck Survey” (MacAndrew, 2020b) highlights the increase in staying home and engaging in online entertainment and shopping online.

If before pandemic, galleries top priority was to widen the geographical reach of their clients, in 2020, their focus is to boost online sales and to maintain the relationship with the existing clients.

4.5 Romania

In Romania, all the cultural activities were suspended during lock-down. The museums and galleries connected with their audience online. Although not hit the same as the other countries where the cultural tourism and arts & culture represent a significant portion of their economy, Romanian cultural sectors were among the most affected during the pandemic. According to Bogdan Gheorghiu, the Romanian ministry of culture, in the debate organized by National Institute for Cultural Research and Training (INCFC, 2020), one disadvantage for culture is that Romania does not have the Register of the Cultural Sector, which would have facilitated the discussions with the other Ministries (Finance, Labour), for grants and facilities for the cultural sector.

As a state aid for the artists, the Romanian Government approved Emergency Ordinance no. 32/2020 which included special provisions for individuals who obtained income exclusively from copyright and related rights. These persons would receive an allowance equal to 75% of the average gross salary per country guaranteed from the general budget consolidated by the County Agencies for Payments and Social Inspection or the Agency for Payments and Social Inspection of the Municipality of Bucharest.

Another measure which was forced by the pandemic was, for the first time, after 12 years, allocation of funds for acquisition of contemporary artworks. In Romania, the acquisition of contemporary artwork was done last time in 2008. In April 2020, the Ministry of Culture announced the budget of 2.000.000 Ron for the acquisition of contemporary art, the acquisition being carried through the

Contemporary National Art Museum (MNAC). The Ministry of Culture and MNAC are working now to develop the methodology for acquisition of the contemporary artworks (Ministry of Culture, 2020).

The Romanian Culture Institute (RCI, 2020) had suspended during lockdown all the events around the world, and it has organized the Art Fights Corona - Artists React to the Pandemic - Works & Talks Series.

Most of the cultural institutions tried to connect with the audiences online or using their premises to help the community. The pandemic put a lot of pressure on this segment of economy.

5. CONCLUSIONS

One threat of COVID -19 is on employment, as shown the sector is most exposed to the unemployment and without proper support, this will have a negative effect on the economy in general and on the future recovery and sustainable growth.

The internet and technology made possible the real-time connections and shares of knowledge and ideas. All the webinars, talks and surveys were all possible due to technology. COVID-19 accelerated the changes in the digital dimension of many institutions, however not all institutions have the same level of technology adoption.

The landscape of the cultural sector will change in the future, the digitalization and technology should be a priority to create the new experience for the communities. This will allow the art and cultural organizations to attract new audiences from the public. However, it is worth mentioning that the technology did not bring additional revenues to the cultural institutions, it has mainly increased visibility and the online visits. In the past there were large debates regarding the subsidies to the cultural sectors. In the digitalization era, the governments should consider the benefits brought by the cultural experience and to reconsider the level of the allocated funds and the criteria for allocating them.

The cultural institutions should find new ways of connecting with players from different sectors to attract new sources of financing. Another matter that should be considered is to think of multiple purpose for their spaces, giving them different destinations (partnerships with corporations for small groups working in the museums or galleries.).

A significant number of small players from the independent sector might disappear.

The museum and galleries should be focused on what they have unique and they should promote and connect the appropriate partnerships for the communities.

The organizations should be aware of the institutional isomorphism and collective rationality in organizational fields (DiMaggio and Powell, 1983), which asserts that uncertainty encourages imitation, and the more uncertainty the more

an organization will model its structure after successful firms. There is a risk of uniformity and copying the successful ones to the detriment of innovation and diversity.

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HOW DO RESTAURANTS COPE WITH THE POST PANDEMIC ENVIRONMENT? EVIDENCE FROM A MENU ENGINEERING APPROACH

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ABSTRACT

The Covid-19 pandemic affected largely the Food and Beverage industry across the globe. While various restaurants attempted different solutions to the crisis, rather often, a menu reconfiguration was envisioned. The current research focused on comparing the pre lockdown and post lockdown menus in Romania where the main lockdown occurred between mid-March and end of May 2020. We analyzed to what extent the menu items performance was considered when adjusting the post lockdown menu from a menu engineering perspective. The menu engineering analysis performed on the pre-lockdown menu of the chosen leading local restaurant indicated a rather solid performance. Surprisingly though, only 12 out of 19 items ranked as stars were kept in the post-lockdown menu which represented a reduced version of the pre-lockdown menu. The items ranked as cash cows and puzzles performed rather well while the few new additions were generally more a failure than a success. The results indicate that at the management level a thorough consideration of the menu engineering matrix could prove a useful decision support tool when performing menu adjustments. Moreover, due to the fluid pandemic context, a more frequent, even weekly, such analysis could provide real time decision support for various decisions in the Food & Beverage industry volatile environment.

Keywords: restaurants; Food & Beverage industry; hospitality; pandemic.

JEL Classification: L66, L83

1. INTRODUCTION

The recent SARS Cov2 pandemic affected a series of industries, among the hardest hit being a large part of the Food & Beverage sector, namely that consisting of a variety of businesses providing food, beverages, or both to consumers for commercial profit. The non-commercial sector of Food & Beverage, such as canteens, prison food facilities and others were less affected. A study which alarmed the authorities regarding the super spreading potential events

in restaurants was the one performed in Guangzhou, China where 10 infection cases corresponding to 10 members of 3 different families were traced and tracked (Lu *et al.*, 2020). More evidence came from another event, this time in Ischgl, Austria, where apparently another superspreading event occurred at a bar hosting apres-ski parties. In Norway alone, 161 imported cases were reported from that particular event attended by a number of Norwegian tourists (Correa-Martinez *et al.*, 2020). Faced with such reports, various authorities across the globe decided upon imposing restrictions to the Food & Beverage operations. Many were closed as part of a general lockdown strategy for a certain amount of time, afterwards still facing limitations such as outdoor seating allowed only, certain safety measures, limited hours of operations and others. Since then, there is a real need for estimating the impact of these measures on the sector.

We know that any type of restrictions on human mobility are highly likely to impact the tourism industry due to its reliance on this mobility (Yang *et al.*, 2020). For the Food & Beverage sector, the fall of tourism activities resulted in a lower flow of clients. An early impact study in the US showed that the sales were down 47%, 7 in 10 restaurants had to lay off personnel and reduce the number of hours worked and 60% had to reduce their operating hours (National Restaurant Association Report, 2020). The same report indicated for the first 22 days of March alone a loss in sales of 25 billion USD and 3 million jobs lost.

Those companies in the Food & Beverage industry having a larger size and access to more resources (most importantly cash), are in a better position to navigate through the current crisis by funding themselves and enjoying higher levels of investors' market valuation (Ramelli and Wagner, 2020). This finding is consistent with other similar studies (Ding *et al.*, 2020; Song *et al.*, 2021). Among the usual strategies, companies use such as diversification, internationalization, merger and acquisitions, research and entrepreneurship, a recent assessment pointed out that internationalization alone positively moderates the relation between SARS Cov2 and stock returns. This could be due to the investors regarding internationalization as a way of spreading risks and hence being positively influenced by this perception. Interestingly enough though, the franchising process has not been perceived as a risk reducing factor, most probably in the context of omnipresent damages due to SARS Cov2 (Song *et al.*, 2021).

2. BASICS OF MENU ENGINEERING

Menu engineering as a concept has been proposed as early as 1982 by Kasavana and Smith (Kasavana and Smith, 1982). It consists of analyzing two major components of the menu items: the net margin per item, sometimes referred to as the net contribution and the popularity factor. As per Ninemeier (2004) approach, the contribution margin calculations derive from the menu items analysis, while the popularity factor can be computed following a menu mix

analysis. The first one, the menu items analysis, simply lists all menu items with their price and their portion cost, consequently determining the contribution margin. Worth mentioning is the fact that part of this menu items analysis as portion cost is solely considered the food cost. No operational, financial, or other types of costs are considered when performing it. The second one, the menu mix analysis aims at providing the proper popularity factor for each item. According to Schmigdal *et al.* (2002), the most accurate way to calculate the popularity factor is to calculate a threshold at 70% of the expected or potential item popularity. The potential item popularity is obtained by dividing 100% at the number of menu items contained in the menu. For example, if the menu of a restaurant consists of 25 items, therefore, the expected or potential item popularity is 4%. The threshold above which an item would be considered popular is 70% of 4% which is 2.8% of the items sales. Below the share of 2.8% of sales, the item is considered unpopular.

3. A FOUR STAGES APPROACH

We considered comparing the menu engineering matrix corresponding to various menu categories before the lockdown measures and after the conditional reopening which occurred in June 2020 for the Romanian restaurants. The approach has been partly inspired and adapted from previous research on the re-engineering of menu engineering (Noone and Cachia, 2020).

Stage 1. Develop a menu engineering matrix for the pre lockdown menu. It aimed at creating and calculating the traditional menu engineering matrices for the pre pandemic menu and for the pandemic menu. In this phase menus are analyzed and, depending on their structure and volume, a matrix can be developed for the entire menu or for sections of it such as menu categories (e.g. soups, pasta & risotto, starters, a.s.o).

Stage 2. Determine the criteria for importing old menu items in the new menu. At this stage, once the classical ranging of menu items according to the BCG matrix is made, separating those into cash cows, puzzles, dogs and stars, an analysis is performed on which of them was selected for the new menu.

Stage 3 Develop a new menu engineering matrix for the post lockdown menu. Having a new menu based on selected old items and new ones, a new menu engineering matrix calculation provides evidence regarding the performance of those items. Especially in the case of items which could be found in both pre lockdown and post lockdown menus a performance comparison could be enlightening, showing how the pandemic affected their performance.

Stage 4. Compare pre- and post-lockdown sales. To compare the impact on overall revenue of the pre- and post-lockdown menus, a paired sample t-test is performed on the two sets of data regarding the sales and contribution margin. The end goal was to determine the existence of significant differences among the two.

For the paired sample t-test only the menu items found in both pre- and post-lockdown menus were considered.

4. METHOD

We used 2 sets of data from a Romanian restaurant with a combined indoor and outdoor capacity of 150 seats. In Romania, the general lockdown which affected restaurants came in effect on March 15, 2020. The conditional reopening occurred on June 1 with different restaurants deciding upon opening precisely on that date or later. We planned on comparing two sets of data, one prior to the lockdown against the one right after the lockdown. The showcase restaurant had a post lockdown menu adaptation in place for a period of three months, afterwards, implementing a new menu. Therefore, we decided upon comparing the set of data corresponding to the months of June, July and August of 2020 with a similar set of data corresponding to the same three months June, July and August of 2019. To ensure the confidentiality of data, the menu items were renamed according to generic names given within the industry.

The restaurant menu we analyzed features a total of 9 menu categories out of which we selected 6 categories considered the most relevant, namely: (i) starters; (ii) soups; (iii) pasta and rice; (iv) fish; (v) meat; and (vi) desserts. When calculating the food cost, we used the historic method, taking advantage of the fact that the prices of the ingredients are updated monthly, consequently we based our calculations on those acquisition costs in the respective month rather than the current ones as some authors do (Noone and Cachia, 2020).

Certain menu items were removed from our analysis. Such items fell into one of the following categories: (i) menu items which were tested and then taken off the menu, therefore their presence in the menu being only temporary for a month usually; (ii) menu items which were supplied on a certain occasion such as a special event lasting a day or a weekend; (iii) menu items which were listed in the menu but experience some zero sales months.

5. DATA ANALYSIS

Stage 1 Develop a menu engineering matrix for the pre lockdown menu.

For the purpose of achieving comparability, we developed in fact 6 different menu engineering matrices corresponding to the 6 menu categories. Within each matrix we could identify how the menu items performed in relation to their contribution margin and menu mix percentage and consequently assigned each item to one of the four BCG matrix quadrants: stars, cash cows, puzzles, or dogs. Table 1 displays an example of these calculations for the starters as a menu category. Similar calculations as per menu engineering principles have been performed for the remaining 5 categories.

Table 1. Starters menu item baseline performance date (June-August 2019)

| | Quantity sold | Category mix | Contribution margin |
|----------------|---------------|--------------|---------------------|
| Fresh Cheese | 250 | 5.53% | 39.96 |
| Fish | 133 | 2.94% | 37.02 |
| Cold cuts | 85.5 | 1.89% | 56.83 |
| Beef Tartare | 70 | 1.55% | 65.79 |
| Smoked fish | 145.5 | 3.22% | 28.02 |
| Liver pate | 724 | 16.00% | 17.14 |
| Beef Carpaccio | 548 | 12.11% | 19.04 |
| Bruschette | 589 | 13.02% | 19.69 |
| Marinated fish | 39.5 | 0.87% | 18.87 |
| Fried fish | 34 | 0.75% | 17.98 |
| Oysters | 201 | 4.44% | 18.70 |
| Fresh fish | 33.4 | 0.74% | 57.63 |
| Caprese Salad | 171 | 3.78% | 26.23 |
| Cesar Salad | 420.75 | 9.30% | 28.10 |
| Italian Salad | 210 | 4.64% | 33.03 |
| House Salad | 444.5 | 9.82% | 21.72 |
| Greek Salad | 425.5 | 9.40% | 21.89 |

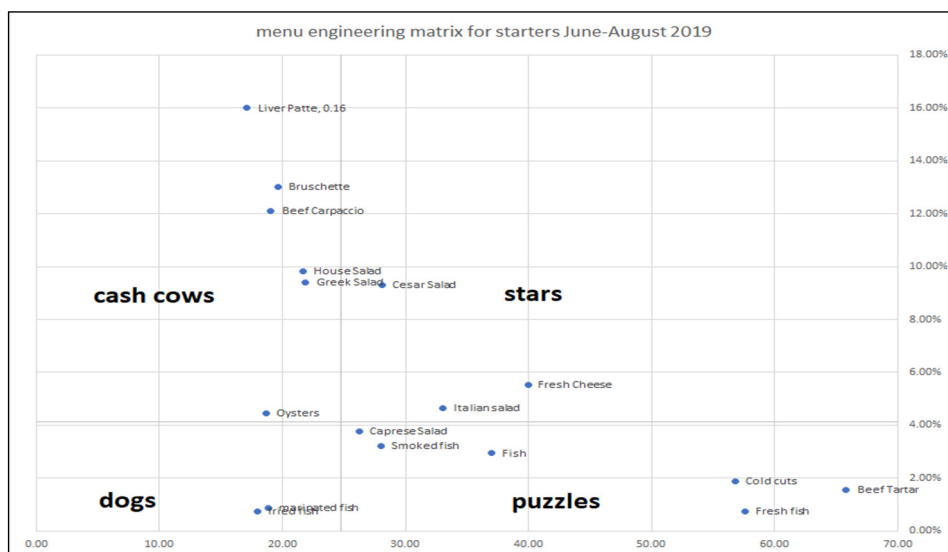
Source: data collected and processed by the author

Subsequently, a number of 6 matrices have been developed for each of the 6 menu categories we focused on as part of this study. The advantage of the graphic matrix does not consist solely in visualizing the 4 categories of menu items depending on their menu mix percentage and contribution margin as stars, cash cows, puzzles, or dogs but also in understanding where each product stands in terms of volume. In other words, the liver pate for instance, although a cash cow, has such a high sales share, of 16% of all sales of all 17 category items, that it becomes an indispensable menu item.

Along the development of menu engineering matrices for all menu categories considered in this study, several specificities and several patterns were identified for the restaurant studied. Firstly, we will refer to the specificity of each menu category.

The Starters menu category counted 17 menu items, out of which, we identified 3 stars, 6 cash cows, 6 puzzles and 2 dogs. 5 out of 6 cash cows performed very well accounting together for over 60% of the menu mix, which points out the significant value they brought to the operation by such impressive popularity. In terms of the share of total contribution margin, calculated as sales minus food cost, the cash cows accounted for over 50% of this type of margin. Interestingly enough, although bearing a larger than average contribution margin, the 6 puzzles could not provide a higher total contribution margin than the one of the 3 stars (22.18% versus 25.63%) let alone the same margin calculated for the cash cows. As a conclusion this menu category was found featuring some solid

performing menu items classified as cash cows but slightly too many puzzles with a doubtful performance. A graphical representation can be seen in Figure 1.



Source: author's own research

Figure 1. Traditional menu engineering matrix for starters June-August 2019

The Pasta and Risotto menu category counted 14 items, out of which we identified 4 stars, 6 cash cows and 4 puzzles. Overall, the performance of menu items looked superior to the previous category studied, the Starters. The stars, this time, accounted for 43.34% of the total contribution margin, while the cash cows accounted for a comparable percentage (43.5%). The puzzles were low performing puzzles at only 14.16% of the total contribution margin, while the dogs were absent. As a conclusion, this category had a balanced, close to optimal distribution of their menu items into the 3 BCG categories: stars, cash cows and puzzles.

The Fish and Seafood menu category had a total of 10 items. Their performance was yet superior to both previous categories examined. It consisted of 4 stars, 5 cash cows and 1 puzzle. The stars contributed 55.99% of the total contribution margin, while the cash cows contributed 41.1%. The puzzle had only 2.9%. This category had an impressive layout of results.

The Meats menu encompasses 23 different menu items. After applying the menu engineering matrix analysis, it resulted in a number of 4 stars, 10 cash cows, 8 puzzles and 1 dog. In terms of their share of the total contribution margin, the puzzles surpass the stars (24.73% versus 22.87%) and the cash cows account for over 50% of the total contribution margin, while the dog has below 1%. This category can be significantly improved in terms of menu items distribution and

performance. We could see its struggle through the numerous attempts of introducing new items for tests or occasional offers during the period taken into account.

The Desserts are a rather small category, including 9 items out of which 3 proved to be stars, 2 cash cows, 1 puzzle and 3 dogs. It had the highest percentage of lowest performing items, 3 dogs, which accounted for 15.05% of the total contribution margin. The stars and the cash cows cumulated over 77%, while the puzzle only 7.9%. Similar products were tested, introduced, and then pulled out of the menu, as a proof of the struggle of this category. In brief, there was plenty of potential growth in this category due to its modest overall performance.

The Soups was the last and the smallest category considered, being formed of only 4 items, 3 cash cows and a puzzle. Evidently, being the single category with no star product, a change was needed.

Stage 2 Determining the criteria for importing old menu items into the new menu. To put things in perspective, we shall mention that after the lockdown period of roughly 3 months, several restaurants decided to use at the time of reopening (June 2020) a limited choice menu. This menu was based mostly on the old one with a few new additions. The case of our restaurant reflects this context very well. The management decided to keep certain items. We performed an analysis to see whether the decision of which menu items to be kept was based on reliable data or not. We considered as being reliable data the results of the previous stage menu engineering matrix development.

We compiled a set of data illustrating the distribution of menu items falling in the 4 categories: stars, cash cows, puzzles and dogs for the old menu and the new menu with the purpose of comparing whether the most successful menu items survived in the limited menu offered after post lockdown (Table 2).

Ideally, all the stars would have made it to the new menu. In our case, 7 out of 19 did not make it. As for the cash cows more than a half made it to the new menu (17 out of 31), while the puzzles represented roughly only one third of the old menu puzzles (8 out of 21). Surprisingly enough, one menu item categorized as dog made it to the new menu. As we interviewed the decision makers, it was a combination of lack of detailed information regarding the performance of those items combined with other challenges such as supply issues, shortages or labor-intensive preparation which was difficult in the circumstances of reduced personnel. A better ratio stars/cash cows/puzzles could have been envisioned, but overall, the selection reflects a rather sound management decision making process.

Table 2. Pre lockdown menu versus post lockdown menu structures based on existing menu items

| | Post lockdown menu June-August 2020 | | | | | |
|---------------|-------------------------------------|-----------|-----------|----------|----------|-------------|
| | Stars | Cash cows | Puzzles | Dogs | New | Total items |
| Starters | 0 | 5 | 1 | 0 | 1 | 14 |
| Pasta risotto | 2 | 4 | 0 | 0 | 3 | 9 |
| Fish | 3 | 0 | 0 | 0 | 0 | 3 |
| Grill | 5 | 5 | 5 | 0 | 3 | 18 |
| Soups | 0 | 2 | 1 | 0 | 0 | 3 |
| Desserts | 2 | 1 | 1 | 1 | 0 | 5 |
| Total | 12 | 17 | 8 | 1 | 7 | 45 |
| | Pre lockdown menu June-August 2019 | | | | | |
| | Stars | Cash cows | Puzzles | Dogs | | Total items |
| Starters | 3 | 6 | 6 | 2 | | 17 |
| Pasta risotto | 4 | 6 | 4 | 0 | | 14 |
| Fish | 4 | 5 | 1 | 0 | | 10 |
| Grill | 5 | 9 | 8 | 1 | | 23 |
| Soups | 0 | 3 | 1 | 0 | | 4 |
| Desserts | 3 | 2 | 1 | 3 | | 9 |
| Total | 19 | 31 | 21 | 6 | | 77 |

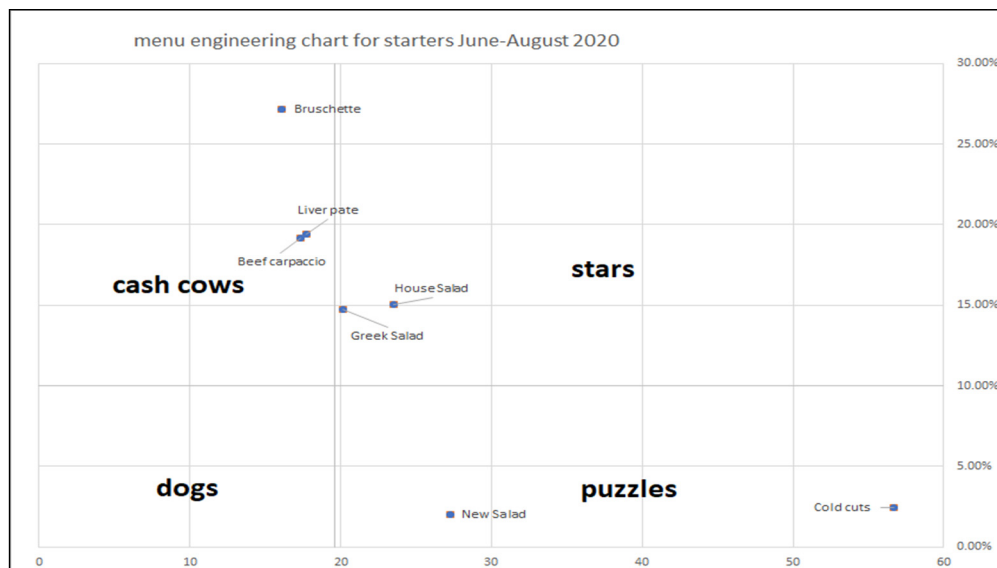
Source: author's own research

Stage 3 Develop a new menu engineering matrix for the post lockdown menu. With the new data set concerning the performance of the menu items in place, we proceeded with the development of a new series of matrices, 6 of them, one for each menu category.

Since the previous example was based on starters, we chose to present the equivalent matrix for starters corresponding to the same 3 months period (June, July, and August) for 2020. After the pandemic menu readjustment, this category was reduced from 17 items to only 7 with 6 of them being kept from the pre pandemic menu while one new menu item alone was added. We can notice from the chart that the new addition for this menu category, coded as New Salad, performed the worst, being ranked by our menu engineering analysis as a “dog”. The 2 menu items formerly categorized as cash cows, the House Salad and the Greek Salad now moved into the star's category. The rest of the 4 items kept their original positions, 3 as cash cows and 1 as puzzle.

Another interesting analysis at this point consists in identifying how the pre lockdown menu items performed in the post lockdown menu. For *starters*, where we saw none of the 3 stars being imported in the new menu, we saw 2 former cash cows becoming stars of this category. The other 3 cash cows stayed in the same category and the one item classified as puzzle did the same. Interesting enough is that the newly introduced items, a type of salad, codified as New Salad performed

rather poorly as puzzle but with slightly higher profitability than the average one (Figure 2).



Source: author's own research

Figure 2. Post-lockdown menu engineering matrix for starters

As far as the menu category *Pasta & Risotto* is concerned, the 2 stars kept on performing as stars and 2 new products ranked as well as stars, proving that new additions were inspired. The 4 cash cows kept also performing as cash cows and finally one new addition was ranked as a dog. The ratio of stars to dogs of 2:1 for newly introduced menu items proved the decision being rather efficient.

For the *Fish* category we noticed how the 3 stars selected to be included in the post lockdown menu with no additional new items performed as cash cows, 2 of them, respectively puzzles, the remaining one. However, they were situated slightly below the threshold. More precisely, the average contribution margin for this category was 43.67 lei and the 2 cash cows had a contribution margin of 43.48 lei and 42.05 respectively, so they could very well be considered as performing as well as stars.

The next menu category, Meats performed differently and surprisingly to a certain extent. Only 1 out of the 5 items previously ranked as stars remained star in the post lockdown menu. 2 of them became puzzles and 2 became cash cows. Out of 4 cash cows kept in the menu, one became a dog and 3 remained cash cows. 2 out of 5 puzzles became stars, while one became a cash cow and the remaining 2 stayed in the same category as cash cows. The new additions, 4 of them, performed rather poorly, with 2 of them being ranked as dogs and the other 2 as

puzzles. This shows a lack of managerial intervention at the level of pricing and promoting certain items since this category performed below par.

When analyzing the new menu engineering matrix of soups, we saw a linear evolution with the 2 cash cows kept staying cash cows and the puzzle remaining puzzle. Predictably the sour soup, a cash cow, captured the menu mix share of the other sour soup eliminated from the menu while the other cash cow remained along the same indicators as well, the 3rd soup however, while still a puzzle as before, almost doubled its menu mix share while keeping a contribution margin almost double than the cash cows' contribution margins combined (42.43 lei versus 13.33 lei, respectively 10.01 lei). Here, the evolution of this menu category was very good when considered through a menu engineering lens.

For the desserts we finally saw some interventions bearing their fruits. Both stars of the category during the pre-lockdown menu became cash cows, their menu mix share grew with approximately 3% in the new menu. One cash cow replaced its position as a star through a contribution margin increase of 31%, a very smart move. The achievement of a higher contribution margin for this product was explained through more inexpensive and higher quality sourcing of a main ingredient which is an ideal combination. The dog which survived in the new menu kept on being ranked as a dog but with a 0.06 lei only lower contribution margin than the average. Overall, for the desserts, the evolution was positive.

Stage 4 Verify whether there is a significant difference in revenue for those items which could be found in both pre- and post-lockdown menus. Since prices and quantities are different from one menu to another we took into consideration, the revenue alone. As part of our analysis, the revenue corresponds to the total margin per menu item. Therefore, based on practices often found in the literature, we verified through a paired sample test whether there are significant differences between the mean of revenues for those menu items found in both pre- and post-lockdown menus. By performing this paired samples test we found a significant difference of only 20.6%, which adjusted with the standard risk of 5% leads to the conclusion that there are no significant differences between the means of the 2 sets of revenues. One possible explanation might be that certain low performing products have been extracted from the original menu (Table 3)

Table 3. Paired samples test

| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|--------|-----------------------------|--------------------|----------------|-----------------|-------------------------------------------|----------|-------|----|-----------------|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | revenue_2020 - revenue_2019 | 1279.076 | 6211.669 | 994.663 | -734.514 | 3292.666 | 1.286 | 38 | 0.206 |

Source: author's own research

6. DISCUSSION AND MANAGERIAL IMPLICATIONS

One first possible managerial implication might be that in case of a crisis, the selection of menu items whenever menu adjustments are performed could be done based on sound science. Often enough, a crisis can lead to a menu transformation, in our case, a simplification, depending on demand, available resources or other factors. This menu transformation should be based on a menu engineering matrix analysis to determine the most profitable and popular items. Those items shall remain part of the menu conducive to increased profitability if other elements such as short supply or sanitation concerns are not obstructing this practice.

A second idea is linked to the fluid context which might persist well beyond the current pandemic context. It could be useful when changes occur fast to assess more frequently the menu items. When we say more frequently, we mean even weekly so the managers could react fast to performance variations.

A third approach has been suggested already in the literature (Ninemeier, 2004; Noone and Cachia, 2020) and performing the current research we could confirm it and it refers to the management operating certain price adjustments based on the menu engineering analysis. For example, some cash cows could become stars as a consequence of smartly performed price increase. Puzzles could become cash cows through a reduction in price or could become even stars if promoted efficiently enough.

7. LIMITATIONS AND FUTURE RESEARCH

Several limitations could be mentioned such as a flexible system of beyond the menu ordering. That means that due to a natural desire to satisfy guests' requests, the restaurant often takes orders for products not listed in the menu. Those are: (i) former menu items that the loyal customers still prefer despite the

fact that those items are no longer part of the menu; (ii) occasional menu items due to the rarity of its sourcing; and (iii) special requests on behalf of guests. This is hard to count as part of the menu engineering analysis. If such a non-listed item is calculated as part of the menu mix, then the natural question arises how can this item's popularity be assessed correctly since other customers did not have a chance to be informed of its availability? The menu engineering matrix is limited to only the officially listed menu items.

When comparing the pre lockdown menu with the post lockdown menu we considered purely the performance of menu items in terms of menu engineering analysis. Based on this we judged whether the right menu mix was realized for the post lockdown menu, in other words, did the restaurant keep the best performing items? However, a few other constraints shall be taken into account. One of them is the ease of supply, however this was not a major obstacle as most supply chains were almost unaffected by the pandemic and the restaurant in our study did not report any significant supply rupture. Another one, more relevant was the reduction of personnel, in this case, it might be interesting to perform an analysis based on production times. This would be useful to answer the question whether the restaurant renounced the most time-consuming menu items in the context of shortage of staff. The shortage of staff was not due to inferior manpower but to the necessity to allow more space and less crowding in the kitchen to avoid the virus transmission. The culinary production time is split into 2: the preparation ("prep time") and the final production. Summing up those 2 timings and checking the correlation between time consuming items and their abandoning for the new menu could be of real interest for future research.

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THE E-BANKING SERVICES AFTER THE COVID-19 PANDEMIC - AN ANALYSIS OF THE BEHAVIOURAL INTENTIONS

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ABSTRACT

This paper propounds itself to exhibit the mode in which the consumers have changed their usage behaviour of e-banking services during the COVID-19 pandemic. By way of taking into consideration the low rate of using the e-banking services in the last few years, in Romania, it is envisaged that the percentage will soar in the future. At the basis of this assumption can be taken into account the results of the quantitative marketing research conducted amongst the Romanian citizens. Through the elaborated questionnaire, the behavioural intentions of the respondents were analysed. The collected results may suggest the advent of a new era in the use of e-banking services among the consumers.

Keywords: behavioural intentions; COVID-19 pandemic; e-banking.

JEL Classification: G20, G40

1. INTRODUCTION

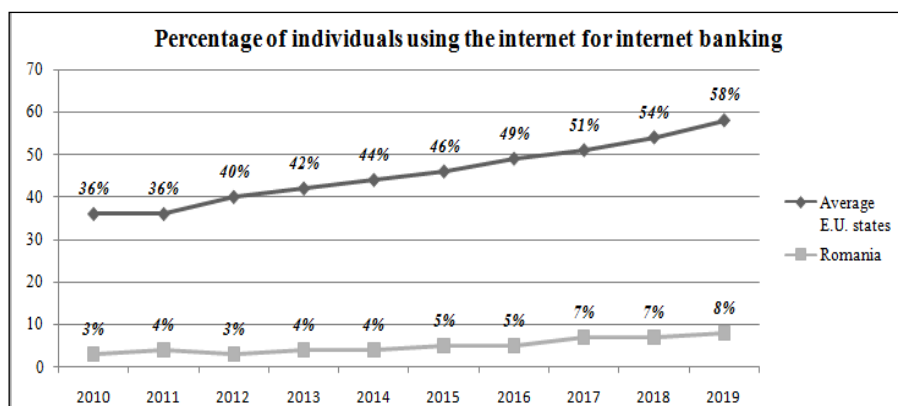
The use of e-banking services has known continuous development lately. This fact may be well due to the emergence of new technologies on the market.

Unfortunately, not all the countries in the world keep up the pace with these new trends. If we are to construe a comparison between the European Union (EU) countries, we will notice the fact that there are significant differences among these. This thing may be observed in the Eurostat statistics, which expound upon the rate of persons who use the Internet, to use the Internet Banking services (Figure 1).

The average percentage registered by all the countries in EU, during 2010-2019, had a spectacular rise. If in 2010, only 36% of the people with the age between 16 and 74 years used the Internet for the Internet banking services, nine years later, the percentage rose to 58% (European Commission, 2020).

If in 2010, Romania registered a percentage of 3% for this indicator, in 2019, the percentage soared up to 8% (European Commission, 2020). This exponential growth has been sustained, most probably, also by the Internet connection speed.

In 2018, Romania has been placed upon the fifth rank in the world in this area, a fact that could lead to an increase of activities deployed in the online environment (Melenciuc, 2018).



Source: author's processing; Eurostat database (European Commission, 2020)

Figure 1. Percentage of individuals using the Internet for internet banking, within the period 2010-2019, in E.U. and Romania

Taking into consideration the current context, triggered by the COVID-19 pandemic, it is expected that these percentages will continue to go up.

The purpose of this paper is to analyse the behavioural intentions of Romanian consumers, to the e-banking services. In case of positive intentions, which would promise a more intense use of these services, are not detected, it will be interesting to find out the factors which determine this attitude.

Firstly, it will be made a brief delineation of some important notions in the specialised literature. Then, will be conducted a survey. In the end, some evaluations may be construed to predict the future of e-banking in Romania, based on the results of the quantitative research.

In this paper will be used primary data (collected from the questionnaires completed by respondents) and secondary data (collected from the specialised literature).

2. LITERATURE REVIEW

2.1 E-banking: concept and characteristics

According to Mogos and Jamail (2020), the concept of e-banking “refers to the atomized delivery through electronic or some additional communication channels of some new or conventional banking products and/or services in a straight line to consumers” (Mogos and Jamail, 2020).

The implementation of Information and Communications Technologies in this field of activity not only has the role to better satisfy the needs of consumers. It has a managerial objective, which is targeted directly towards the company. This objective is represented by the influence of the “management decisions, plan and products and services to be offered by banks” (Onodugo, 2015).

The emergence of e-banking services may reside based on the financial dimension of globalisation (Inegbedion *et al.*, 2020). Therefore, it may well be said that the introduction of some such services aids the creations of links between individuals. Consequently, the transactions may be effected even from different corners of the world. Moreover, this opportunity epitomizes even one of the advantages which the e-banking services entail.

In conformity with a study, the following dimensions may be taken into consideration by the consumers, when they decide to use the e-banking services: “customer service”; “technology convenience”; “technology security and information quality”; “technology usage easiness and reliability” (Ganguli and Roy, 2010). Keeping account of these concepts, the e-banking services providers may adapt their offers. A scale might be created, through which the services put at the disposal of the consumers can be evaluated. Thus, it may be known which of the dimensions represents a weak point and might be improved.

At the same time, besides the highlighting of these variables, one may have to work on the reduction or even elimination of “the underlying fear due to lack of trust of the online service provider” (Ahmad *et al.*, 2019). This fact can be realized by increasing the level of consumers’ education, regarding the use of these services. On the other part, banking units may integrate into their online platforms different safety systems, which may bring a high level of confidence in the ranks of the consumers.

Evolving towards a system based primarily on e-banking services might be considered an efficient measure. The same thing happened when there was an evolution from a system based on cash to a system based on credit cards. Some explanations which are at the basis of the affirmation regarding credit cards are these: “diseconomies of scale in cash supply rises as cards displace cash, while economies of scale improve for cards” and “the displacement relegates cash to smaller transactions because smaller transactions must cover the fixed costs of the cash system” (Odior and Banuso, 2012).

The technology will have a great impact on the evolving based on e-banking services. This fact will increase the importance of change, because “although the infusion of technology is not an easy process, the resulting benefits can be substantial” (Bitner *et al.*, 2000).

2.2 E-banking in its current development: opportunity or threat?

Even though there are differences in form between the economic crisis from 2007-2008 and the potential crisis created by the COVID-19 pandemic, there may be similar effects of these two periods.

One of the consequences of the economic crisis that started in 2007 was represented by the “job losses” (Zaharia *et al.*, 2016). This phenomenon may occur even now. Automatically, the period of time elapsed from the onset of the new coronavirus led to a 'physical distancing' between people. The effects of this situation manifested itself within a great number of companies, either through the decline of the number of employees or through the implementation of a blended system of work. Because the e-banking services surmise a more heightened usage of digital resources and more reduced employment of staff, the context of the pandemic seems to be a favourable one to intensify the use of these services. In this manner, this implementation might transform itself from an opportunity into a threat for some interested parties.

At the same time, the pace for implementing some systems, which would uphold the usage of some such services, must not be reduced. Savings at the budgets of the banking institutions may even be made because “online banking based on the Internet and mobile devices enables a bank to handle customer transactions at a fraction of the operational costs anticipated from the offline counterpart” (Hong, 2019).

Through the analysis of the two dimensions, the banking systems may be on the winning side. The human resource should not be excluded in totality from this entire process. Because the costs will be lower, whereas some consumers do not possess the necessary abilities for using such systems, banks may develop instruction programs for them. Subsequently, employees may be involved in this process, by offering support to consumers who prove some limits in the use of technology.

3. RESEARCH METHODOLOGY

3.1 Research context

Due to the breakout of the pandemic, it is expected that in 2020 the growth of the usage rate of the Internet for Internet banking services, in Romania, to become more intense. This fact may be triggered also by the banking units, which encouraged the usage of e-banking services at the onset of the state of emergency. In this manner, it has been tried as much as possible to avoid the risk of propagating infections amidst the population (CPBR, 2020).

3.2 Research instrument and employed software

The research instrument was represented by a questionnaire. This one has been distributed online, to citizens from Romania, during the first half of October

2020. It comprised questions referring to the demographic data of the respondents, questions with a general character about the e-banking services, as well as questions regarding the behavioural intentions of the consumers. Moreover, questions comprised items with a simple answer, items with a short answer, items in which Likert's scale has been used or items in which the five-point semantic differential has been used. The collected data have been analysed with the aid of the SPSS software. Also, the provisions of the General Data Protection Regulation were applied.

3.3 Research objectives and research hypotheses

a) The question which triggered this research started is the following: How much has the attitude of Romanian consumers changed in which regards the usage of e-banking services, in the present time, by way of comparison with the beforehand period of the COVID-19 pandemic?

b) Taking this question as a starting point, the following objectives have been established:

O₁: Identifying behavioural intentions of Romanian consumers regarding the e-banking services.

O₂: Identifying advantages, which the e-banking services comprise from the viewpoint of the Romanian consumers.

O₃: Identifying disadvantages, which the e-banking services comprise from the viewpoint of the Romanian consumers.

c) Last but not least, several hypotheses have been formulated, taking into account the context of the COVID-19 pandemic:

H₁. There is a positive correlation between the satisfaction level of consumers of e-banking services and their intentions to use in the future these services.

H₂. There is a positive correlation between the satisfaction level of the consumers of e-banking services and their intentions to recommend the usage of these services.

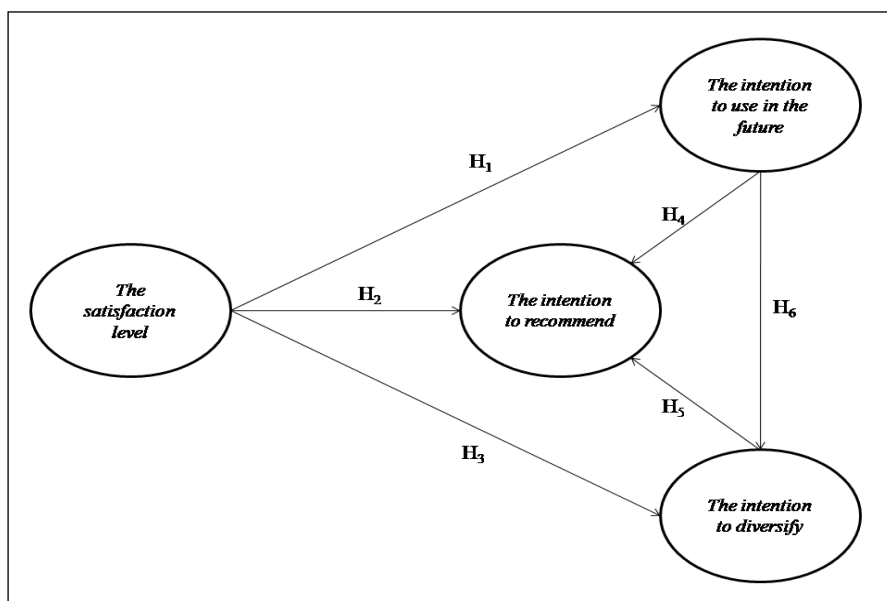
H₃. There is a positive correlation between the satisfaction level of the consumers of e-banking services and their intentions to diversify the transactions for which they will use these services.

H₄. There is a positive correlation between the consumers' intentions to use the e-banking services in the future and their intentions to recommend these services.

H₅. There is a positive correlation between the consumers' intentions to diversify the transactions for which they will use the e-banking services and their intentions to recommend these services.

H₆. There is a positive correlation between the consumers' intentions to use the e-banking services in the future and their intentions to diversify the transactions for which they will use these services.

Based on the formulated hypotheses, a conceptual model was also created, presented below (Figure 2).



Source: author's processing

Figure 2. Conceptual model

By accepting some hypotheses, it can be confirmed that a “higher satisfaction level motivates consumers to adopt repetitive buying behaviour and recommending others to do the same” (Ali, 2011).

3.4 Sample structure

522 questionnaires were collected.

Out of the total of respondents, 54.8% are individuals of the female gender, whereas 45.2% are individuals of the male gender.

Regarding the age category, the majority of people who answered to the questions comprised in the questionnaire were those of the age between 25-34 years (35.2%) and those of the age between 35-44 years (32.6%). The least representative categories comprised respondents with the age between 55-64 years (3.4%) and respondents with the age equal or higher than 65 years (0.4%).

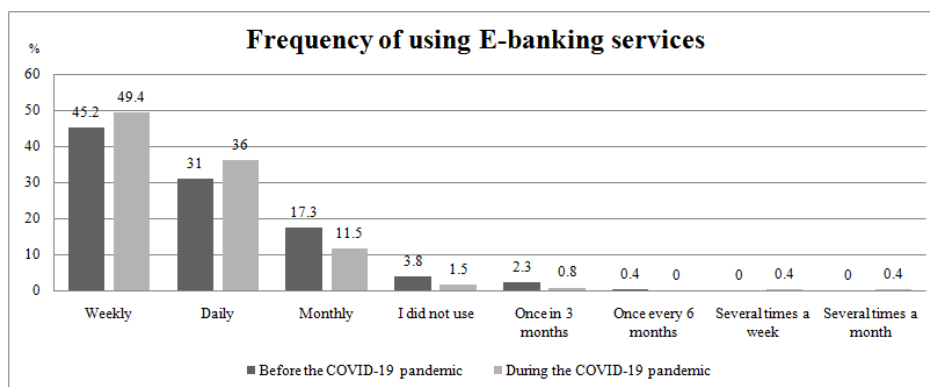
85.4% of the individuals questioned come from the urban area, whereas the rest of 14.6% come from the rural area.

Last but not least, if reference is made to the level of studies, which the respondents have, individuals with university studies (47.5%) and post-university studies (41.4%) are at the forefront.

4. RESULTS AND DISCUSSION

4.1 General data

After all the responses were centralised, it may be noticed a positive trend in the use of e-banking services in Romania. In Figure 3, it can be noted the frequency for the usage of e-banking services, before the COVID-19 pandemic declared, as well as during this pandemic.



Source: author's processing

Figure 3. Frequency of using E-banking services, in Romania, before the COVID-19 pandemic declared, as well as during this pandemic

If before the pandemic, Romanian consumers who used the e-banking services weekly, constituted a 45.2% percentage, whereas those who used these services daily constituted a 31% percentage, nowadays things have changed. More than 49% of respondents use e-banking services weekly, whereas 36% of them use these services daily. If this trend is maintained, most certainly, the rate at the national level concerning the use of the aforementioned services will be higher than the one registered in the last years.

Taking into consideration these differences registered between the two periods, respondents have had the possibility to expound a series of advantages (Table 1) and disadvantages (Table 2) in the use of e-banking services.

Table 1. The main advantages and disadvantages of e-banking services

| Advantages | comfort | swiftness | availability | Total |
|-------------------|-------------|-------------|--------------|-------------------|
| % | <i>57.9</i> | <i>29.1</i> | <i>13</i> | <i>100</i> |

Source: author's processing

Table 2. The main disadvantages of e-banking services

| Disadvantages | % |
|------------------------------------------------------------|-------------------|
| a lack of consumers digital skills | <i>52.5</i> |
| applied commissions | <i>21.1</i> |
| the safety of financial transactions | <i>17.2</i> |
| without disadvantages | <i>4.2</i> |
| technical problems | <i>3.4</i> |
| the time of processing for transactions during the weekend | <i>0.8</i> |
| insufficient services | <i>0.4</i> |
| incompatibility of the device used | <i>0.4</i> |
| Total | <i>100</i> |

Source: author's processing

Following the data presented above, the representatives of the banking units will have to take into account the opinions of the consumers, by enhancing the packages of services offered, where it is the case. Thus, the Romanian bank system can benefit from sustainability for the positive trend shown in Figure 3. Otherwise, this trend can be a positive one, for a short time, based only on the effects of the COVID-19 pandemic.

Taking into consideration that the greatest disadvantage is represented by the lack of consumer digital skills (52.5%), this could constitute a threat to the banking sector. Because it is a factor, which does not depend in its entirety on the banking unit, the representatives of the institutions will have to adopt strategies, together with the competent organisms, to improve this situation.

The device used by the e-banking customers most often, when making transactions, is represented by the smartphone (75.7%). The high percentage may be related to the fact that "a smartphone makes it easy for a consumer to perform online banking while on the go" (Hong, 2019). Thus, two of the main advantages of these services are highlighted, as mentioned in Table 1: comfort and availability. Other devices used are: laptop (11.6%), personal computer (11.2%) and tablet (1.5%).

The purposes for which the e-banking services have been used by the respondents, up to the present time, are the following: to make payments (63.5%), to make intra-banking and inter-banking transfers (29.5%), to check the available balance (5.8%) and to create deposits (1.2%).

To find out the satisfaction level of consumers with e-banking services, "a five-point semantic differential scale" (from 1 - very unsatisfactory to 5 - very

satisfactory) has been used. The average score was 4.50. Taking into consideration this value, the e-banking services are more than satisfactory for their consumers. Employees from the management of institutions should grant special attention to this variable. Due to the augmented dynamics of the banking sector, the satisfaction of its customers is an important dimension in this area (Moraru and Duhnea, 2018).

The score, which was stated, previously may also be explained because only 34.2% of the respondents encountered some problems when they used these services. The most frequently encountered was a technical problem (75%). Other problems encountered were: the lack of an enhanced portfolio of available services (9.1%), the time span for processing transactions in certain periods of the week (8%), the application of some additional commissions (4.5%), the suspicion of some cybernetic attacks (2.3%), the incompatibility of the used device (1.1%). All of these problems find their equivalent also in Table 2, in which the disadvantages of the e-banking services were expounded.

Through the responses related to the encountered problems, the quality of the e-banking services, which the respondents have used, may be reflected. The researchers consider that the quality of the services is “a primary competitive weapon”. In this regard, banking units should identify and remedy the encountered problems, even though these are not in a great proportion (Kumar *et al.*, 2010; Ahmad *et al.*, 2019). Thus, the customer portfolio will not be affected.

As it could be noticed in Table 2, the lack of consumers’ digital skills represents a disadvantage of these types of services. In this respect, the question has been asked whether the implementation of some instruction programs, at the national level, could lead to a growth of the rate of usage. A 5-point Likert scale has been used (from 1 - total disagreement to 5 - total agreement). With an average score of 4.54 and taking into account the characteristics of the banking domain of activity, the expression “knowledge is power” (Vătămănescu *et al.*, 2015) proves to be adequate in this context as well. Because the respondents almost entirely agree with this idea, once the level of competences of the consumers evolves, at the same time the rate of usage of these services may be on an ascending trend.

4.2 Specific data

To analyse the behavioural intentions of Romanian consumers, with a view to the e-banking services, a 5-point Likert scale has been used (from 1-total disagreement to 5-total agreement). The analysed behavioural intentions were: (1) the intention to use in the future, (2) the intention to recommend, and (3) the intention to diversify the transactions for which are used these services.

In Table 3 may be observed the following results:

Table 3. The behavioural intentions of the Romanian consumers with a view to the e-banking services - A data analysis

| The behavioural intention | Mean | Mode | Std. Deviation | Min. | Max. |
|---------------------------|------|------|----------------|------|------|
| I will use | 4.52 | 5 | .986 | 1 | 5 |
| I will recommend | 4.34 | 5 | 1.056 | 1 | 5 |
| I will diversify | 4.08 | 5 | 1.181 | 1 | 5 |

Source: author's processing; software-generated data

A change of attitude in the ranks of the Romanian e-banking services consumers may be anticipated. The values in Table 3 suggest a positive reaction from the consumers' part, after the effects produced by the COVID-19 pandemic, concerning the use, recommendation and diversification of e-banking services.

4.3 Testing the research hypotheses

In Table 4, may be observed the results of the testing of research hypotheses:

Table 4. The testing of research hypotheses

| Hypotheses | Used test | Results | Observations |
|----------------|----------------------------|-----------------------------------------------------------------|---------------------------|
| H ₁ | Spearman's rho Correlation | $r_s(516) = .181, p = .000$ The hypothesis is being accepted | A very weak correlation |
| H ₂ | Spearman's rho Correlation | $r_s(516) = .173, p = .000$ The hypothesis is being accepted | A very weak correlation |
| H ₃ | Spearman's rho Correlation | $r_s(516) = .251, p = .000$ The hypothesis is being accepted | A weak correlation |
| H ₄ | Spearman's rho Correlation | $r_s(522) = .820, p = .000$ The hypothesis is being accepted | A very strong correlation |
| H ₅ | Spearman's rho Correlation | $r_s(516) = .689, p = .000$ The hypothesis is being accepted | A strong correlation |
| H ₆ | Spearman's rho Correlation | $r_s(516) = .650, p = .000$ The hypothesis is being accepted | A strong correlation |

Source: author's processing; software-generated data

By these results, it can be remarked that all hypotheses were accepted.

Even though the correlations are not so strong, due to a high satisfaction level, consumers may be disposed to use in the future, to recommend or even to diversify the usage of e-banking services.

The strongest correlation was obtained between the consumers' intentions to use the e-banking services in the future and their intentions to recommend these services.

5. LIMITATIONS AND FURTHER RESEARCH

A limit of this research may be represented by the number of collected questionnaires (and, also, the profile of respondents). This fact may be explained also by the short time span in which their distribution was applied. Nevertheless, this research may be a starting point, which intends to be developed in due course.

At the same time, with a view to future research, using a scale for measuring the e-banking services reputation can be taken into consideration. In this manner, the dimensions which the consumers appreciate the most at these services may be analysed. Future results may expound a series of factors which may lead to an exponential growth of the degree of usage.

6. CONCLUSIONS

Taking into consideration the context created by the COVID-19 pandemic and the results of the effectuated research, it is possible to surmise a growth of the e-banking services intake, in Romania, in the following period.

This heightened pace could display some negative effects, both in the ranks of the company staff, as well as in the ranks of the consumers. Regarding the employees of the banking units, the main threat will be connected to a decrease in the number of jobs. About the consumers, the main threat will appear from the lack of a high level of financial and digital education. This fact will put some users in difficulty when will be faced with the need to use the e-banking services.

Also, the banking units will have to solidify the consumers' trust in using such services, through the implementation of some systems with a high level of safety. This fact "is essential to ensure its credibility on the ability to conduct e-banking services and to protect the confidentiality and integrity of information" (Vrîncianu and Popa, 2010). By such a measure, the banking units reputation will be improved too.

This evolution of the usage rate of e-banking services may have effects at a global level. If will remain an ascending trend, there might be favourable premises for the introduction into circulation, exclusively, of the electronic coin, instead of the physical coin (Ghita-Mitrescu and Duhnea, 2016).

If we are to bring into discussion the objectives of the present research, one may mention the following:

a) The consumers are willing to use in the future e-banking services. Moreover, the consumers will intend to recommend their usage and even to diversify the transactions for which they use these services.

b) The greatest advantage that the e-banking services bring is comfort, in the general opinion of the respondents. This may be explained also by the fact that

they are no longer obliged to go to the banking unit, physical, to make certain transactions.

c) The lack of digital competences, in the ranks of the consumers, represents one of the greatest disadvantages of e-banking services. Their participation, in instruction programs, could represent an opportunity to ameliorate the negative effects of this threat.

In conclusion, the change in the attitude of the users, in connection with the e-banking services, is a positive one. If before the COVID-19 pandemic, 3.8% of the respondents did not use these services, nowadays their percentage is 1.5%. Being supported by this unfavourable context, of imposing a physical distancing between individuals, 2020 may represent a year with a new beginning for the e-banking market in Romania.

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FINANCIAL AND NON-FINANCIAL REPORTING - HARMONIZATION, EVOLUTION AND TRENDS

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ABSTRACT

The reporting of economic entities has experienced a continuous evolution over time, under the impact of various factors of an economic, social or cultural nature but also under the impact of changing the information that users want in order to make decisions. In this paper there is a review of a current trend in terms of reporting of economic entities, respectively non-financial reporting. Thus, it is in a continuous process of harmonization and evolution, being considered an element that can provide a higher degree of confidence in the information published by economic entities to its stakeholders. At the international level, there are a number of standards with greater notoriety, which show dissimilarities, noting a collective effort to eliminate them to create a single reporting framework that ensures comparability between non-financial reports prepared by economic entities, which carry out their activity in different socio-economic environments, depending of geographical location. If initially the non-financial reporting is limited to the preparation of sustainability reports, now there is a trend towards integrated reporting which involves the communication of financial and non-financial data so that they complement each other.

Keywords: non-financial reporting; integrated reporting; non-financial reporting standards IIRC.

JEL Classification: M40, M41

1. INTRODUCTION

Capital market investors are always interested in having coherent, relevant and intelligent information at their disposal that gives them a complete picture of what is the position and financial performance of an organization, which allows investment decisions to be made in full knowledge. The main support for these decisions are the financial information, presented in the annual reports published by listed economic entities, which, in theory, are characterized by a high degree of homogeneity, due to the fact that at the international level there are standards

that regulates the financial reporting to one geographical territory to another, thus allowing the comparison of financial information, in time and space, providing a solid support for decision-making for investors. However, with the onset of the 2007-2008 financial crises, it has been shown that this information is not characterized by a high degree of credibility, due to the fact that it can be manipulated in such a way as to reflect a different picture from reality.

It can be said that there is a need to present information that gives credibility to the reporting of economic entities, without misleading investors. In order to achieve this goal, emphasis was placed on the non-financial reporting of organizations, which was intended to provide a complete, real and unmanipulated picture of the activity of an economic entity. The problem with non-financial reporting is that there is not yet a unique reporting framework for this type of information.

This raises the issue of harmonizing accounting practices in order to increase the credibility of published information. Harmonization of accounting practices refers to increasing the comparability of accounting information by reducing the variation of accounting practices (Nobes, 1991). At the international level, accounting harmonization has been and is a primary objective of various standardization organizations exist at the international level, including the International Accounting Standards Board (IASB), the Financial Accounting Standards Board (FASB). The existing standardization entities at the level of each country can also be mentioned in this context. The need for harmonized reporting frameworks starts from the fact that the existence of a heterogeneous reporting framework, from one socio-economic space to another, leads to obstacles to capital mobility, due to the fact that the information presented is hardly intelligible to a potential investor and to the fact that there are additional costs for translating that information. The existence of different reporting frameworks hinders economic growth and reduces investment due to the low credibility of the information presented to a potential investor. In other words, different reporting standards lead to economic barriers, with companies being discouraged from investing in a country where reporting standards are different from international standards (Agami and Cascini, 1995).

As can be seen from the above, the existence of different reporting frameworks for financial information is an economic barrier to the investment cycle. This raises the issue that the existence of different non-financial reporting standards can lead to similar economic barriers, which lead to obstruction of social and environmental performance. A high level of social and environmental performance can lead to attracting socially responsible investors and increasing a company's market perception. In order for investors to make informed decisions, there is a need to standardize non-financial reporting, in order to produce non-financial reports that can be compared from one geographical territory to another, within the same business sector or between different business sectors.

The harmonization of organizations reporting has been the subject of numerous studies, which have highlighted its positive effects. It has been observed that standardization of reporting has a positive impact on the transparency and comparability of accounting information, as well as on cross-border business (Zarb, 2006) and increases the efficiency of capital markets by increasing the quality of published information (Islam, 2006).

When we talk about increasing the efficiency of capital markets, we are referring to increasing the degree of comparability and reliability of the information presented. This aspect is particularly important for companies that depend on foreign investment, requiring information that benefits from a certain structure and form so that those foreign investors are willing to invest, by presenting information that are familiar and easy understandable (Elnathan and Krilich, 1992). In the current context of globalization, increasing capital mobility, labor mobility, increasing level of technology and intellectual capital, the need for harmonization of reporting methods is exacerbated.

As mentioned earlier, non-financial reporting is a tool that is meant to provide more information for different categories of stakeholders. Depending on the stakeholders involved, this additional information related to non-financial reporting may refer to working conditions, environmental, social or cultural issues, corruption, human rights and (Tschopp, 2009).

The non-financial reports prepared by companies are prepared to meet certain additional information needs of different categories of stakeholders. They can be used by analysts to rank different investment projects, by government organizations to meet various objectives related to sustainable development, by organizations to create various competitive advantages, and so on.

This paper will consider issues related to the evolution of financial and non-financial reporting standards and an analysis of the main standards for non-financial reporting, as well as a review of the concept of integrated reporting.

2. EVOLUTION OF FINANCIAL REPORTING

The problem that arises when it comes to discussing the harmonization of accounting practices is that if it is possible to apply homogeneous rules and methods from one territory to another, taking into account the social, economic and political context. It is thus discussed whether it is possible to apply rigid, similar rules to ensure the comparability of financial statements published in different geographical areas, taking into account that each of them highlights unique cultural, economic, political or social factors that may constitutes an important impediment to the harmonization of accounting practices. In other words, the information required by stakeholders who are “any other or group of people who have influence or are influenced by achieving the goals of an organization” (Freeman, 1984), are different depending on where it is located.

Opponents of harmonizing traditional financial reporting practices, as in the case of harmonizing non-financial reporting practices, argue that it is impossible to adopt a set of rules and regulations that meet the information requirements of all stakeholders, who have different requirements in depending on the environment in which they are located. In order to make a relevant analysis of the harmonization of non-financial reporting practices, it is necessary to review how the standards of traditional financial reporting have evolved, which have harmonized motivations and which are the obstacles that arise towards full international harmonization.

The evolution of financial reporting can be attributed to the continuous evolution of the information required by stakeholders, with the increase of industrialization, with the increase of exchange operations or with the emergence of globalization. In its early stages, the financial reporting did not provide relevant information for users, the reports issued being prepared according to heterogeneous own rules, thus making it impossible to make comparisons based on them. The changes at the economic level, which led to the intensification of economic activities, led to the emergence of an increasing number of stakeholders who wanted information to help them make decisions with a low degree of risk. In order to meet these requirements, the financial reporting has undergone a process of standardization of practices, and a number of standards have been developed to help increase the relevance and timeliness of published information, and comparisons can be made between published reports. Until then, the quality of published information was at a very low level (Jones, 1935).

As with financial reporting, non-financial reporting goes through an evolutionary process similar to that of traditional financial reporting, and it can be noted that in the early stages, both published irrelevant information in stakeholder decision-making. At the same time, it can also highlight the reluctance of companies to publish information that does not put them in the best public perception.

Another issue that has been intensely debated is the reporting of organizations voluntarily, and again similarities can be observed between financial and non-financial reporting. More than a century ago, financial reporting became increasingly important in the context of accelerated economic development in the United States, and there was a need for a set of rules from the legislature to regulate the reporting of companies. Initially, attempts were made to standardize accounting reporting voluntarily, by threatening companies that certain mandatory regulations would be introduced (Previts and Bricker, 1994). As these threats had no effect on companies, Securities Acts were adopted in 1933, which required the publication of a larger volume of information and the audit of public interest companies.

These measures were a first step in making a financial report that provides the most relevant information for users. Subsequently, reporting standards have

been developed so that the published information meets the needs of users as well as possible. In 1973, the FASB (Financial Accounting Standards Board) was formed in the USA and the IASB (International Accounting Standards Board), globally, in 2001. The standards issued by them, IFRS (International Financial Reporting Standards) by the IASB and the US GAAP (Generally Accepted Accounting Principles) by the FASB are the most important standards of accounting regulation, and it can be highlighted that they differ considerably in terms of applicable accounting rules. It could be noted that there is a continuous international effort to reduce these disparities and to standardize global reporting.

The evolutionary process of non-financial reporting is similar to that of financial reporting, described above. As in the case of non-financial reporting, the main motivation for standardizing and homogenizing financial reporting was to meet the information required by users, which are constantly evolving. An approach to management, operational or governance processes that takes into account the information needed of stakeholders highlight an entity's efforts towards non-financial reporting (Tschopp and Nastanski, 2014).

As mentioned before, there are a lot of stakeholders, each needing a type of information, most of the time being different from one stakeholder to another. The wide variety of stakeholders to whom published information is addressed can be an additional motivation for non-financial reporting for an organization.

3. EVOLUTION OF NON-FINANCIAL REPORTING

The change in the information needs of users has led to a change in the way economic entities report on the position and performance obtained, including in the annual reports a number of non-financial elements.

It is noteworthy that large corporations reported non-financial, environmental and social information, respectively, when there was no regulation that required them to do so, along with annual financial reports (Marlin and Marlin, 2003). However, with growing concerns for environmental protection, social and cultural development, there has been an increase in the demand for information on the impact of an organization on social and environmental issues in the 1960s.

In the early 1970s, organizations were already beginning to set environmental and social goals to report on, this being the period in which the term CSR (Corporate Social Responsibility) appeared. At the same time, there is a collective effort to protect environmental resources and to carry out activities without compromising it. The reports published by the organizations were not useful to the users, due to the fact that there were no standards to regulate the preparation of these reports, as they were not comparable, relevant or timely for the users. During this period it can be said that these reports were seen more as marketing tools. In the 1980s, there was an increase in concerns for the protection of the environment, as a result of the negative effects it had on human activities. This can be considered the first phase of non-financial reporting.

The late 1980s and early 1990s marked the second phase of non-financial reporting. During this period there is a continuation of efforts for environmental protection and social development, which are mentioned in the annual reports, to please shareholders and to control public opinion (Patton, 1992). The information contained in the reports from this period was much more structured, being a much higher degree of relevance for users (Marlin and Marlin, 2003).

The third phase of the development of non-financial reporting presents an approach that addresses the information needs of all stakeholders (Marlin and Marlin, 2003). This phase focuses on the needs of investors and various activists for environmental protection or social development, which are based on non-financial reports published by organizations, which have a higher degree of credibility and standardization due to the emergence of regulatory rules. The main objective in this phase of non-financial reporting is to provide the necessary information to users who want to make certain business decisions. If in the early stages, non-financial reports had a more informative purpose, at this stage, they acquire an important role in highlighting the social, economic and environmental performance of the entity, or in other words, in highlighting efforts for sustainable development.

4. NON - FINANCIAL REPORTING REGULATORY STANDARDS

As in the case of financial reporting, the need to harmonize the most important regulatory standards has been noted, the implementation of the same process can also be discussed in terms of non-financial reporting. Globally, there are several standards governing the non-financial reporting of organizations. These include GRI (Global Reporting Initiative), AA1000 (Account Ability 1000) and United Nations Global Impact and ISO 26000.

GRI (Global Reporting Initiative), is the most used standard by companies when the structure of non-financial reporting is established. According to the GRI framework, the sustainable development report must address the impact of an entity's operational activities on the environment and society as a whole, and the resulting information must be simple, concise and comparable. The sustainability report should focus on those topics that are most relevant to the main activities of the organization and the main users of the information provided. It stipulates that non-financial reporting should cover information that reflects the company's significant social, economic or environmental impact or information that influences stakeholder decisions and assessments.

GRI standards were developed in 1997 in Boston, USA by CERES (Coalition for Environmentally Responsible Economies). The latter was an organization whose main purpose was to encourage organizations to adopt practices that would help protect the environment. In 1999, a first draft of these standards was issued, which were subsequently revised in 2000, 2002, 2006 and 2016.

These standards address the needs of stakeholders, providing guidance on how to prepare and the content of non-financial reports. They include reporting principles, directions to be followed in the reporting process, being divided into 5 sections:

1. Strategy and analysis;
2. Organizational profile;
3. Reporting parameters;
4. Corporate Governance;
5. Management Approach and Performance Indicators

Their area of applicability is very large, there are directions to follow for both large and small companies. At the same time, certain specific indications are to be followed for each sector of activity, thus illustrating the specificity of non-financial reporting for each economic sector. It can also be mentioned that the standards in question are translated into more than 15 spoken languages, which illustrates the possibility of applying them in various geographical areas more easily.

At the international level, there have been constant efforts by the United Nations and the AccountAbility regulator to issue rules and practices to ensure the comparability of reporting by economic entities (Buck, 2012).

A second entity that aims to regulate non-financial reporting is AccountAbility (AA). The year of its founding is 1996, originally called the Institute for Social and Ethical Accountability, in London, with the aim of developing new tools, ways of thinking and connections that allow individuals, institutions and various associations to better respond to the challenges of globally.

In 1999, an integrated reporting framework AccountAbility 1000 (AA1000) was launched to promote efforts for sustainable development by ensuring increased quality in non-financial reporting. In addition to the general framework comprising the reporting principles, a Stakeholder Involvement Standard and a Stakeholder Insurance Standard can also be highlighted. In 2008, a number of principles were introduced to help develop non-financial reporting practices.

A very important aspect of these AA1000 standards is that they are geared to the specific needs of stakeholders. Based on them, various strategies or actions can be issued by organizations through which to discover the main information requirements of users and to ensure their fulfilment in the most complete way possible.

The third entity that regulates non-financial reporting is the UN Global Compact. This standard was launched in 2000, comprising a set of 10 principles to help organizations that were socially responsible and wanted to report on their actions. The principles considered refer to working conditions, respect for human rights, protection of the environment and reduction / elimination of corruption. In essence, these standards are a sufficiently comprehensive set of principles to cover

the informational needs of all stakeholders globally. These principles help to establish a common framework for action on the application of internationally established rules (UN Global Compact, 2013). Organizations that adopt these standards communicate non-financial information to stakeholders to their stakeholders through the so-called COP (Communication on Progress) report. This report does not have a standardized form but must contain:

1. Statement from management showing support for Global Impact;
2. Description of the concrete actions that seek to apply the principles related to this standard;
3. Evaluation of current or expected results.

A fourth entity with responsibilities in standardizing non-financial reporting is ISO 26000. It is a standard that provides a number of directions to follow for the social responsibility of organizations. Its launch took place in November 2010 and the main objective proposed is to promote sustainable development through the application by entities of social responsibility measures, leading to positive effects on working conditions, the environment or society.

The main purpose of this standard is the inoculation in the organizational culture of social responsibility practices, having an external component that deals with the reporting and communication of non-financial results to stakeholders. Unlike the other standards mentioned, ISO 26000 seeks not only harmonization in terms of non-financial reporting but also the application of social responsibility practices at the level of an economic entity. At the same time, the aim is to achieve harmonization in terms of non-financial reporting, considering that the publication of comparable information will increase the transparency of communication, according to ISO 26000 (2006).

At the international level, there are a number of issues for all four standards described above that make them accepted or rejected as a single reporting standard. The GRI standard is considered to be too rigid, being based on too many rules, UN Global Compact and AA1000 are considered too interpretive. At the level of organizations, there is an effort to eliminate all these shortcomings, by involving stakeholders to determine which information is most relevant to them.

5. INTEGRATED REPORTING - CONCEPT AND DEFINITIONS

If in its early forms non-financial reporting came into the form of sustainability reports attached to the financial statements or presented separately, now the trend is to present this information in an integrated manner so that the financial and non-financial information presented complements each other.

Financial information alone cannot provide all the information needed for decision-makers, as many international organizations are already working to create a legislative framework for integrated reporting, to ensure the best possible connection between financial and non-financial information.

The overall framework for integrated reporting accepted globally, developed and implemented at the International Council for Integrated Reporting, completed in 2013, provides an innovative impetus for corporate reporting.

The Board, formed in 2011, consists of several representatives of corporate leaders, decision makers, financial markets, academia, standardization bodies, and professional accountants. The purpose of this board is to outline what integrated reporting means, as well as to explain the main foundations on which it is based. It defines integrated reporting as a summary communication on how an organization's strategy, governance, results and prospects, in the context of an external environment, lead to value creation in the short, medium and long term.

The General Framework for Financial Reporting is based on the concept that the value that a company creates depends on how the company uses its capital, as well as how it interacts with the environment. Company's activities and results lead to an increase, decrease or transformation of capital. Value is created for the entity when value is created for investors.

The benefits of integrated reporting are summarized as follows: financial information is critical, but not sufficient, and integrated reporting proposes a shift in focus to the true forces that drive business growth. Another benefit is that, in addition to the concept of integration, it becomes possible to explain more easily what the financial market calls the "value of intangibles". Integrated reporting is a follower of the "less is more" concept, which means that the company must have a complete and holistic vision of its business activity, but also be able to present it as succinctly and concisely as possible, to be easy to read and understand.

An integrated report explains how the organization creates value over time, but not the entity itself creates value, it is influenced by the external environment, because the company's relationship with stakeholders depends on many resources. Thus, an integrated report seeks to provide details on:

- the external environment that affects the organization;
- the resources and relationships of the entity, which are also known as capital, and which are classified into financial, intellectual, human, natural capital, etc.
- how the organization interacts with the external environment and capital to create value in the short, medium and long term.

Integrated reporting is an opportunity to present to investors and other stakeholders, the long-term perspectives of the organization, as well as its motivation and vision on the organization's strategies, thus contributing to decision-making on resource allocation, in order to create long-term value, especially with limited and non-renewable resources.

A survey conducted by ACCA (Association of Chartered Certified Accountants), which aimed to uncover changes in investment after the economic downturn, researching what investors expected from corporate reporting and how companies respond through their directors to the ever-changing information needs

of investors. The study found that investors want the highest possible degree of transparency in accounting information, and an integrated reporting system, which should include both financial and non-financial information, ensures this. Even in these conditions, companies are still reluctant to adopt integrated reporting, although over 93% of those surveyed said they want to apply this reporting system. From an investor's point of view, annual or quarterly financial reports are no longer sufficient to meet their information needs about an organization.

What investors want to know is how the entity will generate sustainable value in the environment in which it operates:

- What is the chosen business model?
- What are the associated risks and opportunities?
- What is the governance system?

Investors who invest their money in the capital of an entity have limited rights - the right to vote, the right to participate in meetings, the right to receive dividends, if applicable. Given that investments have an uncertain time horizon, it is important for investors to make an accurate assessment and understand the governance system of the entity (Couldridge, 2014).

At the same time, the ACCA survey reveals that while they are in favour of adopting the integrated reporting system, professional accountants are reluctant to pioneer in this area of integrated reporting. However, most of them planned to adopt this model in the near future, while only 10% said they were not at all interested in adopting this model, which brings a set of non-financial information to investors, due to the associated risks: high costs, the risk of providing secret information to the competition and the risk of lower reporting quality due to the acceleration of the financial reporting process.

The study indicates that most respondents are aware that providing complete and transparent information improves the company's relationship with investors. About 40% of those surveyed either plan or have already started adopting the integrated reporting model, a reporting model that takes into account existing information across several departments and tries to provide a complete picture of the company's performance.

Among the benefits of integrated reporting, respondents mentioned:

- The competitive advantage offered by the image of a sustainable company, which offers a transparent and complete reporting of the activity carried out;
- The possibility of a better management of risks and opportunities;
- Possibility to accurately identify the factors that lead to financial performance;
- Improving the relationship with investors.

6. THE USEFULNESS OF INTEGRATED REPORTING

Integrated reporting is the response to the growing information needs of investors, being interested in that information that gives them a deeper picture of

the entity's vision, bringing together financial and non-financial information and combining internal reporting with external reporting, things that lead finally to efficiency, transparency and consistency.

The analysis of an entity only from a financial point of view is no longer enough for investors, which is not only valid in terms of reporting to third parties, but also for governance. Professional accountants and auditors will also play an important role in future reporting systems, which is why they will need to keep up to date with all the latest developments in this area.

By applying this model, the comparability of the information provided will increase, thus ensuring a more efficient comparability of the performance obtained from organizations, helping decision makers and investors to make informed decisions by choosing those options characterized by sustainable performance, creating the premises by creating long-term value.

Integrated reporting is a relatively new topic and it will be some years before it reaches maturity. The legislative framework on this is even newer and will take time to be fully understood, but companies are already using it to create a competitive advantage over the competition.

7. DIFFERENCES BETWEEN INTEGRATED REPORTING AND SUSTAINABILITY REPORTS

Sustainability reports provide information on the work of companies, aspirations and the public image regarding the environment, the community, employees and consumers. Other issues to be addressed will be created between these coordinates, such as business practices, equal opportunities, energy use, opportunities, corporate governance, etc.

In preparing the sustainability reports, certain directions to be followed are highlighted, published by GRI (2012), which allows entities to measure and report their environmental performance, social, economic performance and corporate governance (Gurvitsh and Sidorova 2012).

Internationally, IIRC defines integrated reporting as a process that results in communication to a company, on a regular basis, about how business strategy, governance, performance and opportunities lead to short-, medium- and long-term value creation.

Integrated reporting is not just a multi-annual report, it can be a real tool for governance, for performance-oriented management.

According to a PWC report (PricewaterhouseCoopers LLP, 2013), integrated reporting is a way to meet the new requirements of stakeholders in the capital markets.

Capital market holders are very interested in the information published by a company regarding environmental, social or governance issues, which have a direct impact on the business. Stakeholders also have a growing interest in non-financial factors of an internal or external nature, such as the demographic

structure of staff or the degree of resource constraint, which allow them to get a fairly clear idea of the long-term prospects related to by that company.

Integrated reporting is molded into the current model of financial reporting, so that it incorporates non-financial information to help stakeholders understand how a company creates and sustains long-term value. In the context of globalization, the interdependence between the various supply chains, population growth and consumption, the quality, availability and price of the various necessary resources are affected. Integrated reporting has the potential to help limit the elements mentioned above, through the impact on a company's strategy and business model, which will increase the transparency of information to stakeholders.

At global level, integrated reporting does not present a legal reporting framework, as there are no clear requirements for the publication of information. However, the IIRC issues a set of principles to follow and certain elements to be mentioned in an integrated report.

The principles to be followed are strategic concentration, future orientation, information connectivity, sensitivity and inclusion of stakeholders and the final principle, conciseness, reliability and materiality.

The elements that must contain an integrated report are: (1) The way of organization and the business model, (2) The operational context, including risks and opportunities, (3) Strategic objectives, (4) Governance and remuneration, (5) Performance, and (6) Future perspective .

Integrated reporting is based on two fundamental concepts: value creation and capital. Value creation emphasizes that value is not created only within the organization, but is influenced by the external environment, the organization's relationships with stakeholders and the resources attracted and consumed. Value creation can be understood as the change in the value of capital over time (South African Integrated Reporting Committee, 2014).

The role of the concept of capital is to assist an organization in identifying all the resources and relationships with stakeholders that can be used, for a comprehensive reporting. There are 6 types of capital.

Financial capital (equity or funds raised through bond issuance), working capital (equipment and public infrastructure), intellectual capital (technologies, patents, research, development, procedures, protocols, internal systems of an organization), human capital (experience and employees' skills), the capital represented by the links established with various stakeholders and the natural capital (water, minerals, land, etc.).

According to IIRC, an integrated report ensures concise communication about how a company's strategy, governance, performance and prospects, in the context of the external environment in which it operates, lead to value creation in the short, medium and long term. Although equity holders are the main subjects of integrated reporting, an integrated report should contain information relevant

to all categories of stakeholders interested in an entity's ability to create value over time. The key objective of integrated reporting is to increase the accountability and quality of management of the six types of capital mentioned above and to highlight the interdependencies between them. Through this approach, integrated reporting promotes integrated thinking, decision-making and actions that focus on creating long-term value for stakeholders. It can be seen that integrated reporting and reporting of sustainability reports are very similar, but the former has a much higher degree of coverage, including sustainability reports.

8. THE INTERNATIONAL FRAMEWORK FOR INTEGRATED REPORTING

The benefits of integrated reporting are the lower the errors in analysts' forecasts, the greater the alignment with an integrated reporting framework. There is also a decrease in the cost of equity for some reporting companies (Zhou *et al*, 2017).

Business, investors, capital markets and the economy in general are dependent on the quality and relevance of information provided by companies, to ensure an efficient and effective allocation of resources, to encourage a favorable environment for investment and to facilitate transparency, ethics and sustainability of business practices. Although there have been several attempts to achieve these goals, integrated reporting is the ideal way to achieve them.

One of the bodies that aimed to regulate non-financial reporting is the International Council for Integrated Reporting (IIRC), which is a global coalition of investors, companies, standardizers, standards makers or non-profit organizations (IIRC, 2014). The IIRC has played an important role in raising awareness of the importance of integrated reporting and in developing a comprehensive framework for integrated reporting. The main goal of integrated reporting is to bring to the users' knowledge a complete and transparent picture of the performance of an economic entity, by presenting, together with the financial information, information on human resources, the environment, various social factors, which have an impact on a company's ability to create value in the short, medium or long term.

The growing need for information of users has led companies to prepare sustainability reports, although they were not required at that time by any rules in force (Simnett, 2009). The great criticism of these reports created on their own is that the information presented in these reports did not help to identify the strategy adopted by the entity and was not correlated with the information presented in the annual report, thus being considered unnecessary by users of capital market information.

Integrated reporting aims to increase the conciseness of the information presented, by presenting not only relevant information for investors, but also

elements that highlight the strategy adopted by the entity and how it wants to create value indefinitely.

This type of reporting gained considerable momentum with the creation of the IIRC in 2011, and later in 2013, when the first legislative framework for integrated reporting was launched. It has been found that adopting this model creates internal benefits for companies, by accelerating integrated thinking within an organization, which leads to more efficient decisions of company management. The main beneficiaries of this type of reporting are the liquidity providers on the capital market. As a result, there may be a decrease in the capital costs of listed entities as a result of lower investment risks.

In the first years of application of this model, it was found that companies had a decisive role in terms of published non-financial information, being able to choose what information and how they will publish it, there is no model or rules to adhere to all companies, reason for which the published information was characterized by a high degree of heterogeneity. Thus, the different alignment to the framework established by IIRC led to the decrease of the quality of the published information, not being possible to perform comparative analyzes within the same sector of activity or between sectors of activity. The different alignment with the established framework can be highlighted by the fact that some companies published the CSR report attached to the annual report, while other entities went much further in terms of adherence to the aforementioned framework, presenting in a separate report the strategic intentions, the business model, the risks and opportunities of the company and how they all interact in order to create value for a company. Although many such reports were called "Integrated Reports", the degree of alignment with the established directives was different from one company to another.

With the publication of the Integrated Reports, it is noted that the forecasts made by analysts regarding the future performance of the entity are more accurate, as a result of a volume of information published by companies characterized by transparency and relevance. At the same time, it can be pointed out that capital investors are willing to accept lower rates of return for capital invested in companies with integrated reports, made in accordance with IIRC directives, because on the basis of this information can be made predictions that reduce the risk investment (Zhou *et al*, 2017).

Integrated reports stand out as a tool of great importance for capital market participants. The publication of these reports in accordance with IIRC standards leads to more accurate forecasts by analysts, thus reducing the risk assumed by investors, who are willing to accept a lower remuneration due to the fact that their investment is subject to lower risk.

9. CONCLUSIONS

The reporting of economic entities is in a process of evolution as a result of the new information needs of stakeholders who want to make informed decisions. For a long time, financial information has been the main source of information for users to make decisions. However, it turned out that this information often did not present the position and real financial performance of an economic entity, being manipulated to reflect a certain image desired by certain stakeholders, especially in the context of economic crises, which highlighted the degree their low confidence. Thus, the financial information proved to be insufficient to provide a complete picture of the possibility of creating long-term value for an economic entity. In order to correct these shortcomings, it was considered necessary for economic entities to publish non-financial information that reflects certain aspects related to caring for the environment, caring for the development of the society in which it operates, respecting human rights, equal opportunities or other aspects that were not necessarily related to financial performance, thus outlining the concept of non-financial reporting.

Non-financial reporting shows a similar evolution to financial reporting in its infancy. There is a need to standardize practices and procedures for non-financial reporting, so that entities publish information that is comparable between entities operating in different socio-economic environments, thus stimulating capital mobility between different geographical areas and increasing the degree investor confidence in published information. The publication of non-financial information was done by publishing sustainability reports, adjacent to or separate from the financial reporting. At present, there is a trend towards publishing information of a financial and non-financial nature in an integrated manner, thus defending the concept of integrated reporting.

In order to give more credibility and transparency to the accounting information, the publication of non-financial information was started, first voluntarily, and then forced by legislative regulations, through sustainability reports, which became a supplement to the published financial information. The main motivation behind the publication of this non-financial information is that data of a strictly financial nature are not sufficient to properly assess the performance of a company as a whole.

With the publication of these sustainability reports, a number of changes have been noted in the way a company reports its financial position and performance in its annual reports.

In order to meet the growing information needs of users of accounting information, a consensus was reached that companies' reporting should extend its current area to new elements, which would increase the credibility and transparency of the information presented, thus defending the concept of integrated reporting.

Integrated reporting is the presentation of both financial and non-financial information to stakeholders, on a regular basis, in accordance with applicable law. The information presented is more concise, presenting information on risk management, corporate governance or strategies adopted, thus combining traditional reporting with financial information, non-financial information, sustainability or other areas of interest.

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ON THE CONSEQUENCES OF THE ACCOUNTING CONSERVATISM –EVIDENCE FROM THE ROMANIAN COMPANIES LISTED ON THE BUCHAREST STOCK EXCHANGE

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ABSTRACT

Conservatism is one of the basic principles in accounting and financial reporting. Developments in international accounting standardization seem to lead to a decrease of the role of this principle in the development and application of accounting standards. The use, in Romania, of two financial reporting frameworks makes various categories of companies approach prudence in somewhat divergent ways. In the literature, it is sometimes criticized that the use of prudence leads to earnings management, in the sense of the reduction or of the smoothing of the net income. We analyse data provided by Romanian companies listed on the regulated market of the Bucharest Stock Exchange, in the period 2007 - 2019, but also data of companies listed on the alternative market AeRo of the same stock exchange, to calculate the share of expenses reported in the profit and loss account and related to the recognition of depreciations, impairments and provisions. The results show that companies on the regulated market have higher shares of prudence expenses in sales and that this situation can be explained by the standards currently applied (IFRS), but also by the fact that large companies are more exposed to external control, from the part of more exigent investors or auditors. The increase in leverage is associated with a decrease in the share of prudence expenses, as is the use of local auditors; moreover, the modified opinions are associated with significantly higher shares of prudential charges in sales.

Keywords: conservatism (prudence); depreciations; provisions, impairments, Romanian companies listed on BSE.

JEL Classification: M40

1. INTRODUCTION

The role of the prudence (conservatism) in accounting is a very well known in the accounting doctrine since the 19th century. Basu (1997) cites papers that

documented the fact that since the beginning of the XV-th century, the accounting of merchants in medieval Europe was prudent. Prudence is one of the accounting principles that have endured over time (Braun, 2019), proving that its application is preferable to this non-application. The various aspects of prudence and its consequences have influenced the accounting figures reported by companies, but have also been an extremely present topic in the discussions of academics or standard-setters in accounting and financial reporting. The literature on accounting prudence is enormous; however, there are always newer or older aspects that can be emphasized.

The national accounting standards applicable in Romania (OMPF 1802/2014) are built on the basis of the Directive 2013/34/EU. The latter makes an explicit reference to the principle of prudence, according to which: “only the profits made at the balance sheet date can be recognized; all liabilities arising in the course of the financial year concerned or in the course of the previous financial year shall be recognized, even if such liabilities become apparent only between the balance sheet date and the date of which the balance sheet is drawn up and all negative value adjustments are recognized, whether the result of the financial year is a profit or a loss”. Under these rules, Directive 34/2013 also allows Member States to introduce in their national regulations the obligation to recognize foreseeable liabilities and potential losses arising in the course of the financial year concerned or in the previous years, even if they are post-closure events. In addition, the same directive explicitly recognizes the principle of historical cost. It should be noted that Directive 34 was published in 2013, three years after the significant change in the Conceptual Framework for the Preparation and Presentation of Financial Statements, issued by the IASB, and which removes prudence from the list of qualitative characteristics of financial statements. We therefore find a major difference - at least from a normative point of view - between international standards and European rules, which have become - the latter - national rules in the Member States. In fact, this difference does not apply to Member States that have generalized the application of IFRS to all categories of companies. Despite the aggressive marketing of the IASB, which boasts of the widespread use of these rules worldwide, in the EU, Regulation 1606/2002 states that the application of IFRS is mandatory for the consolidated financial statements of listed companies, with the possibility for Member States to extend the application and other categories of companies. The European Commission regularly centralises information on this extension and publishes it. The latest such document we could find describes the situation at 31 September 2018 (European Commission, 2018) and allows us to see that a single country has imposed IFRS on all companies, in individual and consolidated financial statements - Cyprus. Other countries have extended the obligation to apply IFRS or have allowed the application of these standards, especially in the individual financial statements of listed companies and in the consolidated financial statements of unlisted

companies. Instead, the obligation to apply IFRS by other categories of companies is valid (except Cyprus) only for some companies in the financial sectors (banks, insurance and other financial intermediaries), for some other companies of public interest (including some big state-owned companies), for very large companies or for companies listed on unregulated markets. It follows from the document cited above that there are still a large number of EU entities to which IFRS does not apply and which must comply with Directive 34/2013, including the prudence principles stated by it.

However, the European groups that are required to prepare consolidated financial statements in IFRS, their subsidiaries, as well as all other firms to which this obligation has been established by the Member States form a population that is more than significant in terms of the sales realized, of the assets they report and of the impact they have on national and regional economies. That is why we will refer, in our study, also to the specific IFRS rules.

From the description proposed by Directive 34/2013, for the principle of prudence, results the well-known asymmetry between the treatments of differences in value found at closing date: the differences reflecting possible gains are not recognized, while the differences reflecting possible losses are always recognized. Basu (1997) captures this situation very well by interpreting prudence as “the tendency of accountants to impose a higher degree of verification for the recognition of good news than for the recognition of bad news” - so the income incorporate the effects of bad news faster than that of good news. However, it is precisely this asymmetry that is why the IASB removed prudence from Conceptual Framework. Point 2.17 of the latest version of the Conceptual Framework explicitly states that “prudence does not imply the need for an asymmetry, for example the obligation to systematically justify the recognition of an asset or income, based on more convincing evidence than in the case of a liability or of a expense. Such an asymmetry is not a qualitative feature of useful financial information. However, a standard may contain provisions in the sense of such an asymmetry, if this is the consequence of decisions aimed at selecting the most relevant information from those that give a true picture of what it should represent” (IFRS Foundation, 2018). The lack of prudence in the list of qualitative characteristics of financial information does not mean that it disappears altogether - some international standards (those relating to stocks, tangible and intangible assets, impairment of assets, for example) set rules that correspond to the classical meaning of prudence – i.e. asymmetric treatment of differences in value. However, the justification for the elimination of prudence is given by the fact that other standards set rules that propose a symmetry in the treatment of differences in value, by immediately recognizing both favourable and unfavourable differences: investment property, biological assets, financial instruments. On the other hand, despite this explicit exclusion of prudence, Barker and McGeachin (2015) believe that there is a conflict between the IASB's position, as found in the

Conceptual Framework, and the prudential obligations introduced by various individual standards. We can also consider that the elimination of prudence is done despite an important part of the accounting literature that includes numerous empirical studies that show that, in the long run, prudence is associated with a lower cost of capital and a better information environment (D'Augusta *et al.*, 2016).

The literature identifies two levels in the application of accounting prudence: ex-ante prudence or unconditional conservatism, and ex-post prudence or conditional conservatism (Beaver and Ryan, 2005; André *et al.*, 2015). The first form of prudence (unconditional conservatism) is not dependent on the events that affect the company's activity, manifesting itself, as a rule, in the accounting choices made by the company at the initial recognition of assets or liabilities: useful life of fixed assets, depreciation methods, criteria for capitalizing some expenses, choosing the evaluation method. On the contrary, conditional conservatism is dependent on events that occur during the company's activity and that generate depreciation, risks, litigation, the accounting effects of which are usually recognized at each closing date.

There are many studies that propose various proxy to measure the degree of conservatism that firms exercise in the accounting choices they make either at the initial recognition of assets/liabilities or at subsequent closures. As far as we are concerned, the data we have allowed us to propose a measure of prudence by dividing depreciation, impairment and provisions expenses by sales reported by listed companies. The mechanism has the advantage of being extremely simple and the disadvantage that it does not use econometric models such as those proposed by the literature.

2. AN EXAMPLE...

There are authors who consider that the prudence principle is used by companies to adjust the reported income, thus representing a justification for the use of earnings management techniques (Feleagă *et al.*, 2010). The recognition of provisions and of impairments, as forms of conditional (or ex-post) conservatism, as well as their reversal have, in most cases, direct effects on expenses and revenues, respectively, which contributes to the decrease/increase of the net income. These expenses/revenues represent an important component of accruals, being found in both normal and discretionary ones (Byzalov and Basu, 2016).

Romanian companies applying RAS (OMFP 1802/2014) prepare and publish financial statements according to the common model imposed by the Ministry of Finance. This model is also useful because it allows the centralization of information at the level of authorities, but also the comparability in space, and even in time, of reported information. Firms that apply IFRS prepare and publish financial statements based on their own options regarding the balance sheet and profit and loss account formats; most of the time, these formats are different from

the official ones. However, these entities must also report the financial statements to the tax authorities and are obliged to use, for this purpose, the model imposed by the Ministry of Finance. In these financial statements we easily find information on provisions (in the balance sheet) or on net expenses related to depreciation, impairment of assets and of provisions (in the income statement).

Without suggesting that the situation we present is an example for a certain earnings management, we can draw attention to a particular evolution of a company's net income. This is OMV Petrom (see Table 1), a big company listed on the regulated market of BSE. The net incomes reported in the individual accounting of this company are quite consistent, in the period 2007-2019, with a maximum of over 5.5 billion lei in 2013. However, in 2015, the company reports a net loss of 0.630 billion lei, so that in 2016 it will return to profit, with 0.907 billion lei. These two financial years are the only ones in which the company declares profits of less than 1 billion lei. Focusing on 2015 - in which the company reports the loss - we notice a much more important expense than in all other years: these are depreciation and impairments related to of property, plant and equipment: 5.7 billion lei, compared to 3.2 billion in the previous year and 2.2 billion in the following year (the amount is also at least 2.5 billion lei higher than in any of the other years 2007-2019). In the official format form of profit and loss account, depreciation and impairments are put together, so we looked at the situation of fixed assets and found that in 2015, out of the 5.7 billion lei, over 2.8 billion represent impairments (2.4 billion for tangible assets and 0.4 billion for intangible assets). Also, in 2015, the expenses with provisions were over 1 billion lei, by far the largest amount in the analysed period. So, it can be said that the loss of 0.63 billion lei reported by OMV Petrom in 2015 is mainly justified by the expenses with the depreciation, impairments and provisions. Of course, if these depreciations/provisions would have been smaller by at least 0.7 billion lei, the company would have reported profit for 2015. In fact, in column 8 of table 1, we calculated a (gross) result in which we restate the net expenses with impairment and provisions and we note that this restates net income for 2015 is a very consistent one (we adapted a reasoning from Cao *et al.* - 2018, in which the net income is recalculated, but only in the case of reversal of impairments and provisions).

On the contrary, in 2016, even if the declared net income is positive (0.91 billion lei), the restated nett income is the lowest in the period 2007-2019 (0.17 billion lei). This situation is explained by the fact that most of the 2016 net income is generated by the reversal of impairments and provisions for this year. Thus, we can comment in the sense that, despite the net income reported by the company for the two years, the performance of 2016 does not seem to be significantly better than in 2015. Also, comes the argument that in the year immediately following the recognition a significant impairment of fixed assets, their will be reduced, which leads to a lower depreciation expense, unless the depreciation period is

reduced. In fact, as Givoly and Hayn (2000) consider, prudence is mainly a matter of timing and reporting revenues and expenses over time, in relation to the cash flows associated with them.

Is it in the behaviour of the analysed company, specific for the earnings management techniques? The auditor (Big 4, throughout all the period) provides clean opinions throughout the 13 years; in addition, none of the reports includes an emphasis of matter paragraph on the application of accounting rules.

Perhaps, in the analysis of the company's financial situation, it would be useful to look at the cash flows: we have provided, in table 1, the operating cash flows, which show us a fairly good situation of net cash flows, not suggesting a serious problem in the 2015-2016 financial years; this seems to confirm the hypothesis demonstrated by Basu (1997) that, unlike cash flows, accounting income reflect bad news faster.

3. LITERATURE REVIEW

Prudence is a major topic in the accounting literature, both on the part of neutral authors and on the part of some partisans or opponents of this old accounting principle. LaFond and Watts (2008) considers that prudence in financial reporting is a response to the information asymmetry in the stock market, an asymmetry manifested between insiders and outside investors. Moreover, Gray (1980) measures the differences between accounting systems using this principle and using a conservatism index, which later became a comparability index. Barker and McGeachin (2015) identify three ways in which standard setters decisions can lead to prudent accounting: they refer to the recognition of the components of the financial statements, to the measurement of these structures and to the presentation in financial statements. Taking into account the manner of identification, measuring the degree of prudence (conditional and / or unconditional) in financial reporting, we find several models such as:

- asymmetry in taking into account the good news vs. bad news and timeliness in recognizing losses (Basu, 1997);
- differences between the evolution of operating cash flows and that of operating income (Givoly and Hayn, 2000);

Table 1. Evolution of some financial indicators for OMV Petrom in 2007-2019 period (millions of lei)

| Year | Sales | Tangible and intangible depreciation and impairment net expenses | Current assets (inventories and receivables) impairment net expenses * | Financial assets impairment net expenses* | Provisions recognized as expenses* | Operating income | Net income | Restated income, after the reintegration of the impairment and provisions expenses | Operating cash flow |
|------|--------|------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------|------------------------------------|------------------|------------|------------------------------------------------------------------------------------|---------------------|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 2019 | 19,794 | 2,972 | 71 | -41 | -94 | 4,017 | 3,561 | 4,098 | 6,920 |
| 2018 | 17,817 | 2,143 | 58 | 595 | -272 | 4,883 | 3,880 | 4,356 | 6,491 |
| 2017 | 14,765 | 3,001 | 49 | 1,141 | -317 | 2,990 | 2,400 | 3,874 | 5,670 |
| 2016 | 12,523 | 2,176 | 158 | 202 | -591 | 890 | 908 | 174 | 4,134 |
| 2015 | 13,688 | 5,683 | 56 | 26 | 1,082 | -595 | -631 | 3,318 | 5,971 |
| 2014 | 16,512 | 3,173 | 14 | -310 | -163 | 3,541 | 1,837 | 2,967 | 5,726 |
| 2013 | 18,072 | 2,320 | -3 | -154 | -535 | 5,332 | 4,839 | 4,885 | 7,579 |
| 2012 | 19,510 | 2,124 | 114 | -72 | -411 | 5,068 | 3,851 | 4,224 | 6,665 |
| 2011 | 16,565 | 2,253 | 28 | 183 | -183 | 5,034 | 3,686 | 4,398 | 5,945 |
| 2010 | 13,953 | 1,987 | -56 | 447 | -485 | 3,202 | 1,799 | 1,690 | 3,854 |
| 2009 | 12,842 | 1,752 | 136 | 137 | -483 | 1,197 | 1,368 | 1,157 | 2,657 |
| 2008 | 16,751 | 2,256 | 143 | 134 | 644 | 1,309 | 1,022 | 3,360 | 4,384 |
| 2007 | 12,284 | 1,146 | -35 | -86 | -42 | 1,965 | 1,778 | 2,147 | 2,485 |

* When the positive, net expense occurs, i.e. more depreciations/impairments/provisions have been made than reversed. When the reported amount is negative, more impairments/provisions were reversed than constituted, with effects in increasing the net income.

Source: data are processed from the annual reports of the OMV Petrom, published on the site of the BVB (2020).

- not recognizing of net some operating assets or some research, development and advertising expenses as assets, as well as assets impairment (Mason, 2004);
- the ratio between the market value and the book value of the company (Beaver and Ryan, 2005; Roychowdhury and Watts, 2007; Ball *et al.*, 2008);
- C score, proposed by Khan and Watts (2009);
- the ratio between provisions and other liabilities presented in the balance sheet (Feleagă *et al.*, 2010);
- the conservatism ratio as ratio of unexpected current earnings to total earnings news (Callen *et al.*, 2010);
- auditor-client economic bond (Crockett and Ali, 2015) - the auditor-client bond is measured by the dollar amount of non-audit service fees, the dollar amount of audit fees and the total audit fees collected by the auditor. These measures capture the total economic relationship between the auditor and the client and best indicate the economic implications for the auditor if they were to lose their audit client);
- discretionary accruals (Zéghal and Lahmar, 2018);
- combinations between several measures (Balakrishnan *et al.*, 2016; D'Augusta *et al.*, 2016, Garcia Lara *et al.*, 2020).

More recent researches consider that the measurement of accounting prudence is better done by splitting the income into components (cash flows and accruals) and analysing the relationship between them and market returns; the justification for this approach is given by the hypothesis that the components of the income are affected differently by prudence (Cano-Rodriguez and Nunez-Nickel, 2015).

In many studies, the authors use various model to find correlations and influences of the conservatisms on other variables: investment (including foreign), crisis and post-crisis behaviour, size, asset structure, access to finance, operating risks assumed, compensation of management (including through the pensions plans), compensation of employees through stock-options plans, tenure of the CEO, type of shareholding and other elements of corporate governance (including state control or inclusion in the board executive board), audit opinion, auditor category and auditor independence, stock price evolution in connection with various events, other investor reactions to various firm announcements, M/B ratio, uncertainty, information asymmetry, evolution of sales, litigation, general tax environment or company-specific tax variables, the evolution of accounting standardization (especially voluntary/mandatory application of IFRS), the characteristics of the legal regime, dominant cultural features, social responsibility, HR policy, phases of the company's life cycle, cost of equity, borrowing costs, enforcement of law, religion, quality of results and earnings management, etc.

Khan and Watts (2009) identify, from the literature, the main links between prudence and important variables in the characterization of listed companies:

- the positive relationship between prudence and the M/B ratio;
- large firms are less subject to information asymmetry and therefore less inclined to exaggerate the application of accounting prudence, although their characteristics expose them to litigation and this could lead to prudent behaviour in financial reporting;
- high leverage is associated with increasingly prudent behaviour.

To these we can add:

- the correct application of prudence (ex-post) has an important role in restricting the opportunistic behaviour of managers, by reducing their possibilities to overestimate the income (Watts, 2003);
- prudence reduces information asymmetry more in the firm-shareholders relationship than in the firm-creditors relationship (Goh *et al.*, 2017);
- a strong corporate governance mitigates the effect of CEO retirement on the application of conditional conservatism (Chen *et al.*, 2018);
- an increase in prudence contributes to the decrease of the cost of capital (Li, 2015), but up to a certain point, after which it leads to the increase of this cost (Khalifa *et al.*, 2019);
- companies located in areas with a higher degree of religiosity are more prudent (Ma *et al.*, 2019);
- more prudent companies have easy access to bank loans in periods of crisis (Zhang, 2020)
- prudence reduces accrual earnings management, but encourages real earnings management (Garcia Lara *et al.*, 2020).

A review of the literature on accounting prudence can be found in Ruch and Taylor (2015).

The indicators we analyse in this study – depreciation, impairment and provision expenses, that we call prudence expenses - are mainly related to conditional prudence, except for depreciation, which corresponds to accounting options (depreciation period and depreciation method, in particular) specific to unconditional prudence. André *et al.* (2015) notes that the application of IFRS in Europe since 2005 has led to an overall decrease in the effects of conditional prudence for a sample of firms from 16 European countries. However, in the case of Romania, from the individual financial statements of listed companies that have applied IFRS since 2012, it results that the immediate effects (related to 2011) seem to indicate a more prudent accounting in IFRS than in RAS, taking into account the effects on the net income (Istrate, 2014).

A greater degree of prudence in financial reporting can have favourable effects in the event of crises that entities have to go through. Balakrishnan *et al.* (2016) found more prudent firms suffer less than others, during the crisis and in terms of investment activity. This idea is continued by Braun (2016), who states

that after the economic and financial crises there is a clear trend towards more prudence (and more insistent use of historical cost), these classic principles increasing the probability of business survival. In the same context, analysing the situation in Canada during the transition to IFRS, Bandyopadhyay *et al.* (2017) find that a higher degree of pre-IFRS prudence leads to a better relevance of the revaluation of real estate investments in IFRS.

Before the IASB removed prudence from the conceptual framework, Givoly and Hayn (2000) and Watts (2003) found that the evolution of financial reporting for US firms evidenced an increasing accounting conservatism, materialized in a reduction in income that has no counterpart in the equivalent reduction in cash flows; the results of Givoly and Hayn (2000) are supplemented by Hansen *et al.* (2018) which finds that unconditional conservatism decreases as the transition from one phase to another of the life cycle of companies, without conditional prudence to depend in any way on this life cycle.

In the case of China, Cheng and Kung (2016) find that compliance with a systematic CSR policy leads to greater conservatism in accounting, especially for companies where the state is not the principal shareholder.

Bunget and Bureană (2015) also analyse the accounting prudence of companies listed on the Romanian financial market, by trying to detect the risk of non-compliance with the principle of prudence and find that the analysis of financial indicators is useful in this regard. Robu and Toma (2015) apply the model of Basu (1997) on the example of listed Romanian companies and found that listed Romanian companies apply the principle of prudence especially in reporting the elements of liabilities and equity.

4. DATA AND METHODOLOGY

Given the impact that the impairment and provisions expenses had on the net income reported by OMV Petrom (see Table 1), we set out to determine what impact these types of net expenses have on the financial reporting of Romanian companies listed on the BSE's regulated market. For this, we extracted from the individual financial statements the net expenses with the depreciation and the impairment of fixed assets, the net expenses with the impairment of current assets (stocks and receivables), those for the impairment of financial assets and those with provisions. In order to calculate a ratio involving these net expenses, we related them to the sales, as it appears in the financial statements of the listed companies. The latter indicator is quite stable, in the sense that it does not depend in any way on accounting policies and estimates influenced more or less prudently. We have avoided using, at the denominator, the gross, net or otherwise reconstituted income, because it includes, directly or indirectly, the influence of the company's accounting choices, including in terms of prudence. The data are collected manually for the period 2007-2019; we started with 2007, because it is Romania's first year of membership in the EU. The population is not balanced and

includes only firms with non-financial activities, given the significant regulatory differences of the financial ones compared to the others (Table 2).

Table 2. Distribution by year of analysed observations on the regulated BSE market

| Year | Observations | Standards applied | Net profit firms | | Loss firms | |
|--------------|--------------|-------------------|------------------|--------------|------------|--------------|
| | | | N | % | N | % |
| <i>0</i> | <i>1</i> | <i>2</i> | <i>3</i> | <i>4</i> | <i>5</i> | <i>6</i> |
| 2019 | 67 | IFRS | 53 | 79.10 | 14 | 20.90 |
| 2018 | 69 | IFRS | 52 | 75.36 | 17 | 24.64 |
| 2017 | 71 | IFRS | 48 | 67.61 | 23 | 32.39 |
| 2016 | 73 | IFRS | 55 | 75.34 | 18 | 24.66 |
| 2015 | 73 | IFRS | 55 | 75.34 | 18 | 24.66 |
| 2014 | 75 | IFRS | 56 | 74.67 | 19 | 25.33 |
| 2013 | 77 | IFRS | 54 | 70.13 | 23 | 29.87 |
| 2012 | 75 | IFRS | 52 | 69.33 | 23 | 30.67 |
| 2011 | 79 | RAS | 59 | 74.68 | 20 | 25.32 |
| 2010 | 78 | RAS | 56 | 71.79 | 22 | 28.21 |
| 2009 | 79 | RAS | 60 | 75.95 | 19 | 24.05 |
| 2008 | 78 | RAS | 63 | 80.77 | 15 | 19.23 |
| 2007 | 79 | RAS | 70 | 88.61 | 9 | 11.39 |
| Total | 973 | | 733 | 75.33 | 240 | 24.67 |

Source: author projection, based on the data provided by the BVB sites (2020)

In a first step, we calculated the percentage of net prudence expenses in sales for each observation, after which we averaged. Given the existence of many outliers, we winsorized by bringing these outliers to the 5th and 95th percentiles. After that, we recalculate the percentages, after summing the individual results by years. This accumulation, we hope, allows us to avoid outliers, in a different way from the one retained in the first phase.

We do not find any references in the literature regarding the share of these net expenses in the sales, so we do not formulate any hypothesis.

In interpreting the results, we will separate the IFRS period from the RAS period, but we will also try to highlight any differences generated by the:

- size of the companies, calculated on the basis of the total assets;
- leverage, measured as total liabilities related to total assets;
- category of auditor (international affiliated auditors vs. local auditors) and audit opinion (modified vs. unmodified);
- gender of the financial director.

In the case of size and leverage, we separated the observations below the median from those above the median.

We also analyse the data related to the companies listed on the alternative market of BSE - AeRo - where we only had access to the period 2010-2019. The number of observations here is higher: 2,908, i.e. an average of 290 observations per year, compared to the average of 75 observations per year on the regulated market. It should be noted that the companies listed on AeRo apply, in the individual financial statements, only the Romanian Accounting Standards (RAS).

In the case of impairments and provisions, we often find negative amounts, which show us that, in that year, the company reverses more than it expensed. In our calculations we set averages, which leads to offsets between plus and minus amounts. We have chosen to keep these offsets so as not to distort the effects of provisions and impairments on the incomes for the year.

5. RESULTS AND DISCUSSIONS

5.1 Result for the entire period, by accounting standards applied

Prudence expenses related to the tangible and intangible assets include, in particular, depreciation - an expense that is considered fixed and that depends heavily on the share of depreciable fixed assets in total assets. To these expense is added the impairment of property, plant and equipment and intangible assets (impairments), the latter being net expenses or net revenue. In any case, the depreciation expense seems to be the most important, considering that, out of the 973 observations, in only 2 situations the values are negative – impairment reversed were greater than depreciation/impairment recognized for the company/year concerned. We could not have the information about how much of this expense is depreciation and how much is impairment, so we left them together.

Regarding the impairment of current assets, such a net expense is reported in 846 of the 973 observations (86.95%): 582 times, we have a positive expense, while 264 observations show a negative expense, resulting from more reversal of such impairments. Regarding the standards applied standards, during the RAS period, we have 356 observations with net non-zero expenses of current assets impairment (84.36%), while, during the IFRS period, the number of such observations is 490 (88.93%).

Provisions generated net expenses in 674 observations (69.27%), 371 being with net positive expenses and 303 with net negative expenses. In the case of provisions, we must also take into account the fact that, at their initial recognition, some of them are not expensed, but are included in the cost of some fixed assets (for example, provisions for the disposal of property, plant and equipment); In this case, those provisions affect expenses through the depreciation of fixed assets, while their reversal is recognized in revenues. During the periods, we have 265 observations with net expense with provisions during the RAS period (62.80%), while during the IFRS period we found 409 such observations (74.22%).

The fact that financial assets (except for commercial receivables) appear quite rarely in the accounting of Romanian companies, justifies the equally rare presence of their impairments: 191 observations out of 973 include such expenses (19.63%), of which 119 represents net positive expense and 72 net negative expense. Here, too, the share of companies with such expenses is higher during the IFRS period than during the RAS period: 127 in IFRS (23.05%) and 64 in RAS (15.17%).

The share in the sales of the various expenses that can be attributed to the application of the prudence principle are, on average, after winsorization:

- 8.05% for the fixed assets (9.09% in IFRS and 6.70% in RAS);
- 0.80% for impairment of current assets (0.95% for IFRS and 0.60% for RAS);
- 0.18% for provisions (0.19% in IFRS and 0.17% in RAS);
- 0.04% for the impairment of financial assets (same percentage in RAS and IFRS).

For the last three categories, we note that the compensation between the expenses and their reversal occurs, which significantly influences the average percentage.

The share of prudence expenses (even if it is offset by revenue from the reversal of the impairments/provisions) is clearly increasing as a trend. We see that, during the RAS (2007-2011), the totals (column 6 of Table 3) are much less consistent (except for 2008 - the year in which the implications of the global financial crisis were taken into account) than during the IFRS (2012-2019). The main component of total expense is the depreciation and impairment of fixed assets, for which the trend is also of significant increase in the IFRS period compared to the RAS period. The explanations can be multiple: the share of fixed assets in total assets remained about the same, but the average total assets increased systematically from year to year during the IFRS period compared to the RAS period; firms probably accounted for several impairment under IFRS. However, the average sales also increased systematically and significantly, which allows us to say that depreciation is not the main explanation for the increase in the share of prudence expenses related to fixed assets.

In the case of provisions, the formula proposed by Feleagă *et al.* (2010) and which measures the degree of uncertainty associated with prudence given by the presence of provisions in the balance sheet. After removing the observations without provisions, Feleagă *et al.* (2010) found, for companies in countries considered with accounting systems that rely heavily on prudence, an average share of 7.33% provisions in total liabilities. Taking into account only the observations with provisions explicitly reported in the balance sheet (701 observations, i.e. 73%), we reach a weight of 9.07% (9.85 in IFRS and 5.27% in RAS), which places us in the group of countries with very prudent accounting, close to Germany, Austria and Belgium.

Table 3. Weights of prudence expenses in sales

| Year | BSE regulated market | | | | | Total depreciation impairments and provisions expenses on AeRo market (%) |
|--------------|------------------------------------------|---------------------------------|----------------|----------------------------|---------------------------------------------------------|---------------------------------------------------------------------------|
| | Tangible and intangible fixed assets (%) | Inventories and receivables (%) | Provisions (%) | Other financial assets (%) | Total depreciation, impairments and provisions expenses | |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 2019 | 11.65 | 0.38 | 0.47 | -0.10 | 12.41 | 5.79 |
| 2018 | 9.46 | 0.71 | 0.23 | 0.03 | 10.43 | 6.47 |
| 2017 | 11.80 | 0.14 | -0.28 | -0.14 | 11.51 | 7.94 |
| 2016 | 13.09 | 1.61 | 0.22 | 0.02 | 14.95 | 9.01 |
| 2015 | 18.75 | 0.79 | 0.71 | 0.53 | 20.77 | 7.41 |
| 2014 | 12.47 | 0.73 | 2.08 | 1.07 | 16.35 | 10.85 |
| 2013 | 11.02 | 0.58 | -1.15 | 0.82 | 11.27 | 9.54 |
| 2012 | 8.29 | 1.08 | -0.34 | 0.34 | 9.38 | 6.16 |
| 2011 | 9.76 | 2.15 | 0.05 | 0.37 | 12.34 | 5.80 |
| 2010 | 9.67 | 0.11 | -0.60 | 1.07 | 10.24 | 5.54 |
| 2009 | 9.92 | 0.15 | -1.37 | 0.36 | 9.06 | - |
| 2008 | 7.76 | 1.00 | 1.72 | 0.39 | 10.87 | - |
| 2007 | 6.39 | 0.12 | -0.05 | 0.09 | 6.55 | - |
| Total | 10.82 | 0.77 | 0.17 | 0.37 | 12.12 | 7.39 |

Source: author projection, based on the data provided by the BVB sites (2020)

We chose to report also the results calculated for companies listed on the AeRo segment of BSE, where smaller companies are listed and, especially, where only the RAS are applied. Here we have 2,908 observations, for the period 2010-2019. For the context, it is useful to recalculate the statistics on the number of companies that present in the profit and loss account net prudence expenses and the meaning of the amounts reported as follows:

- in 60 observations (2%) nothing is related to the fixed assets, which means that either they have nothing to depreciate (most likely) or the depreciation expense is offset exactly by any reversal (very unlikely); in 12 observations (0.41%), the net expense is negative, i.e. the values reversed were greater than the expense;
- in 1,596 observations (54.88%) we found amounts regarding the impairments of current assets, of which 1,093 observations (68.48%) with positive expenses and 503 observations (31.52%) are with negative expenses;
- in 950 observations (32.67%) there are net expenses with provisions, of which 474 (49.89%) with positive amounts and 476 (50.11%) with negative amounts;

- in 254 observations (8.73%) there are expenses regarding the impairment of financial assets, of which 128 (50.39%) with positive amounts and 126 (49.61%) with negative amounts.

The share of companies that expensed depreciation/impairment and provisions is much lower than in the case of companies listed on the regulated market, even if we refer only to the RAS period in the evolution of the regulated market. This may suggest a lesser concern in ensuring the choices and application of accounting procedures for estimating and valuing impairments and provisions for firms in this alternative category of BSE. At the same time, the share of provisions in liabilities (according to the formula proposed by Feleagă *et al.*, 2010), for the companies that constituted provisions (1,005 observations, i.e. 35%) is 10.11%, also including them in the area of prudent countries. However, taking into account all the observations, the average drops significantly to 3.49%.

For the companies listed on the regulated market, Table 3 shows weights of prudence expenses that systematically exceed 10% - especially during IFRS; in the case of companies listed on AeRo, similar calculations show significantly lower percentages, which are justified by fewer companies which use these accounting treatments of uncertainty.

In most of the following tables, we have chosen to highlight the prudence expense on fixed assets, the main component of which is depreciation. The possible increase from one period to another of this expense may have as an explanation in the option for revaluation of listed Romanian companies. Even if revaluation is an exception to the classic version of the prudence principle - a favourable difference between fair value and book value is generally recognized in accounting - its effects on the income statement are in the sense of increasing depreciation expense, in the subsequent years. The revaluation can therefore explain, to a certain extent, the increase in depreciation expenses, especially since, in the case of listed Romanian companies, the share of those who revalue is quite high. Thus, if we retain the companies that report in the balance sheet reserves from revaluation (although revaluation can lead to zero reserves), the situation is as follows:

- on the regulated market the total share is of 87.69%, for an average of 96.39% during the RAS period and of 81.93% during the IFRS period; a maximum of 98.70% in 2011 and a minimum of 79.22% in 2016;
- on the AeRo alternative market, the share is 91.06% (the whole period is RAS), for a maximum of 92.6% in 2017 and a minimum of 85.96% in 2010.

5.2 Provisions and depreciation/impairment charges, according to the size of the companies

We can expect large companies to be more prudent in reporting net income, especially due to the fact that they are much more exposed than small ones. Political cost theory advances the idea that some large firms try to report lower

profits in order to reduce the pressure they are subjected to by the authorities and other users. On the other hand, large companies also have specialized departments with professionals who tend to apply with a little more rigor the accounting rules, including those influenced by prudence. Also, large companies hire auditors with more important resources and they could be careful in checking the application of prudential rules. Under these conditions, we expect the share of prudence expenses to be higher for large firms than for small ones. The separation was made according to the total assets, even if its size is influenced by the depreciation/impairment, which are deducted from the gross values, in order to set the reported values of the assets.

Table 4. Weights of prudence expenses in sales, according to the size

| Year | Regulated market of the BSE | | | | Total prudence expenses divided by sales, on AeRo market (%) | |
|----------|----------------------------------------------|--------------|---------------------------------------------------------------|--------------|--------------------------------------------------------------|-------------|
| | Total prudence expenses divided by sales (%) | | Depreciation/ impairment of fixed assets divides by sales (%) | | | |
| | Small firms | Large firms | Small firms | Large firms | Small firms | Large firms |
| <i>0</i> | <i>1</i> | <i>2</i> | <i>3</i> | <i>4</i> | <i>5</i> | <i>6</i> |
| 2019 | 3.96 | 12.70 | 4.33 | 11.90 | 6.77 | 5.72 |
| 2018 | 4.67 | 10.59 | 4.15 | 9.61 | 9.09 | 6.26 |
| 2017 | 5.42 | 11.73 | 5.49 | 12.02 | 8.14 | 7.92 |
| 2016 | 5.47 | 15.33 | 5.78 | 13.38 | 6.88 | 9.20 |
| 2015 | 15.29 | 21.00 | 6.96 | 19.23 | 7.82 | 7.37 |
| 2014 | 5.09 | 16.78 | 5.11 | 12.75 | 6.02 | 11.30 |
| 2013 | 5.12 | 11.56 | 4.73 | 11.32 | 7.46 | 9.72 |
| 2012 | 7.90 | 9.45 | 6.11 | 8.39 | 7.17 | 6.07 |
| 2011 | 6.91 | 12.60 | 3.57 | 10.06 | 8.17 | 5.60 |
| 2010 | 4.05 | 10.60 | 3.54 | 10.02 | 6.06 | 5.49 |
| 2009 | 5.70 | 9.29 | 4.83 | 10.27 | - | - |
| 2008 | 6.03 | 11.18 | 4.09 | 8.00 | - | - |
| 2007 | 4.20 | 6.78 | 4.08 | 6.61 | - | - |
| | 6.04 | 12.41 | 4.73 | 11.11 | 7.32 | 7.40 |

Source: author projection, based on the data provided by the BVB sites (2020)

The calculations made by taking into account all the observations, lead to a share of 8.13% of the total prudence expenses in sales, for the observations with total assets below the median. In the case of large companies (total assets above than medium), the share is 9.81%. Turning to the cumulation of indicators by years and the calculation of a new average, the results emphasize even more clearly the higher share of expenses analysed in the sales of large companies (see Table 4), with the same significant contribution of depreciation/impairment of tangible asset.

5.3 Leverage and prudence

More leveraged firms may be tempted to report higher profits to reach the levels of some financial indicators included in the credit contracts. In the literature, it is shown that, in general, creditors require a high degree of prudence in financial reporting from the companies they finance and that, in cases of crises that limit the ability of companies to borrow, prudence becomes very important in ensuring the capacity of companies to continue its investment projects (Balakrishnan *et al.*, 2016).

Table 5. Weights of prudence expenses in sales, according to the leverage

| Year | Regulated market of the BSE | | | | Total prudence expenses divided by sales, on AeRo market (%) | |
|----------|----------------------------------------------|---------------|---------------------------------------------------------------|---------------|--------------------------------------------------------------|---------------|
| | Total prudence expenses divided by sales (%) | | Depreciation/ impairment of fixed assets divides by sales (%) | | | |
| | Low leverage | High leverage | Low leverage | High leverage | Low leverage | High leverage |
| <i>0</i> | <i>1</i> | <i>2</i> | <i>3</i> | <i>4</i> | <i>5</i> | <i>6</i> |
| 2019 | 18.19 | 3.59 | 17.13 | 3.29 | 6.48 | 5.64 |
| 2018 | 15.03 | 5.07 | 14.40 | 3.70 | 9.22 | 5.66 |
| 2017 | 18.11 | 3.87 | 18.24 | 4.34 | 8.17 | 7.87 |
| 2016 | 16.38 | 14.47 | 13.11 | 13.08 | 12.96 | 7.85 |
| 2015 | 21.13 | 20.67 | 15.85 | 19.59 | 10.63 | 6.60 |
| 2014 | 17.09 | 16.15 | 14.34 | 11.97 | 10.18 | 11.06 |
| 2013 | 13.92 | 7.89 | 13.92 | 7.32 | 10.50 | 9.35 |
| 2012 | 16.62 | 7.82 | 14.30 | 6.99 | 9.48 | 5.22 |
| 2011 | 11.42 | 12.78 | 13.03 | 8.19 | 8.16 | 5.09 |
| 2010 | 12.22 | 9.60 | 12.36 | 8.79 | 6.77 | 4.91 |
| 2009 | 12.89 | 7.83 | 13.41 | 8.79 | - | - |
| 2008 | 10.53 | 10.95 | 6.58 | 8.06 | - | - |
| 2007 | 7.68 | 6.19 | 6.22 | 6.45 | - | - |
| | 15.27 | 10.45 | 14.30 | 8.97 | 9.05 | 6.92 |

Source: author projection, based on the data provided by the BVB sites (2020)

In the case of the observations we analyse, we again separate two categories, depending on the median leverage (36.50%), calculated as the ratio between total liabilities and total assets.

Taking into account all the observations, the average share of prudence expenses in sales is 10.07% for companies with low leverage and 7.89% for those with high leverage. Moving on to the calculations based on the sum of the indicators per year, the results confirm the trend found earlier - high leverages leads to a decrease in the share of prudence expenses in sales, although the percentages are different (Table 5).

5.4 Auditors and prudence expenses

The literature finds that firms audited by Big N are more prudent than others (a review of the literature in this regard can be found in Crocket & Ali, 2015). The separation, in analysis, of this category of auditors is generalized in the literature. The companies listed on the regulated market of BSE use the services of auditors as follows: in 298 observations (31%) we have reports issued by auditors belonging to Big 4, in 122 observations (13%) auditors are affiliated to international networks other than Big 4, the rest of 555 observations (56%) being accompanied by audit reports issued by local auditors. We operated for this classification of auditors suggested by Romanian literature (Păunescu, 2015; Istrate, 2018), because we consider that it can better characterize the Romanian context. In calculating the indicators we deal with, we grouped the first two categories into one and compared the results with those of local auditors.

The averages of the observations related to the two categories of auditors we have proposed are:

- for auditors affiliated to international networks: 9.47% of prudence expenses related to sales;
- for local auditors: 8.60% of prudence expenses related to sales.

Using the second method of calculation - first cumulation of indicators by years - we see in Table 6 that the intervention of an auditor affiliated to international networks is associated with a higher share of prudence expenses, especially on the regulated market of BSE.

5.5 Audit opinion and provisions/impairment charges

We chose, as in most related studies, to take into consideration two types of audit opinions: modified and unmodified. We found explicit audit opinions for only 967 observations out of the 973 observations from the regulated market. Opinions are divided as follows:

- 698 unmodified opinions: 72% of the total observations;
- 269 modified opinions (28%), of which 238 were qualified opinion, 18 disclaimer of opinion (for 8 companies) and 13 were adverse opinions (for three companies).

Table 5. Share of prudence expenses in sales, by auditor category

| Year | Regulated market of the BSE | | | | Total prudence expenses divided by sales, on AeRo market (%) | |
|----------|----------------------------------------------|----------------|---------------------------------------------------------------|----------------|--------------------------------------------------------------|----------------|
| | Total prudence expenses divided by sales (%) | | Depreciation/ impairment of fixed assets divides by sales (%) | | | |
| | Internationally affiliated auditors | Local auditors | Internationally affiliated auditors | Local auditors | Internationally affiliated auditors | Local auditors |
| <i>0</i> | <i>1</i> | <i>2</i> | <i>3</i> | <i>4</i> | <i>5</i> | <i>6</i> |
| 2019 | 12.75 | 7.17 | 12.08 | 5.13 | 7.58 | 4.44 |
| 2018 | 10.19 | 14.18 | 9.71 | 5.52 | 6.01 | 6.91 |
| 2017 | 12.30 | 1.07 | 12.23 | 6.11 | 7.32 | 8.68 |
| 2016 | 15.38 | 10.55 | 13.90 | 4.77 | 9.85 | 8.37 |
| 2015 | 22.13 | 6.45 | 19.99 | 5.61 | 6.84 | 7.93 |
| 2014 | 17.02 | 5.30 | 12.89 | 5.64 | 14.16 | 7.99 |
| 2013 | 11.85 | 3.71 | 11.47 | 5.26 | 8.85 | 10.24 |
| 2012 | 9.59 | 6.83 | 8.50 | 5.63 | 5.19 | 7.27 |
| 2011 | 9.94 | 39.27 | 10.21 | 4.75 | 3.83 | 7.85 |
| 2010 | 10.10 | 11.28 | 10.27 | 5.25 | 3.45 | 6.93 |
| 2009 | 9.54 | 5.39 | 10.53 | 5.30 | - | - |
| 2008 | 11.53 | 6.77 | 8.36 | 4.07 | - | - |
| 2007 | 6.97 | 4.22 | 6.85 | 3.83 | - | - |
| | 12.37 | 9.58 | 11.37 | 5.03 | 7.22 | 7.62 |

Source: author projection, based on the data provided by the BVB sites (2020)

Following the calculation of the average weights of prudence expenses in sales, we reached 8.29% for the observations with unmodified audit opinions and 10.81% for observations with modified opinions.

In Table 7, we present the percentages resulting from the cumulation by year of the relevant indicators. In all cases, on average, the changed opinion is associated with a higher share of expenses related to impairment and provisions in sales, both on the regulated market and on the alternative market AeRo.

5.6 Gender and conservatism

The literature sometimes introduces, in the analysis of companies' behaviours, variables related to the gender of the financial director. In the case of companies listed on the regulated market of BSE, we can easily identify the persons who sign the financial statements, because their names appear in the financial statement submitted to the tax authorities. Thus, out of the 973 observations, we found 948 for which the financial director (or the person with an equivalent position) identifies himself explicitly. There are also 13 observations

where the role of CFO is played by an accounting firm - we have eliminated them; also, in another 12 cases, we did not find the name of the CFO. Out of the 948 available observations, we identified 405 men (42.72%) and 543 women (57.28%).

Table 6. Weights of prudence expenses in sales, according to the audit opinion

| Year | Regulated market of the BSE | | | | Total prudence expenses divided by sales, on AeRo market (%) | |
|------|----------------------------------------------|------------------|---------------------------------------------------------------|------------------|--------------------------------------------------------------|------------------|
| | Total prudence expenses divided by sales (%) | | Depreciation/ impairment of fixed assets divides by sales (%) | | | |
| | Clean opinion | Modified opinion | Clean opinion | Modified opinion | Clean opinion | Modified opinion |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 2019 | 11.90 | 16.44 | 11.31 | 14.32 | 6.01 | 5.23 |
| 2018 | 9.27 | 20.08 | 8.82 | 14.76 | 6.36 | 7.34 |
| 2017 | 11.35 | 12.58 | 11.47 | 14.00 | 6.91 | 16.28 |
| 2016 | 14.47 | 19.69 | 12.92 | 14.72 | 6.45 | 32.09 |
| 2015 | 21.05 | 18.06 | 19.05 | 15.79 | 5.91 | 14.25 |
| 2014 | 15.92 | 21.09 | 11.65 | 21.58 | 4.53 | 34.50 |
| 2013 | 9.02 | 28.41 | 8.78 | 28.11 | 8.09 | 14.08 |
| 2012 | 9.36 | 9.48 | 8.17 | 9.04 | 5.68 | 7.80 |
| 2011 | 8.68 | 35.17 | 8.38 | 8.11 | 6.54 | 3.60 |
| 2010 | 8.78 | 16.24 | 9.05 | 9.02 | 6.23 | 4.13 |
| 2009 | 8.32 | 8.39 | 9.35 | 8.41 | - | - |
| 2008 | 11.19 | 6.19 | 7.87 | 5.83 | - | - |
| 2007 | 5.99 | 6.14 | 6.12 | 6.11 | - | - |
| | 11.42 | 16.32 | 10.38 | 12.71 | 6.28 | 12.02 |

Source: author projection, based on the data provided by the BVB sites (2020)

The share of prudence expenses, depending on the gender of financial director, taking into account all individual observations, is 7.35% for men and 8.28% for women. On the contrary, the cumulation by years of the indicators we deal with leads, on average, to higher percentages in the case of observations where men are CFOs (Table 8). In all cases, however, the weights are significantly higher during the IFRS period than during the RAS period.

Table 8 shows that the situation of companies listed on the regulated market differs slightly from that of companies on AeRo, in the sense that, for the latter, women seem to be more prudent than men, as CFO.

Table 7. Weights of prudence expenses in sales, according to the gender of the financial director

| Year | Regulated market of the BSE | | | | Total prudence expenses divided by sales, on AeRo market (%) | |
|----------|----------------------------------------------|------------|---------------------------------------------------------------|------------|--------------------------------------------------------------|------------|
| | Total prudence expenses divided by sales (%) | | Depreciation/ impairment of fixed assets divides by sales (%) | | | |
| | Male CFO | Female CFO | Male CFO | Female CFO | Male CFO | Female CFO |
| <i>0</i> | <i>1</i> | <i>2</i> | <i>3</i> | <i>4</i> | <i>5</i> | <i>6</i> |
| 2019 | 10.56 | 14.10 | 9.59 | 13.52 | 10.20 | 4.90 |
| 2018 | 8.70 | 12.04 | 7.19 | 11.63 | 8.79 | 5.83 |
| 2017 | 7.91 | 14.74 | 7.53 | 15.63 | 6.91 | 8.17 |
| 2016 | 10.31 | 18.75 | 8.38 | 16.97 | 11.29 | 8.11 |
| 2015 | 35.91 | 8.16 | 33.00 | 6.87 | 6.56 | 7.60 |
| 2014 | 26.31 | 8.24 | 20.44 | 5.97 | 6.05 | 12.93 |
| 2013 | 14.52 | 7.55 | 15.22 | 6.17 | 5.61 | 11.38 |
| 2012 | 10.36 | 8.59 | 10.36 | 6.59 | 4.24 | 6.86 |
| 2011 | 12.32 | 11.96 | 12.64 | 5.27 | 4.53 | 6.78 |
| 2010 | 9.09 | 11.18 | 9.33 | 8.73 | 5.80 | 5.42 |
| 2009 | 8.49 | 6.02 | 9.36 | 7.22 | - | - |
| 2008 | 11.78 | 7.36 | 8.62 | 5.14 | - | - |
| 2007 | 6.40 | 5.27 | 6.74 | 4.92 | - | - |
| | 13.05 | 10.88 | 11.96 | 9.30 | 6.36 | 7.73 |

Source: author projection, based on the data provided by the BVB sites (2020)

6. CONCLUSIONS

Our study aims to identify the share of expenses associated with accounting prudence in the sales of Romanian companies listed on BSE. We consider both the companies listed on the regulated market (973 observations), for which we make the separation between the RAS period (2007-2011) and the IFRS period (2012-2019), on the one hand, and the companies listed on the AeRo market (2010-2019) which applies, for the whole period, only RAS.

A first result suggests that firms in the regulated market have shares of prudence expenses significantly higher than firms in the alternative market. Also, the number of companies that use these instruments (impairment and provisions) is higher on the regulated market. This situation can be attributed to the greater exposure of companies in the regulated market, which forces them to be more rigorous in applying the rules of prudence, as well as more careful control by auditors or by other categories of users. At the same time, if we take into account the theory of political costs, the exposed companies try to use prudence to reduce the claims of the state and other categories of users in profit sharing. Regarding the rules applied, for companies listed on the regulated market, it appears that the

transition to IFRS has led to a visible increase in the share of impairment and provisions expenses in total sales, given that sales has increased.

If we take into consideration the size of firms (above and below the median of total assets), invoking the theory of political costs mentioned above, we see that large firms (above average) listed on the regulated market report significantly higher (more than double) share of prudence expenses than small firms listed on the same market. On the contrary, for the companies listed on AeRo, the separation of large companies/small companies does not seem to be significant from the point of view of the share in the sales of the expenses analysed by us.

And in the case of leverage, on the regulated market, companies bellow median (ratio between total liabilities and total assets) have significantly higher shares of prudence expenses.

The reputation of auditors affiliated to international networks (both Big 4 and other networks) is that they are much stricter in the application of the accounting and financial reporting standards, including prudence. This reputation is confirmed by the results we have reached, in the sense that, in the case of companies on the regulated market, the share of prudence expenses in sales is higher when the auditor is an internationally affiliated. This conclusion is not valid for companies listed on AeRo, but here the share of internationally affiliated auditors is very small, so we cannot generalize the results. Taking into account the type of opinion provided by the auditors, we see that the modified opinions accompany reports in which the share of prudence expenses is higher than in the case of clean opinions, for all categories of analysed companies.

Finally, considering the gender of CFO, we notice that companies with male CFO have a higher share of prudence expenses, but only on the regulated market - on the AeRo market, the situation is the opposite.

The main limitations of the study consist in its strictly descriptive character, i.e. in the absence of statistical correlations between the variables specific to prudence (the share of prudence expenses in sales) and other variables of the listed companies analysed. Also, the measure of prudence we use is a very simple one, in relation to the variables and models that we can identify in the literature. Future research may attempt to remove address these limitations.

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USING THE CONCEPT OF INTERACTION DOMAINS OF “CIRCLES OF SUSTAINABILITY” TO ANALYZE LOCAL DEVELOPMENT PROCESSES

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ABSTRACT

It is proposed to put the concept of local economic development (LED) at the basis of the approach to solving the problem of ensuring spatial sustainable development of the territory. The basis for this is the complexity of the LED concept, which allows, in the analysis process, to link the territorial dimension with the economic, social or environmental problems of the territory development. However, the insufficient theoretical basis of the concept limits its practical application. To determine the data characterizing the process, it is proposed to use the methodology for assessing the interaction of the four domains of "Circles of Sustainability". Its addition with SWOT-analysis methods allowed, using the example of a case for the southern region of Ukraine, not only to obtain the required quantitative (economy) and qualitative (social sphere) indicators but also to prepare a forecast for the possible development of the region.

Keywords: local economic development; regional development; Circles of Sustainability.

JEL Classification: O11, O21, R11, R58

1. INTRODUCTION

A common approach used in the analysis of sustainable local development processes is the application of the concept of local economic development (LED) (Ascani *et al.*, 2012; Bates, 2011; Wiewel *et al.*, 2011).

The application of the LED concept allows us to consider the problem of local development from a unified point of view while taking into account the economic, social, and environmental factors that determine the sustainability of the development of the territory. Thus, the possibility of attracting external resources is limited by the condition to preserve the ability of future generations to also meet their needs.

A distinctive feature of the well-known definitions of LED is that they propose to consider such a fundamental condition for the sustainability of local development and activation of economic growth as the interaction of all stakeholders, including local authorities, representatives of the local community, and non-governmental organizations (Blakely and Bradshaw, 2002; Canzanelli, 2001; Swinburn, 2006).

But it should also be noted a certain difficulty in the practical use of the LED concept. The need to analyze qualitative and quantitative data characterizing the importance of economic, social, and environmental characteristics of local development, often unrelated to each other, is a limiting factor (Bolis *et al.*, 2014; Connelly, 2007).

A distinctive feature of any LED project is to determine the possibility of sustainable development only on the basis of a preliminary developed plan. Taking this into account, the theory of instrumental action can be considered as a theoretical basis for the application of the LED concept (Woolcock, 2004). Its application will make it possible to present the LED process as an artificial structure focused on meeting the needs of the local community.

In turn, to construct such a structure, the study proposes to use the theory of growth poles and development centers by F. Perry, which was later developed by V. Kristaller (Perroux, 1950, 1970).

Currently, an example of the application of this theory can serve as approaches to the analysis of the processes of local development of the concept of core-periphery. According to this concept and the theory of François Perroux (1950, 1970), the regional growth pole is the place where resources and means of production are concentrated, which in turn are the poles for attracting production factors, but also their most efficient use. Further, the process of concentration of production factors continues and eventually leads to the emergence of a pole of economic growth.

The issues of planning and public administration of LED on the basis of determining the "poles of growth" are considered in the works (Parr, 1973, 1999).

But the application of the theories considered does not allow us to get an answer to the main question of how to relate local development with economic, social, or environmental problems of its sustainability; quantitative (economy) and qualitative (social sphere) indicators are usually used.

To determine them, the study proposes to use the four domains of the "Circles of Sustainability" interaction assessment methodology (Magee *et al.*, 2015). Its peculiarity is the representation of the local social and economic complex of four domains, which interact with each other in a space defined as "Circles of Sustainability".

Each of the "domains" of "Circles of Sustainability" represents a set of characteristics of local development, which can be attributed to such factors of influence as "politics", "economy", "ecology" and "culture". Thus, as initial data

it is offered to consider current values of the indicators characterizing the corresponding "domains". This approach will determine the threshold of LED stability in terms of balancing forces inherent in territorial systems based on the balance of values of evaluation indicators calculated for the four domains of "Circles of Sustainability" (Komarovskiy, 2019).

2. METHODS

The methodology of the LED research processes in the work is based on the analysis of the influence and interaction between factors related to such components of sustainable development as the economy, social environment, and ecology or the environment. (Connelly, 2007). Determining the list of specific factors affecting this LED process, it is necessary to take into account a number of limitations associated with the concept of sustainable development:

- obligations to preserve the natural environment;
- priority of the development of the social environment;
- ensuring a balance of internal and external factors that determine the stability of the territorial system.

Taking into account the listed limitations, the size of the obtained data sample should be sufficient to draw reasonable conclusions. Obtaining such a sample of data is possible based on the determination of indicator values characterizing the domains of "Circles of Sustainability" (Magee *et al.*, 2015). But for this, each of the four domains ("politics", "economics", "ecology" and "culture") must be represented by some limited set of indicators that characterize the environmental indicators related to the domain.

In turn, different methods can be used to determine the values of domain indicators. Taking into account the social orientation of the sustainable development strategy, the study proposes to use an approach based on the provisions of the theory of consumer demand. Knowledge of factual information about the real needs of the local community will allow determining the mechanism for the formation of its favorable attitude to the results of the development of the territory through the data of assessing the domains indicators. A subsequent analysis of the data will allow building a model of spatial sustainability, taking into account the balance condition balances inherent in the territorial system.

The identification and assessment of key factors influencing the process of LED, it is necessary to take into account the limitations imposed by the use of the concept of sustainable development, including:

- there is a link between local government policies and their ability to address existing economic, social and environmental sustainability issues;
- opportunities and threats arising from the impact of external factors of influence.

For this, the research methodology should include methods of consumer demand and SWOT analysis. As a result, both a quantitative and a qualitative

assessment of the indicators characterizing the interaction of domains of "Circles of Sustainability" will be obtained.

3. INTERACTION OF DOMAINS OF "CIRCLES OF SUSTAINABILITY" IN THE PROCESS OF SUSTAINABLE DEVELOPMENT OF THE TERRITORY

According to the proposed methodology for assessing the LED process in the work, a sample of qualitative and quantitative data will be obtained that characterizes the values of the domains indicators: "politics", "economics", "ecology" and "culture" (James, 2014, Magee *et al.*, 2015).

Moreover, each of the D domains will be characterized by a limited set of its indicators $\{x_{n,m}\}$, that is determined by the characteristic of this domain. Their qualitative and quantitative assessment will allow a comprehensive assessment of the LED process.

As noted above, the domains of "Circles of Sustainability" constantly interact with each other. The process of their interaction is governed by the institutional environment, traditions, social practice, and private interests.

The practical determination of the values of indicators characterizing the domains of "Circles of Sustainability" and the course of the development process is a rather difficult task. This complexity is determined not only by the variety of data that are used to assess individual subjects of the LED process but also by the need to account for data of a different nature, both qualitative and quantitative. Additionally, it is necessary to take into account the possible influence of external factors.

A possible option for reducing the dimension of the data sample is (Komarovskiy, 2019):

1. dividing the LED process into two stages, generating LED programs and implementing LED programs;
2. the introduction of restrictions on the list of factors affecting the course of the LED process.

The result of the introduced restrictions is a reduction in the sample size of indicator values, functional (equation 1), (Komarovskiy, 2019):

$$\mathcal{H}_f \{x_{n,m}^v\} = \mathcal{H}_{f_{\text{real}}} [\mathcal{H}_{f_{\text{gen}}} (\{x_{n,m}^v\}, (\alpha, \tau)) + \varphi + \theta] \quad (1)$$

where:

- $\{x_{n,m}^v\}$ initial set of process realizations LED;
- $\mathcal{H}_{f_{\text{real}}}$ and $\mathcal{H}_{f_{\text{gen}}}$, respectively, operators for generating and implementing the LED process;
- α is the main influencing factor characterizing the prerequisites for the start of the LED process, its goal, and main tasks;
- τ are constant factors characterizing the specific internal and external conditions for the development of the LED process;

- φ - systemic or periodic noise affecting the LED process;
- θ - random factors with a normal distribution.

Analysis of the interaction of the domain of “politics” with the domains of “economy”, “culture” and “ecology” allows one to obtain an assessment of both indicators of social progress (qualitative assessment of indicators) and economic development (quantitative assessment). But quantitative indicators usually characterize only the economic potential of the territory and not the level of social benefits. Therefore, qualitative indicators, as indicators of the social orientation of the PU system to ensure the welfare of society, are proposed to be considered in the work as priorities in the study of the LED process.

In any case, in order to obtain a final assessment of LED efficiency, it is necessary to use a certain integral indicator, the value of which will make it possible to establish the compliance of the results obtained with the criteria for sustainable development of the territory. As a possible criterion, the authors of the study suggest using such an indicator as to the “criterion of sustainable development” (CSD). Further, under the concept of CSD in the study, it is proposed to understand the following definition: "the criterion of sustainable development of territory is an integral characteristic of its aggregate ability to support the processes of economic transformation"

It is clear that being a real concept determined by the market nature of the economy, the CSD is determined by the objective laws of market movement, specific trends in local development, and the need to meet the social needs of members of the local community. Therefore, when determining the CSD, one should proceed not from the actual, but from the expected (potential) scenario of the development of the LED process. Then such a forecast of the results and efficiency of the LED process will subsequently be used as a criterion in making strategic decisions.

Based on the foregoing, the work proposes the following sequence for planning the process of sustainable development of the region (Komarovskiy, 2019):

1. Choice of the strategic direction of the domain "policy", whose representatives should offer the local community their proposals for the LED program;
2. with the involvement of representatives of the domains "economy", "culture" and "ecology" to determine the list of factors of internal and external influence that should be taken into account when predicting the results of LED, determining the ratio of the volume of attracted resources and risks of local development;
3. determination of priority, strategic directions of LED, taking into account the local macroeconomic situation, the effectiveness of interaction between executive authorities, business, and the public;

4. development of methodological solutions for the development and implementation of a marketing strategy for the development of the social sphere, the formation of a control mechanism for the LED process, the creation of local "growth poles";
5. determination of the main principles of setting and creation of a public administration system (domain "policy") by the LED process.

The conditions of economic activity, available and attracted resources, management mechanisms directly related to the attraction and creation of specialized factors, all of this will ultimately determine the level and trends of the CSD.

4. QUALITATIVE ASSESSMENT OF DOMAINS INDICATORS OF "CIRCLES OF SUSTAINABILITY"

The use of "Circles of Sustainability" allows the LED process to be linked to the existing political, economic, social, and environmental issues of sustainable development of the territory. The main determinant that determines the beginning and development of the LED process is the specific mechanisms of public administration (domain "politics"). Their task is not only to attract but also to create specialized factors to ensure the sustainable development of the region.

Thus, the main assumption from which an experimental study of the interaction of domains of "Circles of Sustainability" can begin is the thesis of the leading role of the domain "policy". Its representatives are the local authorities of the PA responsible for the sustainable development of the territory.

The possibility of presenting a domain "policy" by public authorities is justified by the theory of instrumental action, according to which the transformation of the environment (natural and social) should be carried out on the basis of a developed plan (state or local program for the development of the territory) (Woolcock, 2004). Obviously, under this condition, the initiative to develop a program for the development of the territory should belong to the entity, which is authorized to make the final decisions.

According to the methodology adopted in the work, the study of the LED process will consist of identifying and analyzing qualitative and quantitative data characterizing the current state of the domains of "Circles of Sustainability" indicators. The assessment of the significance of the influence of internal and external factors will be determined in terms of indicators of economic development (quantitative) and social progress (qualitative).

The values of the indicators of the four domains obtained as a result of the study reflect the assessment of the level of local development by the representatives of the local community. But they are not the final assessment of the effectiveness of the LED process. The significance of the data should be determined taking into account the condition of minimizing risks and preventing conflicts of interest in the interaction of individual domains.

5. DATA. QUANTIFYING DOMAINS INDICATORS OF “CIRCLES OF SUSTAINABILITY”

The result of the LED process, in addition to ensuring a decent standard of living for the inhabitants of the territory, is the creation of a "growth pole" (Morgan, 1975).

Accordingly, research methods should include an assessment of the relationship between local government policies and indicators defining the interaction of the domains of "Circles of Sustainability" in the economic, social and environmental spheres. To obtain it, the study proposes to supplement the qualitative analysis “Circles of Sustainability” with SWOT-analysis methods.

To calculate the updated value of the indicators, the official statistics data characterizing the level of development of the Black Sea region of Ukraine were considered taking into account the weight (significance) of certain constant and variable factors of influence. To determine these weights, the values of the domains indicators of “Circles of Sustainability”.

The results of assessing the level of development of the Black Sea region of Ukraine based on the results of the SWOT-analysis are presented below, see Table 1 and Table 2.

Table 1. Opportunities and treats Assessment

| Opportunities (O) | Data | Threats (T) | Data |
|--------------------------------------------------------------------|-------------|------------------------------------------------------------------------|-------------|
| Transport infrastructure linked to the pan-European road network | 24 | Instability of the global market | 14.7 |
| The high potential of the agriculture and food processing industry | 41.5 | Instability of national legislation, high level of corruption | 11 |
| High potential for economic and social development | 17.7 | Crisis phenomena in the economy, inflation, and growing budget deficit | 26.8 |

Source: own representation

Table 2. Strengths and weaknesses Assessment

| Strengths (S) | Data | Weaknesses (W) | Data |
|------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------|-------------|
| Transport infrastructure linked to the pan-European road network | 15 | Low export potential of manufactured products | 37 |
| Possibility of further development of the agricultural sector | 41.2 | Lack of opportunity for long-term business planning | 21.1 |
| High demand in the regional and national market | 22 | Continuation of the crisis in the economy, severing ties with external partners | 12 |

Source: own representation

The data presented in Tables 1 and 2 allow, on their basis, to consider possible scenarios for the development of the southern region of Ukraine. The study proposes to consider three main options:

- ***inertial***, in which the influence of the "policy" domain on LED processes will be insignificant.

This scenario is based on using the existing data layer Opportunities (O)" and "Strengths (S)". On the part of the domain "policy", management actions, in this case, will be aimed not at preventing possible "Threats (T)" and reducing the level of "weaknesses (W)", but at reducing losses that will arise. Significant factors in this case will also be the fact that it is possible to reasonably predict the growth of values characterizing these indicators.

- ***mobilization***, priority will be given to the domain "economy", when development is ensured through loans from international funds and assistance from the European Union.

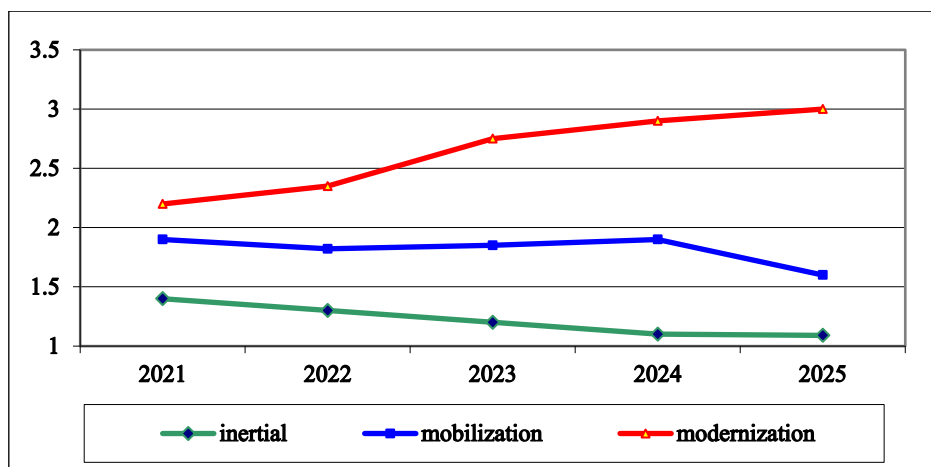
This scenario is based on the vigorous activity of the PU authorities related to the policy domain. It can be recommended in a crisis situation or after a crisis situation. For this, the priority is to mobilize all the resources available in the region: natural and land, human and financial resources, without considering the possibility of passing them on to future generations.

Using a mobilization approach will allow some gains to be made at first, but they will not be consolidated in the long term.

- ***modernization*** in which the domain "politics" will significantly influence the development of LED processes through deep reforms and support of local businesses.

This approach is based on the policy of carrying out reforms and ensuring, on their basis, sustainable economic development of the southern region of Ukraine. The model of the "modernization" scenario is primarily based on the interaction of representatives of the domains "politics" (PA bodies, government institutions), "economy" (business, financial institutions), "culture", and "ecology" (local community). This will allow attracting significant financial resources and implementing new innovative products on their basis. The result of this approach will be the development of infrastructure, an improvement in the quality of life and the social sphere, and the formation of a comfortable environment in the region.

It is necessary to realize that each of the considered scenarios, in addition to the fact that they are dependent on a number of external factors, will be realized differently in the time dimension, in accordance with the trends in the development of the world economy (see Figure 1).



Source: own representation

Figure 1. Forecast of GDP growth for three scenarios of the Black Sea region of Ukraine

6. CONCLUSIONS

The reliability of the results obtained in the study of the sustainable LED process, when it is necessary to simultaneously consider the social, political, and economic spheres, is limited by the condition of a combination of qualitative and quantitative, variables representing factors of external influence.

A possible solution would be applying the concept of interaction domains of "Circles of Sustainability".

The presented in the article some results of studying the practical application of the concept of domains of "Circles of Sustainability" allow us to make a reasonable conclusion that the application of this methodology can become an effective tool for planning and evaluating the LED process. Wherein:

- representation of the LED process based on the interaction of domains allows using the values of the indicators representing them to analyze this process;
- when taking into account the interests of the subjects of the development process, representing individual domains, one should take into account the possibility of a conflict arising from the contradiction of their proposed priorities, development goals, and objectives;
- when calculating and assessing domain indicators, it is possible to combine quantitative and qualitative data, which in turn allows taking into account all the factors influencing the development process;
- the complexity of the analysis of the social sphere, which is a priority of sustainable development programs, should be based on comparative analysis and comparison of points of view related to all actors in the development process (qualitative assessment data);

- evaluation value of indicators representing the domains of "politics" and "economics" in determining the economic efficiency of the development process should use quantitative assessment data.

Of course, the approach that is presented in the article to solving the problem of the stability of the LED process is not a complete study. The urgency of solving the problem of ensuring the development of individual territories in a state of the crisis remains. More extensive further research is needed to address them.

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STRATEGIC FORESIGHT IN THE FOREIGN POLICY OF STATES

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ABSTRACT

This paper analyses foresight as a key element of strategic thinking in the foreign policy of states. In recent years foresight activities became a key element of policy of a range of developed countries due to their role in providing knowledge about possible future and therefore contributing to the development of more elaborated long-term policy of states. This paper makes an attempt to consider the concept of foresight and the foresight-related research as one of the instruments of ensuring decision-making in strategy formation and policy development, as well as the use of the methods of foresight in the foreign policy of Norway. It concludes by arguing that the use of foresight is one of the most effective ways for a state to enhance its positions in the international arena.

Keywords: foresight; production of knowledge; foresight-related research; public decision-making; foreign strategy.

JEL Classification: A19

1. INTRODUCTION

Nowadays, in a rapidly changing globalized world where members of the international community face a set of complex, interconnected, and multifaceted problems, it becomes of particular importance for a state to contribute to solving common civilization problems, should it seek to increase its influence on international development. The phenomenon of globalization has increasingly prompted changes in virtually every area of political, economic and social interactions and led to strong interrelatedness between events and trends in various fields. In order to be a successful member of the international community a state is required to develop the long-term policies aimed to address current challenges and threats with due regard to the strategic assessment of the future via the far-sighted policy, which provides a state with greater chances to be an influential actor and realize its national interests in the international arena. The idea of foresight is critical both for the inter-personal and inter-state relations. The use of strategic foresight for planning a long-time scenario becomes an integral element

for realization of effective foreign policy strategy with due regard to the international context. This paper aims to analyze the concept of foresight in the foreign policy of states and focuses in particular on the example of Norway as one of the countries which relies on the methodology of foresight for successful realization of its foreign policy strategy and enhancement of its international standing.

2. THE CONCEPT OF FORESIGHT IN THE FOREIGN POLICY OF STATES

The term “foresight” first used by science fiction writer Herbert Wells in 1930 means future or prediction and combines elements of forecasting and strategic planning. (Hajkowicz, 2015, p.6). Currently, the term “foresight” is used to define one of the most effective technologies for projecting the development of society. The following definitions offer the most common views on foresight: “Foresight is a systematic attempt to assess the long-term prospects of science, technology, economics and society to identify strategic areas of research (Ben, 1995, p.141); foresight is a systematic, joint process of building a vision of the future, aimed at improving the quality of decisions made at the moment and accelerating joint action (EU FOREN Guide, 2001); the ideology of foresight comes from the convergence of trends in modern developments in the field of political analysis, strategic analysis and forecasting” (European Commission, 2020). According to the aforementioned definitions, one may define foresight as a systematic forecast, which assumes that the onset of the desired options for the future predominantly depends on the actual actions. So here goes that the choice of options should be concurrent with the development of appropriate actions. From this perspective foresight as a process includes predicting the possible future, creating its wished-for image, and determining strategies for its achievement.

The idea of foresight provides for the use of a set of tools which allow analysis of problems that may emerge in the future and elaboration of ways to address them through the coordination of interests and the development of practical measures to increase the proximity of the chosen strategic guidelines. Most foresight theorists and practitioners tend to regard it as a kind of combination of "product" (forecasts, scenarios, priorities) and "process" (establishing links between all stakeholders) that contributes to the analysis of the future phenomena, as well as to reaching consensus in a society via systematic dialogue between politicians, the public, experts, and business (Borch *et al.*, 2013, p. 103).

The methods of foresight used as a systemic tool for the analysis of the future have already proven to be effective tools for choosing priorities and developing the desired scenario of the future. The foresight methodology has been widely used by developed states since the 1990s and in particular, after the adoption of the Lisbon Strategy in almost all fields in order to have a clearer vision of their

future development. Given that the effectiveness of solving strategic tasks depends on the proper identification of national development priority guidelines, states which seek to have an impact on future development use foresight with a purpose of systematic separation of modern strategic scientific directions and technological achievements. Modern foresight is used as a systematic tool of influencing the formation of the future, providing for taking into account possible changes in different areas of activity, such as science, economics, social, and public relations.

The foresight can be considered as a conceptual approach when an actor focuses on creation of a certain image of the future (a general idea of how everything should be) and discuss its possible achievement within a specific time-framework. The elaboration of such a conceptual image of the future is directed at transforming the future vision of the world into concrete steps needed. In this context, foresight that involves the development of a strategy for further actions in an uncertain environment is becoming increasingly used as a key tool of strategic planning and decision making in development research on future trends and potential critical changes.

The results of national foresight projects should be used by the ministries and departments of a state and serve as the basis for the development of strategic and program documents. Being active forecasting that has an interdisciplinary nature the foresight is crucial for establishing effective communication between the scientific environment interested in new concepts and ideas, and industries that have a more practical target orientation. At the state level, the foresight is a core element of ensuring the coherence of national priorities included in the main strategic plans and programs of a state's development which need to be flexible to make the necessary adjustments under unforeseen circumstances possible.

In light of the above, we can assume that foresight is an integral element of the development of a state's foreign policy strategy because a state that seeks to become an influential actor should have a certain conceptual basis for its foreign policy. A long-term foreign policy strategy takes into consideration specific conditions, including temporal, spatial, and social factors and therefore becomes a logical result of the implementation of the current foreign policy program which determines the future priorities of a state. Hence, notwithstanding their inconstant nature, foreign policy priorities remain the main component of the long-term foreign policy of a state. Against the background of the growing potential of major international actors and their changing configuration in the international arena, it becomes important to define the determinants of different levels in the foreign policy strategy of a state, analyze how the determinants at the global level of decision-making are correlated to determinants at the domestic level, as well as to create the basis of a theoretical model of the foreign policy strategy of a state in order to predict the consequences of its behavior in the international arena.

The assessment of the logic of a state's decision-making on the choice of strategic priorities can contribute to the reconstruction of the process of their adoption, and a better understanding of a state's strategic behavior with an emphasis on the goals it seeks to achieve and the resources available. For the analysis of the concept of "strategy" recourse may be had to the definition offered by K. von Clausewitz who considered strategy as "a way to combine existing goals and available resources ... to obtain some benefit" (Clausewitz *et al.*, 2019, p.15.) This implies that although the concept of strategy was considered through the prism of the multidisciplinary approach, first it gained theoretical reasoning predominantly in the context of the review of military operations. It was further rendered attention as an essential element in multiple fields, including international relations. Strategy is also defined as "the design of political action and study of the key factors of the political situation in order to achieve dominance in any area of interest" (Ozhyganov, 2006, p. 22). Similar approaches may be considered eligible in the "civil" spheres (for example, winning the competition). However, the main aim of a strategy is not to counteract a consciously organized opposition, but to understand the logic of processes derived from the immanent patterns of development of the object of the strategy. Therefore, in the case of the "civil" strategy, such aspects as respect to the principles of the system, establishment of partnership relations, predictability, and openness become the priorities. In this context, goal setting may be regarded as a reference point of the strategy formation. The main task of the strategy is to define the framework and guidelines of adaptability and consequently build a concept strong enough and potentially flexible for an actor to achieve his goals despite unpredictable external intervention (Leon, 2017, p. 25).

The aforementioned definitions of a concept of "strategy" focus on the behavioral motives of a state for choosing strategic objectives and priorities. At the same time, one may assume that it is necessary to assess the value of certain resources available for a state, and, consequently, choose the most important goal that will allow for undertaking efforts that are necessary to achieve it. The process of setting goals can be influenced by various factors that can change the perception of the priorities and importance of certain goals which, in turn, implies that the strategy depends on the relationship between priorities and opportunities. Other factors that may have an impact on a state's choice of a particular strategy are institutions and norms that regulate the relationship between actors, as well as the perception of actors in the international environment. Another important factor that determines the behavior of states in making a choice in favor of a particular strategy is national priorities and particular aspects of their determination at the domestic level. This determination is based on the methods of foresight which contribute to the adoption of effective national strategies. Such strategies often exist in the form of official documents (called White Papers in Norway) that provide a description of the possible ways of development of a state's policy in

the future with a specification of the main stages and possible ways to achieve the goals of a state.

The main functions of White Papers are the following:

1. Creation of a united and coordinated framework for defining main vectors of development of a state.
2. Serving as a basis for developing strategies and respective goals.
3. Providing background for making important decisions in difficult situations when prompt and effective actions are required.
4. Coordination of political and public activities of various actors in the political, economic and social fields.

As White Papers designate possible ways of development of the public interest and long-term priorities of a state in general, they can be regarded as the key element of foresight that leads to successful realization of the national policy goals.

3. FORESIGHT IN THE FOREIGN POLICY OF NORWAY

Traditionally, White Papers set the guidelines of national policy for a period from three to five years with an indication of stages the realization of which would lead to the fulfillment of the goals envisioned. While applying White Papers the government should pay the emphasis on the congruence of the temporal coordination of events and actions that leads to increasing dynamics and effectiveness of the strategy of a state. One of the examples of the realization of a state's strategy with the use of foresight is the formation of the foreign policy strategy of Norway. Since the end of the XX century, Norway has realized its diplomacy through "engagement policy" institutionalized within the framework of development cooperation. Being directed at promoting development, it involves efforts to address development issues, provide humanitarian assistance, protect human rights, maintain peace and mitigate the effects of climate change. The effective realization of Norway's vision of development policy depends on coherence between its political and diplomatic efforts and approach to cross-cutting issues. To achieve this, Norway's strategic documents focus on a need to elaborate a comprehensive set of policy guidance which would be sufficient enough for decisions on its international commitments and priority areas. Such elaboration is ensured by the implementation of foresight and respective continuity of main instruments constituting a policy framework of Norway. In order to illustrate this thesis, one can analyze the consistency between the Norwegian foreign policy documents on the development policy. For example, the key document of Norway's development policy titled "Common responsibility for Common Future" was further elaborated in the White Papers called "Setting the course for Norwegian foreign and security policy", "Partner Countries in Norway's Development Policy" and "Norway's Role and Interests in Multilateral Cooperation" (MFA, 2020). This subsequent elaboration of main foreign policy

instruments reflects the nature of the Norwegian priorities in different areas related to development cooperation. The consistent nature of this set of documents based on foresight of the foreign policy directions of a state contributes to strengthening the linkage between security, diplomacy, and development in the foreign policy strategy of Norway, which, correspondingly, increases its influence on the global development processes.

4. CONCLUSIONS

Foresight-related research is one of the instruments aimed to support decision-making in strategy formation and policy development. The foresight can be considered as a specific technology that provides for identifying priorities and developing strategic and program documents under conditions of high uncertainty in international relations. The key priorities of a state are its long-term interests realized through interaction with other actors of world politics. Such processes, as well as changes at the different levels of international communication contribute to the transformation of these priorities and the emergence of a set of the new ones. One can conclude from the experience and the foreign policy practice of states that most of them determine their priorities within the framework of their strategic development programs, which rarely have a long-term nature. Concurrently, while developing a foreign policy strategy, the determinants at the global, regional and domestic levels should be taken into account for more efficient use of available resources in the implementation of a state's goals. In the case of Norway, the comprehension of the conceptual foundations of the formation of the foreign policy strategy has proved to be effective in the development of its overall vision and effective foreign policy strategic management. Thus, the use of foresight as a means of predicting and influencing the future is necessary for the realization of developing the strategy for a state's development and aligning its policy with existing needs, which, in turn, leads to the enhancement of a state's positioning in the international arena.

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THE CHALLENGES POSED BY EXTERNAL INDEPENDENT EVALUATION AS A NOVELTY IN HIGHER EDUCATION IN UKRAINE - ADVANCED INFORMATION AND COMMUNICATION TECHNOLOGY, TRANSPARENCY, DECISION-MAKING

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ABSTRACT

The aim of this paper is to examine the challenges posed by the external independent evaluation and postgraduate admissions tests for studying a masters degree in universities and institutes in Ukraine. The researchers' starting point is focusing on the necessity of transformation of higher education system of Ukraine due to the COVID-19 pandemic. The authors observe the system of higher education in Ukraine and the situation related to establishing a quality assurance system in it. Ukraine has urgent need for development of educational services market based on modern ICT, while enhancing its competitiveness with the similar markets in Eastern and Central Europe. The main topic of research relates to the modernization of leading components of a higher education system in Ukraine, starting from the guidelines of preparation and implementation of online curricula, suitable to the needs of the labor market, and ending with tools aiming to advance the quality of higher education.

Keywords: External Independent Testing (Evaluation); Educational Services; Information and Communication Technology (ICT); Knowledge Transfer; Quality Assurance System; Universities.

JEL Classification: I2, I23, P4

1. INTRODUCTION, HYPOTHESIS, METHODOLOGICAL BASIS

In the twentieth century, ICT learning services became a particular segment of economic relations in highly developed and developing countries in the world. Any type of service sphere is dependent on ICT sector - a very powerful segment of social relations and economic development of the country, e.g. touristic, medical, educational, etc. (Bejunaru, 2019).

We would like to mention that despite the challenges of higher education reform respecting the European education system and standards, the relevant market for ICT educational services is blooming as a particular segment of Ukrainian economy due to the coronavirus pandemic (European Commission, 2020).

Notwithstanding, according to the Ranking on countries, conducted by *the World Economic Forum's* Global Competitiveness Index 2015-2016, Ukraine was ranked as the 34th out of 144 countries in higher education in 2016 (World Economic Forum, 2015).

In 2019 the Ukraine ICT adoption rank showed 78 out of 141, while the indicators of research and development (incl. quality of education and research (scientific publications), correlation between higher education and industry (R&D expenditures), level of scientific development's input into production (patent application) revealed Ukraine at medium positions (World Economic Forum, 2019).

This paper contains the research data generated in 2019 and in the beginning of 2020.

We seek to find the practical impact of ICT on higher education and vice versa. We want to see how the sphere of ICT education affect assured online knowledge transfer and educational migration movements.

Our first claim is that the number of students in Ukrainian universities decreases each year, and the competition between universities (institutes) within Ukraine and with foreign neighboring countries will increase. Therefore, all these innovations at the same time contribute to accelerating the integration of Ukraine into global and European educational space, updating the content of education and quality of education and are timely and necessary. On the other hand, they can lead to irreversible consequences for the university system in the country in general. Our second claim is that the COVID-19 Coronavirus crises has affected the development and financing of educational sphere, especially it resulted in reducing funds to be spent on quality control system at universities in Ukraine (resulting in lack of funds to buy new PCs for the stuff and students, licensed programs, to renovate devices and cable lines, to upgrade DNS servers, etc.).

Our overall hypothesis is that the remedy in this situation is the quality assessment system establishment in universities and institutes in Ukraine.

The quality of education shows proofs of being the one of current mechanisms of state regulation of the ICT education sector, but it is not just an

aim in state regulation. Primary importance of these processes lies precisely in enhancing competitiveness in the global scale, and this task is extremely difficult for Ukraine.

We seek to verify the above hypothesis in such a way – by means of the analysis of statistic data and empirical research we suppose that the topical issue is that Ukrainian regional universities and institutes become more vulnerable in these competitive conditions and demographic and migration situation in the context of European integration.

2. SUBJECTIVE AND OBJECTIVE SCOPE OF IMPROVING THE QUALITY OF ICT EDUCATION IN UKRAINE

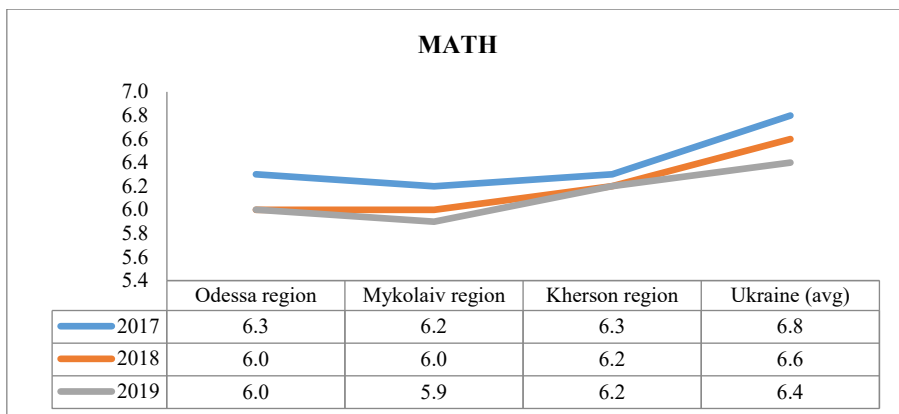
High-quality ICT education in universities (high schools) is impossible without thorough knowledge gained in general education at school. For example, in the period of 2017-2019 the results of the external independent testing in Mathematics and natural sciences show the lowest level of knowledge. This means a low quality of general education in Ukraine and in the South of Ukraine, in particular.

The results of our own research show that declarations differ from the realities of educational life. Unfortunately, academic integrity has not become pervasive in Ukraine's education system, including general and higher education. Responding to the questionnaire, 67% of students answered they first heard about the content of the concept of 'academic integrity' from university teachers, but only 28% of respondents first recognized the importance of fair learning (Bohach, 2019).

Data, provided by one of the main EWS session and presented in the OPENDATA of the Ukrainian Center for Educational Quality Assessment was thoroughly analyzed and we noticed following trend: in general 18.11% of test participants in Ukraine did not overcome the threshold without having passed the Mathematics testing, and in the South of Ukraine these indicators were even lower. In particular, in Mykolaiv region they did not overcome the threshold of 18.66% of the EIT participants, in Odessa - 20.94%, in Kherson - 19.3%. The test results in Physics were worse than the all-Ukrainian indicators; in particular 16.44% of participants in the Odessa region, 18.93% in the Kherson region did not overcome the Physics threshold.

Independently from the question of competitiveness within universities, we examined the quality of studying and the entrants' examination results in different regions in Ukraine and conducted comparative figures – see below.

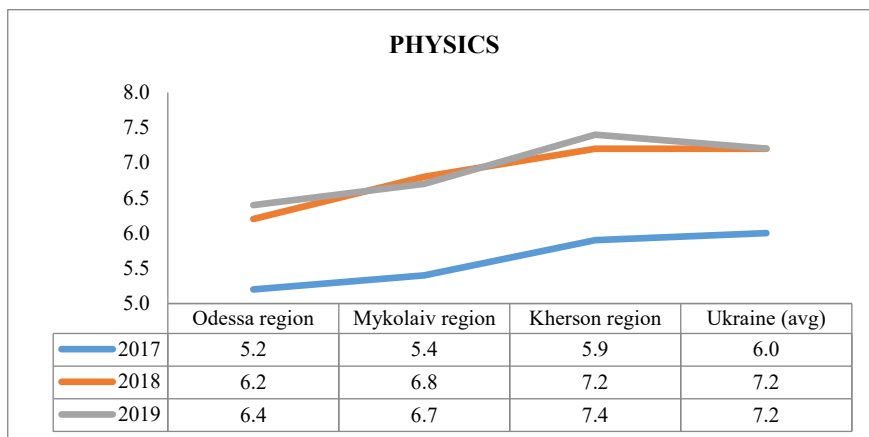
According to data provided by Ukrainian Center of Quality Assurance in Education (2020), Ukraine's average entrants' score in Mathematics were 6.8, in 2018 it decreased to 6.6, and in 2019 - to 6.4.



Source: compiled by the authors and based on OPENDATA (Ukrainian Center of Quality Assurance in Education, 2020)

Figure 1. Ukraine average and regional (Odesa, Mykolaiv, Kherson) university entrants' score in Mathematics

Figure 1 explains that in Southern Ukraine the average score ranges from 5.9 to 6.2 points, depending on the region and on the year. Such results of the EIT give rise to a concern, as the Ukrainian government had announced the development of the ICT industry to be in priority for the next years and it is impossible for any country to succeed in this field without a highly qualified specialists with a high-quality Mathematical training. Furthermore, Engineering Technologies and Economics also require high-quality Mathematical training.

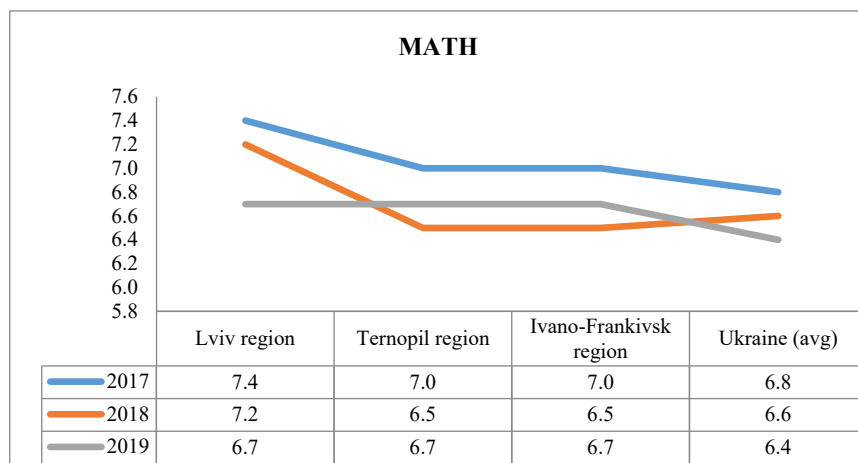


Source: compiled by the authors and based on OPENDATA (Ukrainian Center of Quality Assurance in Education, 2020)

Figure 2. Ukraine average and regional (Odesa, Mykolaiv, Kherson) university entrants' score in Physics

The quality of natural science studying in secondary school is seen as unacceptable. All over Ukraine, the average Physics exams score (Figure 2) was as such: in 2017 - 6.0; 2018 - 7.2; 2019 - 7.2, indicating a slight advancement in quality of the test results. Monitoring data reveal positive changes in Southern region, in particular in Kherson region, e.g. during the period of 2017-2019 the average Physics exams score increased significantly from 5.9 to 7.4, in Mykolaiv region - from 5.4 to 6.7, in Odesa region - from 5.2 to 6.4. However, the quality of studying Physics in Odesa region in 2019 remains too low in comparison to 0.8 points for Ukraine.

To our mind, in search for effective means of improving the quality of education, it is useful to compare the results of EIT from the above disciplines in the regions of Ukraine, in particular in Western regions. For example, the results of the EIT in Mathematics in 2019 in Ivano-Frankivsk, Lviv and Ternopil regions are higher in comparison to all-Ukrainian. However, the all-Ukrainian quality deterioration trend of Mathematics exams results represent the West of the country. While the Ukraine's average score decreased from 6.8 in 2017, 6.6 in 2018 to 6.4 in 2019, the Western region's average score has also worsened in three years period. The results of EIT in Lviv region demonstrate the highest quality of studying Mathematics (Figure 3).



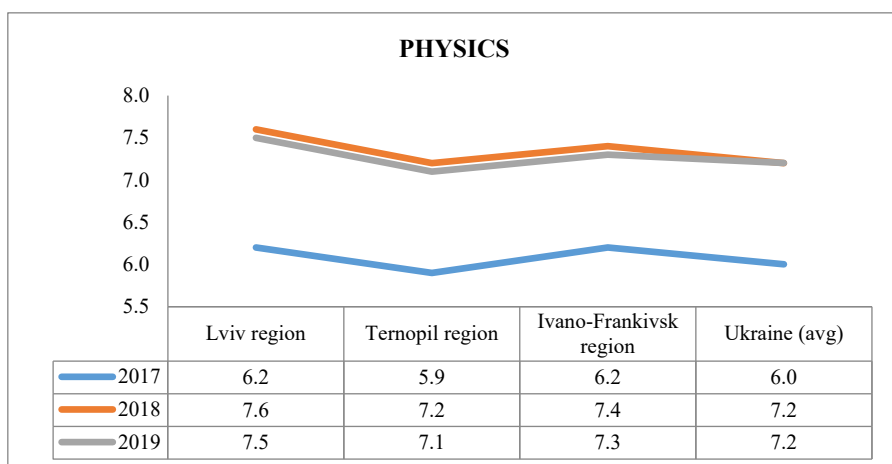
Source: compiled by the authors and based on OPENDATA (Ukrainian Center of Quality Assurance in Education, 2020)

Figure 3. Ukraine average and regional (Lviv, Ternopil, Ivano-Frankivsk) university entrants' score in Mathematics

During the three-years period of monitoring the quality of studying Physics in Western Ukraine, we ascertain a stable trend towards improving the results of testing. It had increased from a minimum score of 5.9 points in 2017 (in Ternopil

region) to a maximum score of 7.5 in 2019 (in Lviv region). The latter is higher than the all-Ukrainian result of 7.2 points, as can be seen in Figure 4.

In fact, in search for effective means of improving the quality of education, it is useful to compare the results of EIT from the above disciplines in the regions of Ukraine, in particular in Western regions. For example, the results of the EIT in Mathematics in 2019 in Ivano-Frankivsk, Lviv and Ternopil regions are higher in comparison to all-Ukrainian. However, the all-Ukrainian quality deterioration trend of Mathematics exams results is also supported in the West of the country. While the Ukraine's average score decreased from 6.8 in 2017, 6.6 in 2018 to 6.4 in 2019, the Western region's average score has also worsened in three years period. Seeing such trends, Ukrainian young ICT specialists and researchers actively immigrated to the USA and EU countries



Source: compiled by the authors and based on OPENDATA (Ukrainian Center of Quality Assurance in Education, 2020)

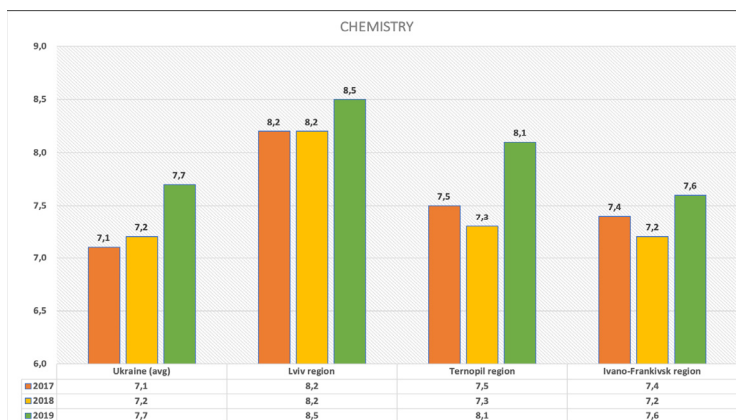
Figure 4. Ukraine average and regional (Lviv, Ternopil, Ivano-Frankivsk) university entrants' score in Physics

Chemistry exams results demonstrate an improving trend (Figures 5 and 6). In Ukraine, the average score increased from 7.1 in 2017 to 7.7 in 2019. Accordingly, the results also advanced in the studied areas: in Odesa and Mykolaiv by 0.9 points (up to 7.3), and in Kherson by 0.4.



Source: compiled by the authors and based on OPENDATA (Ukrainian Center of Quality Assurance in Education, 2020)

Figure 5. Ukraine average and regional (Odesa, Mykolaiv, Kherson) university entrants' score in Chemistry



Source: compiled by the authors and based on OPENDATA (Ukrainian Center of Quality Assurance in Education, 2020)

Figure 6. Ukraine average and regional (Lviv, Ternopil, Ivano-Frankivsk) university entrants' score in Chemistry

The administrative requirement for academics to improve the quality of their research has fostered professional relations with foreign scholars. However, the system of financial encouragement for R&D and participation in international scientific projects does not exist in most Ukrainian universities and institutes. Learning and development courses are also essential for improving young ICT specialists' skills (Gerrard, 2020).

Improving higher education budget funding remains a vital issue of higher education reform in Ukraine, which has to be preserved or reduced, according to current trends in migration, demographics, and reform of national education as a whole.

3. CONCLUSIONS AND RECOMMENDATIONS

In the aggregated data on how Universities should change to better cope with concurrency in EU markets using ICT technologies, it is easy to observe that at this stage of development, the quality assurance system at Ukrainian universities revealed following needs:

- academic/study overload for students and lecturers;
- lack of online teaching services usage;
- boost of work to be done by supervisory board and representatives who will protect the rights of students / doctoral students;
- strengthening the work with stakeholders (associations of graduates of universities, employers through surveys, questionnaires, interviews);
- need for promoting the social and scientific needs of students.

Unfortunately, the topical issue is that regional Universities have become the most vulnerable in these competitive conditions of demographic and migration changes in Ukraine. To think positively, we admit that all these innovations, on the one hand, contribute to accelerating the process of integration of Ukraine into global and European educational space, updating the content and quality of ICT education, and therefore are timely and necessary, but, on the other hand, lead to irreversible consequences for higher education system in the country.

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NEW DIMENSIONS OF BRAND ASSOCIATIONS: SEASON-INSPIRED ASSOCIATIONS

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ABSTRACT

The identity of a brand has become, especially in recent years, one of the most valuable values of a company, the existing brand associations in the minds of consumers being the basis for its formation. However, we can see that the same brand associations have been constantly used, the most preferred being the visual, emotional, associations with celebrities and personalities, and those based on the interests and activities carried out by potential clients.

In the context of these repetitive associations, through this paper we aim to bring to the fore new dimensions of brand associations, innovative and even strange at first glance, which have not been researched or used so far.

This research aims to test the challenging concept of associating a brand's personality with the four seasons, which could be very useful in marketing and beyond, opening multi-sensory gates of practical applicability in business.

Keywords: brand associations; season associations; abstract associations.

JEL Classification: D83, M31, M37, P46

1. INTRODUCTION

With the increasing popularity of social media platforms and the development of multiple channels that simplify shopping for consumers both online and offline (Kingsnorth, 2019, p. 56), there are more and more companies that have "invaded" these environments through the multitude of video and audio ads. and text, making it almost impossible to avoid exposure to dozens of advertisements daily (Nahai, 2014, p. 23).

However, few brands that use these promotion strategies manage to have a significant impact on the target market (Sexton, 2008, p. 18), most of which are very easy to forget or completely ignore, thus losing the opportunity to attract new customers (Imbriale, 2008, p. 121).

A brand represents the totality of associations that form in the minds of consumers when they think of a particular company, and simultaneously outlines an emotional connection with them (Wheeler, 2017, p. 19). Everything a consumer experiences with a company strengthens a certain personal perception of the brand (Godin, 2018, p. 16). This image has a very important role, as the customer will relate to it in the process of distinguishing a product or a company from their competitors.



Source: (Sexton, 2008)

Figure 1. The elements that shape a brand

Among the elements that shape the brand in the minds of consumers are: products or services, employees, actions taken by the company, its reputation,

customer expectations, customer service, prices and visual identity (logo, slogan, colors, images, fonts, etc.).

The reactions that potential customers have when a brand is presented to them for the first time can be significantly influenced by its image, for example, by the visual identity of the brand (Bailey and Milligan, 2019, p. 79). Creating the right brand identity can have a strong impact on trying to attract the right consumers for each company, thus becoming one of its core strengths (Dutton, 2001, p. 67).

Outlining a distinct personality for a brand will be the basis for strengthening a connection between business and customers on an emotional level, as consumers buy the benefits, not the characteristics of the products, the attributes representing a benefit offered or a satisfied need (Zlate, 2015, p. 211).

Moreover, a strong branding strategy will bring the company a multitude of benefits, including: customer recognition, customer loyalty, credibility, trust, consistency, communication of values (Olins, 2010, p. 68).

2. BRAND ASSOCIATIONS CREATED IN THE MINDS OF CONSUMERS

Brand associations are the connections that are created mentally between the brand and people, things, places and different emotions, and represent the attributes that the customer thinks of when talking about a particular brand (Salenbacher, 2017, p. 105).

When another factor appears in the minds of consumers, in addition to the actual image of a brand, and a connection is created between them, it is very possible that in the future they will be thought together (for example: efficient driving and BMW, sports performance and Nike, photo quality and Nikon, electricity and Tesla).

This is one of the main reasons why any company should strategically address the elements of branding, as they are going to be starting points in the process of forming partnerships at the level of potential customers. Brand associations can also be defined by the degree to which a product or service is recognized by consumers within the category of products, services or of which it is a part (Sexton, 2008, p. 61).

A consumer is more likely to choose to purchase the products or services of a brand that they associate with positive attributes. The way brand associations appear in our minds can be compared to the moment we think of a person well known to us (Shumate, 2016, p. 29). We will always visualize not only the physical appearance, but we will involuntarily think about the person's name, the appearance of the house in which he lives, how he makes us feel his presence, the hobbies he has, etc. (Shumate, 2016, p. 41).

Therefore, we can say that brands also “live” in our minds (Kaputa, 2010, p. 33), and when we talk about a brand we know we think without being aware of all the attributes we perceive about it, thus influencing our opinion about that brand

and the desire to purchase the products or services offered by it, to the detriment of existing competition in the market (Schawbel, 2015, p. 87).

3. BRAND ASSOCIATIONS INSPIRED BY THE SEASONS

A great way to create a brand with a strong and special personality is to outline its entire image based on one or two of the four seasons (spring, summer, autumn, winter).

Each season has a distinct personality, which provides the necessary basis for choosing a logo, texture pattern, colors and other style elements of the brand (Humberstone, 2015, p.11). Each of these four has close links with the natural environment and has a unique set of attributes that could become essential factors in creating associations in the perception of potential customers, both positive and some possibly negative (Pinker, 2015, p. 44).

Being complexly structured, the most effective approach to choosing the dominant season is to create a main connection between the brand and the season that best fits the values and aspirations that the brand represents, with the possibility of including a secondary season, with minor role in the process of shaping the personality of the brand in question.

Humberstone (2015, p. 117) said that defining the personality of a brand with the help of the seasons can provide an inspiring overview for any company, which tells a story and clearly conveys to consumers the values it represents. This can have a major impact on consumers coming into contact with the brand and can make them identify with it much faster and easier, already creating an emotional connection. It is very important for a brand to be unique and focus on this for potential customers (Miller, 2015, p. 49).

Deciding on the dominant season for a brand is often difficult, but can be simplified by a better understanding of the concept of brand personality. For example, it is more effective to look at the branding elements that will be outlined around the seasons as the traits that shape a person's personality. By making this analogy and thinking of the brand as a man, it is easier to perceive the attributes of a brand as the multitude of traits that make up a person's personality, thus offering the possibility to feel much closer to the brand and what it represents.

By offering the future brand a humanized side, the choice of a dominant season will be able to transform into the contour of the personality of a man who will be the representative of the brand.

Creating the personality of a brand using the four seasons is an unusual, innovative method by which brand associations could be used to effectively achieve the goals of companies, even practice being the one that shows us a new way, an alternative to strategies that have become classic.

4. RESEARCH DESIGN

The purpose of this research is to see how brand associations with the four seasons can be used in brand strategy and the generation of ideas for their fruition.

Objectives

Objective 1: Identification of perceptions regarding the association of human traits with the preferred season as well as with the hated season.

Objective 2: Identification of perceptions regarding the association of the features of the preferred season with the self.

Objective 3: Identification of perceptions regarding associating the features of the favorite season with the favorite brand as well as the least loved brand.

Objective 4: Identification of perceptions regarding associating favorite season features with a second favorite brand.

Objective 5: Identification of perceptions regarding associating the features of the preferred brand with the least loved brand.

Methodology

The online survey was the method used for this research, and was conducted on the Facebook and Instagram platforms. We chose these two social media platforms due to the high level of interaction that the people who make up the reference population of the study, respectively students, have with them, which allowed us to communicate efficiently and quickly with a significant number of respondents.

For this research, the selected reference population is those aged between 18 and 24, students, members of generation Z. They are digital natives, permanently connected to the online environment, socializing on dedicated platforms (Facebook, Instagram, etc.). They are exposed to a very large number of advertisements every day, the subconscious keeping data about a significant number of brands, and which attaches strongly to some of them, making them loyal customers.

Another important reason to justify the choice of the reference population is, from a psychological point of view, the fact that students had the opportunity to develop much earlier abstract thinking, thinking necessary in understanding the concept of brand associations.

The sample used for this research includes 200 people, who meet the conditions of the reference population, respectively to be students aged between 18 and 24 years. Given that the distribution of students by years of study or specializations is not relevant in this case, the sample consists of students of all specializations.

In terms of their gender, 95 people are male (48% of the total of 200 people) and 105 are female (52% of the total of 200 people).

From the point of view of the profile of the faculty where they are enrolled, most study at a faculty with a scientific profile, over 50% of students, followed by those enrolled in socio-human studies (20.4%), technical (14, 9%) and medicine (9%), the fewest students who were part of the sample being enrolled in faculties with arts profile (3%) and theological studies (1%).

The tool used in this research was the questionnaire, consisting of 5 sections, as follows:

The first section contains the description of the questionnaire and the first filter question, with a nominal scale, which was intended to prevent persons who would not have been included in the sample of this study from answering the following questions.

The second section consists of the second question filter with nominal scale, which fulfilled the same role as the first.

The third section consists of a question on a nominal scale which was the respondent's favorite season.

The fourth section was built in order to identify respondents' perception of the association of a season with a brand and itself. The section consists of 13 questions, of which 3 are with a nominal scale and 10 with an interval scale, with 10 evaluation possibilities. Although the questions are the same, depending on the season chosen in the question in the previous section, the specific features of each season change. In this section, the respondent is invited to evaluate the association of some features with his favorite season, with himself, and with two favorite brands. The respondent will also associate his or her favorite season with a color palette and logo, and assess the extent to which the season and brand least loved by him or her can be associated with the aforementioned traits.

The fifth section, the final one, contains 3 identification questions, respectively the sex of the respondent, and the profile of the faculty where he is enrolled and the existence of a job.

5. RESEARCH FINDINGS

Objective 1: Identification of perceptions regarding the association of human traits with the preferred season as well as with the hated season.

In order to obtain the results necessary to achieve this objective, we considered questions 2 ("To what extent do all these features taken together characterize the spring season? (1 - not at all; 10 - in total)") and 12 ("To what extent can the hated season be characterized by the same traits mentioned above? (1 - not at all; 10 - totally)") both being questions with scale type range from 1 to 10. The 6 traits are different depending on the preferred season selected by the respondent. a table with a weighted arithmetic mean of the answers received to question 2, for each season, thus making it easier to see the difference between respondents' perceptions of human traits and their preferred season, respectively the hated season (Tables 1 and 2).

Table 1. Weighted arithmetic mean of perceptions regarding the association of human traits with the preferred season

| Season | Average perceptions of the association of human traits with the preferred season |
|--------|----------------------------------------------------------------------------------|
| Spring | 8.69 |
| Summer | 8.63 |
| Autumn | 8.84 |
| Winter | 8.61 |

Source: computed by the authors

Table 2. Weighted arithmetic mean of perceptions regarding the association of human traits with the hated season

| Season | Average perceptions of the association of human traits with the hated season |
|--------|------------------------------------------------------------------------------|
| Spring | 3.82 |
| Summer | 3.61 |
| Autumn | 3.61 |
| Winter | 3.56 |

Source: computed by the authors

Following the analysis of the results obtained (Tables 1 and 2), we can see that the respondents considered that there is a very strong link between the human traits mentioned in the requirements and the preferred season selected by each of them, thus outlining a first step towards creating a brand personality. Moreover, the perceived differences between the two seasons are amplified by the fact that over 90% of respondents also believe that the same traits mentioned above cannot be associated with the season they hate.

At the same time, following the application of the Pearson Correlations statistical test, we can say that the connection between the two associations is an inverse and strong one (-0.73 , sig. 0.120). We can say that this correlation between the associations of human traits with the preferred season, respectively with the hated season, is a significant one.

Objective 2: Identification of perceptions regarding the association of the features of the preferred season with the self.

To find out to what extent the respondent can associate himself with the traits of the preferred season I will consider the question number 3 ("To what extent could you be associated with these traits taken together? (1- not at all; 10- totally"), Question with interval type scale with answer variants from 1 to 10.

Over 85% of the answers (Table 3) are related to very high intensity associations (8-10), which shows the strong association that respondents say they have between themselves and the traits that characterize the personality of their

favorite season. It is also important to note that 0% of those who answered this question consider that there is no association between them and the features of the preferred season.

Table 3. Weighted arithmetic mean of perceptions regarding the association of the features of the preferred season with the self

| Season | The average perceptions regarding the association of the features of the preferred season with the self |
|--------|---------------------------------------------------------------------------------------------------------|
| Spring | 8.45 |
| Summer | 8.66 |
| Autumn | 8.85 |
| Winter | 8.91 |

Source: computed by the authors

Objective 3: Identification of perceptions regarding associating the features of the favorite season with the favorite brand as well as the least loved brand.

To successfully achieve this goal, it is necessary to analyze the answers received to questions 5 (“To what extent do these traits together characterize your favorite brand? (1 - not at all; 10 - totally)”) and 13 (“13 To what extent can the same features characterize a brand you hate? (1 - not at all; 10 - totally)”), both being interval questions.

We can see both the fact that respondents (Tables 4 and 5), in proportion of over 83%, significantly associate the features of their favorite season with their favorite brand, and the fact that over 90% of them do not associate the same features of their favorite season with the brand they love less.

At the same time, following the application of the Pearson Correlations statistical test, we can say that the connection between the two associations is an inverse and strong one (-0.71 , sig. 0.037), resulting in this correlation between the association of favorite season features with favorite brand, respectively with the least loved brand is a significant one.

Table 4. Weighted arithmetic mean of perceptions regarding the association of the features of the preferred season with the favorite brand

| Season | Weighted arithmetic mean of perceptions regarding the association of the features of the preferred season with the favorite brand |
|--------|-----------------------------------------------------------------------------------------------------------------------------------|
| Spring | 8.47 |
| Summer | 8.45 |
| Autumn | 8.47 |
| Winter | 8.51 |

Source: computed by the authors

Table 5. The average perceptions regarding the association of the features of the favorite season with the least loved brand

| Season | The average perceptions regarding the association of the features of the favorite season with the least loved brand |
|--------|---------------------------------------------------------------------------------------------------------------------|
| Spring | 3.12 |
| Summer | 3.13 |
| Autumn | 2.92 |
| Winter | 2.91 |

Source: computed by the authors

Objective 4: Identification of perceptions regarding associating favorite season features with a second favorite brand.

For the fourth objective I will proceed similarly to the second objective, and I will make a graph with the distribution of the answers received to the question with number 6 ("To what extent can a second favorite brand be characterized by the same features? (1 - not at all; 10 - totally)") and a table with the weighted arithmetic averages obtained for each season.

Table 6. The average perceptions regarding the association of the features of the favorite season with a second favorite brand

| Season | The average perceptions regarding the association of the features of the favorite season with a second favorite brand |
|--------|-----------------------------------------------------------------------------------------------------------------------|
| Spring | 8.51 |
| Summer | 8.3 |
| Autumn | 8.48 |
| Winter | 8.43 |

Source: computed by the authors

Most of the respondents (Table 6), over 83% of their total, gave grades between 8 and 10 to the level of association of their favorite season's features with a second favorite brand. This means a confirmation of the answers received to question 5 ("To what extent do these traits taken together characterize your favorite brand?") (1 - not at all; 10 - totally)". Moreover, the certainty of the results obtained is all the more significant as the answers in the range 0 - 5 are 0 in number.

Objective 5: Identification of perceptions regarding associating the features of the preferred brand with the least loved brand.

In order to achieve this objective, respondents were asked to express their disagreement with the statement of question 9, "The features associated with my favorite brand can NOT be associated with the brand I like the least.". (1- total

disagreement; 10- total agreement)”. The table below represents the weighted arithmetic mean of the answers obtained for each season.

Table 7. Weighted arithmetic mean of perceptions regarding the association of the features of the preferred brand with the least loved brand

| Season | The average perceptions regarding the association of the features of the favorite brand with the least loved brand |
|--------|--------------------------------------------------------------------------------------------------------------------|
| Spring | 8.67 |
| Summer | 8.28 |
| Autumn | 8.5 |
| Winter | 8.76 |

Source: computed by the authors

The analysis of the results of this question (Table 7) confirms the sincerity of the answers received to question number 13 (“To what extent can the same features characterize a brand you hate? (1 - not at all; 10 - totally)”). Over 85% of respondents agree that the features associated with their favorite brand cannot be associated with even the least beloved brand. Consequently, the number of responses in the range 0 - 4 is zero, and a small number of respondents, of about 10%, only partially agree or indifferent to the statement in question.

Other information relevant to this research, which is not part of the main objectives:

- Summer is the preferred season of over 45% of the total students who answered this questionnaire, while the other 3 seasons obtained a similar percentage in the ranking: spring (19.6%), autumn (16.7%) and winter (14.7%).
- In question 7 respondents were asked to assign a color palette to a brand built on the basis of associations with their favorite season. The 4 response variants were constructed in accordance with the literature, each representing one of the 4 seasons. Over 75% of people have identified the color palette corresponding to their favorite season.
- Following the model of the previous question, question number 8 asked respondents to assign a suitable logo to a brand built on the basis of associations with their favorite season. Also, the 4 variants presented were chosen based on the literature, each representing one of the four seasons. Over 77% of respondents selected the logo for their favorite season.
- Winter and autumn are the least pleasant seasons for respondents, with over 45% of responses ranking them last.
- Over 65% of respondents confidently state that they tend to do more shopping during their favorite season. Only 7% strongly disagreed with this statement, and a very small percentage, around 5%, were neutral.

6. CONCLUSIONS AND LIMITATIONS

In the research, we aimed to identify, as a first step, the respondents' perception regarding the association of human traits with their favorite season, as well as with the hated season. We noticed that the majority of respondents, over 95%, considered that there is a strong link between their favorite season and representative human traits, selected for each of the four seasons, based on the literature. On the other hand, the same features did not signal the presence of a connection with the season they detest, which indicates that there is a clear distinction between the two terms compared in the minds of respondents, and that using these features we can form, based on them, new brand associations.

Now that I have reached the goal of identifying perceptions about the association of favorite season traits with the self, I can say that there is a significant link between how respondents view their favorite season and how they look at themselves. The answers received show that at the psychological level the consumer has certainly been associated with his favorite season, considering largely that they share the same traits. This tells us that there is the possibility of making the same type of association with a favorite brand.

We also aimed to identify the respondents' perceptions regarding the association of the features of their favorite season with their favorite brand, as well as with the brand least loved by them. I noticed again this time a large majority of the answers that claim that there is a strong connection between the favorite season and the favorite brand, and also an almost non-existent association between the favorite season and the least beloved brand. Therefore, the association of a brand inspired by the season according to the personality of each company will lead to the creation of appropriate associations in the minds of consumers.

Once the objective of identifying perceptions regarding the association of the characteristics of the favorite season with a second favorite brand is reached, we can say that the link created psychologically by associating a season with a brand is very strong, in which the respondent did not associate the season with another the second favorite brand being 0.

Ultimately, we aimed to identify the perception of associating the features of the favorite brand with the least beloved brand, and we noticed this time a very strong association created in the minds of respondents with their favorite brand, respectively 0% association of the same features with the least beloved brand. After achieving this goal we can say that brand associations with a season are useful and can be successfully implemented, managing to build emotional connection with consumers of the product or service that a company sells, this being more than obvious from the contrast of the results obtained when the two brands were compared.

Limitations

The main limitation present in this study is the ignorance or refusal of the request to complete the questionnaire. Given the difficult period of the pandemic we faced in the spring of this year, the vast majority of people's activity was transferred to the online environment, requiring their presence, in this virtual form, even more than before. As a result, on social media platforms, and not only, people have been "surrounded" by information from all sides, the simple request to complete a questionnaire can become extreme, leading to rejection.

A second limitation is represented by the uncertainty that the people were sincere in the process of completing the questionnaire, this being almost impossible to control or verify in the current situation.

The third limitation, with a significant importance, was related to the abstract thinking, absolutely necessary in this study in order not to have a brake in understanding the questions. Given that a person develops this type of thinking around the age of 35, it has been a challenge to find the reference population that meets all requirements. This was the reason for choosing students as a reference population, as they have the ability to develop their abstract thinking and understand the key concepts in the questionnaire much earlier than other people of the same age, but without higher education.

7. MANAGERIAL IMPLICATIONS

The idea of researching new dimensions of brand associations, respectively the associations inspired by the seasons, comes from practitioners. Although they are an extremely valuable asset of a company, brand associations have become over the years repetitive, they are built primarily on visual, emotional, celebrity and personality associations, and associations based on the interests and activities of consumers who make up the target market of each company.

In order to introduce new, innovative brand associations that have not been used so far, I have chosen to research the way in which brand associations with the four seasons can be used in brand strategy and to generate ideas for the fruition of their.

Associations with a season can be created with the help of human features, but strong associations are certainly created between the season and itself, and especially with favorite brands. The research results show that a person finds himself in his favorite season and, moreover, considers that there are certain traits of his personality that he can transfer to the season itself. Using abstract thinking, respondents stated that they can associate the same traits with their favorite brands, with whom they have built an emotional connection over time and to whom they have become loyal customers.

Therefore, from the point of view of utility, this research comes to the aid of any company that, from the beginning, will be able to create its brand identity using the association with one of the four seasons, with which it fits best, after

analyze all four options. In this way, it will be able to successfully communicate and transmit to the consumers that make up its target market the message and values that the company wants to represent, outlining for them an inspiring overview, which tells a story. This will have a major impact on consumers who come in contact with the brand, and can make them identify with it much faster and easier, already outlining an emotional connection.

Moreover, this study can be used by design firms, advertising agencies, the marketing team of any existing brand or to be launched, and even by entrepreneurs at the beginning of the road, or those who want a change at the level of their brand identity.

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INTELLIGENTLY CONNECTED OBJECTS. INTELLIGENTLY CONNECTED BRANDS

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ABSTRACT

Our brain is making associations every day without us realizing it, therefore, there is very hard to be conscious about them and how they influence us. The purpose of the research is represented by the comparison of the networks of objects and brands. The main objectives of this research are to explore the neural networks that are formed when hearing a word that designates an intelligent product/brand. By conducting a qualitative research, we found out more about attitudes, feelings, emotions, motives, behaviors and last but not least, personal experience. The main addressed concepts are the brand concept, neural networks and how they are formed, mind mapping and how it is used and neuromarketing. Our results show that specialists are connecting objects with words that are more relatable to their field of study.

Keywords: neural network; mind map; brand; neuromarketing.

JEL Classification: M310, C91, D83, D91

1. FROM THE SEMANTIC FIELD TO THE MENTAL MAP. THE PERSPECTIVE OF NEUROMARKETING

We live in a world that is constantly changing. Technology is advancing at a rapid pace. Activities in all areas have begun to be automated. We are in the age of speed and knowledge. Man has power because he is behind all the processes. It all started a long time ago, when man appeared on Earth. From its inception until now, humanity has undergone major series of transformations. The biggest challenge is to create a smart world.

The appearance of man on Earth has led to the formation of everything around us. Man is an amazing being who has the ability to create things and store information. Neural networks formed with human appearance. People intelligently associate words to form neural networks. Nowadays, special software has been developed for creating virtual networks.

The neural network is expressed using semantic fields. The research of neural networks was done for the first time in Psychology. In the field of Marketing, neural networks have not been sufficiently explored. According to experts, people accumulate information in memory in the form of neural networks. The representation of neural networks through graphs and diagrams helps us to analyze the categories of associations. Băhnuț (2011, p. 106), a linguist, states that the network of associative relations of a word is, in the end, nothing more than a fragment of our set of concepts through which we reflect reality.

Semantic fields are made up of words intelligently united by meaning and logic. The concept of "semantic field" appeared in 1924 and the theory of semantic fields developed in the twentieth century. Semantic fields together with other fields form a neural network. The connections between the semantic fields are based on the meaning of the words and their proximity in relation to the created neural network (Buzan and Buzan, 2011, p. 66).

Semantic fields are created based on common, related or close characteristics. They can be made up of categories such as: colors, locations, feelings, names of people, objects, furniture, flowers, animals, fruits, vegetables, countries, buildings, time, personalities, symbols, brands, family, nature, clothing, love, etc.

Neural networks are created in many ways, for example when hearing a word or visualizing an object / product. One important thing to note is that a neural network can bring together several competing objects or brands (Chan *et al.*, 2018, p. 608). Thus, researchers can find out what words people associate with their product or brand (Maurya and Mishra, 2012, p. 128). They can also calculate the occurrence frequencies for the mentioned words. The frequency of appearance for the mentioned words helps us to find out people's perceptions regarding the product, respectively our brand. A positive perception can improve the brand image (Keller, 2003, p. 596).

It was found that associations have a special importance in the decision to compare an object. If the associations convey a sense of security, a positive

emotion, then the value of the object increases and buyers are influenced to purchase the object (Chaser and Wolfe, 2010, p. 105). Therefore, knowing the associations is a benefit for both the consumer and the company. In conclusion, a neural network is formed as follows (Kaplan *et al.*, 2017, pp. 256-259):

1. It starts with a basic word.
2. Mention words associated with the keyword.
3. Signature fields are created for the mentioned words.
4. The network is represented.

According to Kleparski and Rusinek (2007, p. 191), associative networks are linked by a common root element. Associative networks are networks not connected to the Internet but connected by utility, developing mental associations. In other words, the basis of any associative network is a common word, intelligently united in the brain with all the other words. Words are cleverly united by meaning, logic and sometimes by form. According to those specialists, associative networks help the consumer to discover perceptions about a brand or product.

Laughlin and Sejnowski (2003, p. 1873) state that neural networks can adapt to circumstances, assemble, self-calibrate, and store information by changing their properties according to experience. In other words, experience is an important element in building neural networks. A positive experience can increase the value of the brand in the eyes of consumers.

Most studies based on neural networks started with the neural network created by Aaker in 1996 (Aaker, 1997, p. 351). The network was designed for the McDonald's brand, leading people to associate this brand with different words that can be grouped into different categories. Creating associative networks helps us to identify people's perceptions. Identifying perceptions helps us improve our brand image (John *et al.*, 2006, p. 551).

The notion of mental map (cognitive map) was first used in 1991. According to specialists, mental maps are the main way to explore people's memory. The use of mental maps helps us to identify associations and is also a way to find out what connections are formed. In general, mind maps are designed for a safe object / brand. People can create associations with different features, colors, words, products, signs or logos.

Neuromarketing helps to understand the responses of the human brain to different stimuli (symbols, packaging, etc.). Neuromarketing also helps marketers to help them better understand consumer behaviour (Pop *et al.*, 2014, p. 15). Researchers at the University of Massachusetts Medical School are the first to show that it is possible to change an animal's behavior through changes in neural communication.

According to specialists, neuromarketing was formed by combining two areas: "consumer behavior and neuroscience" (Miljkovic and Alcakovic, 2010, p. 279). Neuromarketing is also called consumer neuroscience or consumer

neuroscience. The field of neuromarketing focuses on the discovery of neural connections in the brain.

One way to create a neural network is by visualizing an object or product. The connections between words are made through different associations, which by connecting them together form a network of information based on semantic fields or word categories. Mind maps are the main way to explore people's memory. The use of mental maps helps us to identify associations and is also a way to find out what connections are formed (Alexe, 2017, p.39), while neuromarketing is the analysis of brain activity and unconscious reaction of customers to products and advertisements (Avis, 2012, p. 91). These concepts are linked with each other in a way that they are based on each other, neural networks would not exist without semantic fields and we can't really get to know more about consumer behaviour if we don't talk about neuromarketing (Lee *et al.*, 2006, p. 182).

2. DATA & RESEARCH METHODOLOGY

The **research problem** is represented by the process of finding the neural networks that are created between objects and brands intelligently connected for students at the Faculty of Economics and Business Administration in Iasi, year 3, specializations Marketing and Economic Informatics aged 21-24 years.

The **purpose** of the research is represented by the comparison of the networks of objects and brands between the specialists from Marketing and the specialists from Economic Informatics.

The main **objectives** of this research are:

- O1. Exploring the neural networks that form when you hear the word laptop.
- O2. Exploring the neural networks that form when you hear the Apple brand.
- O3. Exploring the neural networks that form when you hear the phrase "Apple laptop."
- O4. Exploring the association construct.

Methodology - Stage 1: Survey

The research started with a survey composed of 4 respondents, 2 females and 2 males, students from the Faculty of Economics and Business Administration, from year 3, Marketing specialization. The purpose of this survey was to generate the object and brand for which the research will be based on.

The survey consisted of 2 requirements:

- Please list the first 10 objects that come to mind and that are from your home.
- Please tell me the first brand that comes to mind for each item mentioned.

Stage 2: Extraction

The words that were not repeated were removed and we kept only the ones that were common. 7 objects were repeated. The objects repeated by all respondents are chair, table, TV, laptop, desk, bed, refrigerator. These objects were written on the tickets and then put in a jar. A.R extracted the note that said

LAPTOP. The 4 laptop brands respectively Apple, Asus, Lenovo and Hp were written on the tickets and placed in a jar. A student extracted the APPLE brand. The research was conducted based on the LAPTOP object and the APPLE brand.

Stage 3: The actual research

The research we applied was qualitative research. We chose this type of research because the answers given by the interviewed students refer to attitudes, feelings, emotions, motives, behaviors and last but not least to personal experience. People are different and each person assigns a different value to personal experiences.

The method we used was the semi-structured interview using the Delphi Method. This method involves polling the public represented by specialists, in our case are the students from the Faculty of Economics and Business Administration in Iasi, from year 3, specializations Marketing and Economic Informatics. These students were designated as specialists because they are more knowledgeable by the nature of the object analyzed (laptop) and brand analysis than students in year 2, respectively in year 1 or compared to colleagues in other specializations.

The tool used was the semi-structured interview that we applied both online and offline. Through this interview we aim to find out the opinions and personal experiences of the interviewed students in order to better understand the significance of the answers.

The target population consists of students from the Faculty of Economics and Business Administration in Iasi, from year 3, specializations Marketing and Economic Informatics. The sample we considered was composed of 20 respondents, students from the Faculty of Economics and Business Administration in Iasi, from year 3, 10 from the Marketing specialization, 10 from the Economic Informatics specialization, divided into 5 men each and 5 women. We chose the students from these specializations due to the nature of the topic and the object. Marketing students are knowledgeable people in marketing who study their connections, connectivity and meaning. The students from the Economics specialization use the laptop in a higher percentage than the other specializations because this specialization studies the field of informatics, which involves the use of the computer.

Operationalization

Delphi method - following the Delphi method interview, we generated words corresponding to the first objective.

Step 1: Collect words and brands. Specialists were asked to meet the following requirements:

1. The first 10 words that come to mind when you hear the LAPTOP object.
2. The first 10 words that come to mind when you hear the object LAPTOP stating that the first word is a BRAND.
3. The first 10 words that come to mind when you hear the APPLE brand.

4. The first 10 words that come to mind when you hear the phrase "LAPTOP APPLE".

Step 2: The specialists suggest semantic fields for the words and brands from Step 1. After all the data was collected, the specialists divided them according to the semantic fields they belong to. 15 categories of words have been created.

The categories of words suggested by specialists are:

- **Furniture:** desk, bed, table, chair, swing.
- **Food:** coffee, chips, milk, cereals, juice, tea, sweets.
- **Computer:** screen, battery, memory, keyboard, mouse, design, size, ports, RAM, editing, web, Skype, antivirus, Word, Excel, graphics, processor, touchpad, cooler, Power Point, Photoshop, capacity, stick, programs, display, battery, charger, photo, video, resolution, board, gaming, accessories, macbook, touchscreen, laptop, sound, diagonal.
- **Entertainment:** TV show, movies, music, games, shopping.
- **Brands:** Apple, Netflix, Asus, Huawei, Razer, Lenovo, Intel, Samsung, Facebook, Google, Hp, Nescafe, Coca Cola, eMAG, Starbucks, Microsoft, Acer, Dell, Davidoff, Pringles, Instagram, Jacobs, Jysk, Mercedes, IBM.
- **Iași:** Iași, Copou, dormitory, C3, job, Palas, Cărturești.
- **Faculty:** faculty, projects, information, homework, logistics, seminar, problems, colleagues, formulas, attendance, community, thesis, books, presentations, conversations, FEAA, break, courses, data, worksheets, applications, information, communication, notebooks, tests, friends.
- **IT:** internet, technology, gadget, intelligence, IT, innovation, technology, programmers, future.
- **Colors:** black, white, pink, gold, gray, silver.
- **Features:** small, compact, portable, thin, flawless, attractive, different, new, interesting, pleasant, elegant, modern, complicated, multi-tasking, perfect, beautiful, complex, good, expensive, unique, expensive, simple, popular, original, special, valuable.
- **Criteria:** speed, strength, weight, durability, speed, fineness, precision, clarity, performance, quality, premium, power, safety, trust, respect, improvement, image, status, originality, reliability, attractiveness, functionality, luxury, creativity, security, investment, money.
- **Countries:** America, USA, California.
- **Symbols:** Steve Jobs, apple, garage.
- **Friends:** Andreea, Kiva, Ana.
- **Items:** tablet, watch, joystick, phone, AirPods, headphones, watch, iPhone, iPad, beats, mug.

3. EMPIRICAL STUDY

The interview consisted of 2 parts. In the first part we aim to explore the neural networks that are formed when we hear some words and in the second part the personal meaning expressed through emotions, feelings, motives.

Objective 1: Exploration by Delphi method of neural networks created by hearing the word LAPTOP.

To achieve the goal, we collected data and created tables for the words mentioned by specialists. We have created tables for word categories suggested by specialists. Each category was highlighted by a color. We created graphs with percentages by word categories. For a better understanding we kept the colors used in the tables and used them to create graphics. We created graphs that highlight the connections of neural networks.

The boxes colored by pink and blue signify the words that have been repeated. Through the color pink we highlighted the words of female specialists. Through the color blue we highlighted the words of male specialists. The colored lines in the graphs of neural networks represent the specialists.

The results (Tables 1 and 2) show that female Marketing specialists explain the word laptop with words like college, office, projects, music, series, and Apple. The categories of words that have been mentioned most often are Faculty, Computer and Furniture. According to the chart below, it can be seen that 26% of the words of female Marketing specialists are part of the Faculty category, 20% Food and Furniture and 12% Entertainment. With a lower frequency of occurrence, words from the Characteristics and Objects categories were mentioned.

Table 1. Words resulting from hearing the object laptop. Marketing. Feminine

| Criterion No. | A.R | H.A | N.I | N.M | S.M |
|---------------|-------------|-----------|----------|----------|------------|
| 1 | coffee | Apple | bed | desk | faculty |
| 2 | desk | portable | chips | table | logistics |
| | | | | | |
| 3 | screen | keyboard | sweets | chair | seminar |
| 4 | battery | mouse | TV shows | mug | problems |
| 5 | faculty | design | music | Asus | table |
| 6 | internet | dimension | friends | Huawei | colleagues |
| 7 | projects | desk | games | TV shows | Excel |
| 8 | TV shows | ports | projects | swing | formulas |
| 9 | memory | RAM | Netflix | music | attendance |
| 10 | information | projects | Apple | bed | chair |

Source: computed by the authors

**Table 2. Categories of words resulting from hearing the object laptop.
Marketing. Feminine**

| Criterion No. | A.R | H.A | N.I | N.M | S.M |
|---------------|---------------|-----------|---------------|---------------|-----------|
| 1 | food | brand | furniture | furniture | faculty |
| 2 | furniture | features | food | furniture | faculty |
| 3 | computer | computer | food | furniture | faculty |
| 4 | computer | computer | entertainment | object | faculty |
| 5 | faculty | computer | entertainment | brand | furniture |
| 6 | IT | computer | faculty | brand | faculty |
| 7 | faculty | furniture | entertainment | entertainment | computer |
| 8 | entertainment | computer | faculty | furniture | faculty |
| 9 | computer | computer | brand | entertainment | faculty |
| 10 | faculty | faculty | brand | furniture | furniture |

Source: computed by the authors

The categories of objects mentioned are faculty (26%), furniture and computer (20%), entertainment (12%), brands (10%) and IT, feature, object (2%).

Male Marketing specialists (Tables 3 and 4) explain the laptop object with words like mouse, keyboard, processor, touchpad, technology, and projects. Regarding the percentage, 36% of the words of the specialists are part of the Computer category and with equal percentages of 16% we find words from the categories Faculty, Entertainment and IT.

Table 3. Words resulting from hearing the object laptop. Marketing. Masculine

| Criterion No. | A.A | B.B | C.D | H.V | N.I |
|---------------|------------|------------|-------------|--------------|-----------|
| 1 | keyboard | technology | Asus | technology | projects |
| 2 | mouse | projects | Intel | music | games |
| 3 | screen | faculty | graphics | gadget | mouse |
| 4 | technology | Word | processor | Internet | keyboard |
| 5 | Asus | thesis | mouse | intelligence | Skype |
| 6 | games | movie | keyboard | games | community |
| 7 | editing | games | touchpad | movie | thesis |
| 8 | movies | internet | cooler | keyboard | antivirus |
| 9 | Razer | keyboard | performance | Apple | faculty |
| 10 | web | Lenovo | technology | quality | books |

Source: computed by the authors

**Table 4. Categories of words resulting from hearing the object laptop.
Marketing. Masculine**

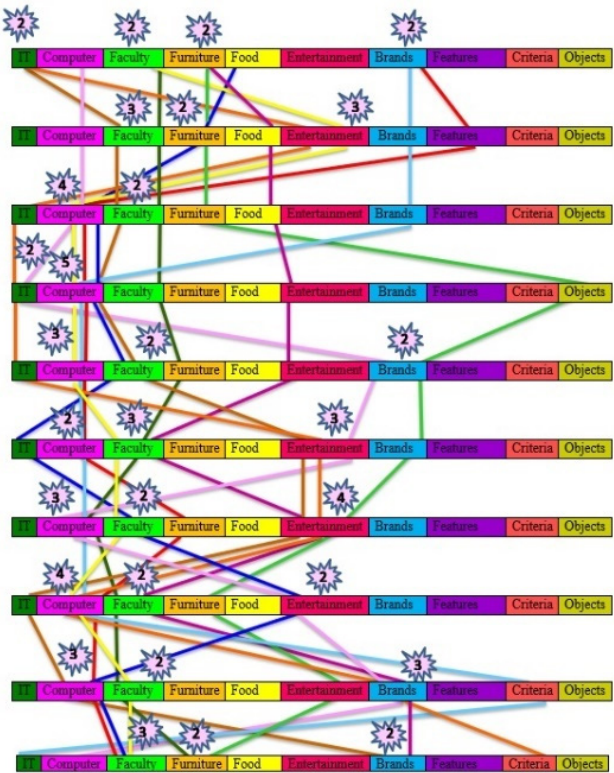
| Criterion No. | A.A | B.B | C.D | H.V | N.I |
|---------------|----------|----------|----------|---------------|---------------|
| 1 | computer | IT | brand | IT | faculty |
| 2 | computer | faculty | brand | entertainment | entertainment |
| 3 | computer | faculty | computer | IT | computer |
| 4 | IT | computer | computer | IT | computer |

| Criterion No. | A.A | B.B | C.D | H.V | N.I |
|---------------|---------------|---------------|----------|---------------|----------|
| 5 | brand | faculty | computer | IT | computer |
| 6 | entertainment | entertainment | computer | entertainment | faculty |
| 7 | computer | entertainment | computer | entertainment | faculty |
| 8 | entertainment | IT | computer | computer | computer |
| 9 | brand | computer | criteria | brand | faculty |
| 10 | computer | brand | IT | criteria | faculty |

Source: computed by the authors

The categories of objects mentioned are computer (36%), faculty, IT, entertainment (16%), brands (12%), barnds (10%) and criteria (4%).

The graph below (Figure 1) designates the neural network created at the hearing of the laptop object for the specialists from the Marketing specialization with the mention of the occurrence frequencies.



Source: computed by the authors

Figure 1. The neural network created when the LAPTOP object is heard. Marketing.

We can observe from the tables below (Tables 5 and 6) the fact that 32% of the words of the female Economic Informatics specialists are part of the Faculty category. Repeated words in this category are projects, thesis, faculty, and homework. Most specialists explain the object of the laptop in words that are part of the categories Faculty, Furniture and Computer.

**Table 5. Words resulting from hearing the laptop object.
Economic Informatics. Feminine**

| Criterion No. | H.B | I.T | L.R | T.O | T.M |
|---------------|-------------|------------|----------|---------------|-------------|
| 1 | Apple | Iași | desk | thesis | information |
| 2 | faculty | Copou | thesis | projects | table |
| 3 | complicated | dormitory | table | homework | desk |
| 4 | portable | C3 | Apple | Netflix | faculty |
| 5 | design | colleagues | bed | Power Point | design |
| 6 | projects | TV shows | milk | faculty | projects |
| 7 | technology | faculty | cereal | technology | memory |
| 8 | table | thesis | faculty | presentations | capacity |
| 9 | desk | projects | projects | TV show | screen |
| 10 | chair | homework | TV show | shopping | stick |

Source: computed by the authors

**Table 6. Categories of words resulting from hearing the laptop object.
Economic Informatics. Feminine**

| Criterion No. | H.B | I.T | L.R | T.O | T.M |
|---------------|-----------|---------------|---------------|---------------|-----------|
| 1 | brand | Iași | furniture | faculty | faculty |
| 2 | faculty | Iași | faculty | faculty | furniture |
| 3 | feature | Iași | furniture | faculty | furniture |
| 4 | feature | Iași | brand | brand | faculty |
| 5 | computer | faculty | furniture | computer | computer |
| 6 | faculty | entertainment | food | faculty | faculty |
| 7 | IT | faculty | food | IT | computer |
| 8 | furniture | faculty | faculty | faculty | computer |
| 9 | furniture | faculty | faculty | entertainment | computer |
| 10 | furniture | faculty | entertainment | entertainment | computer |

Source: computed by the authors

The categories of objects mentioned are faculty (32%), furniture (16%), computer (14%), Iași, entertainment (8%), food, feature, IT (4%), color and criteria (2%).

Analyzing the tables and graphs below (Tables 7 and 8; Figure 2), it can be seen that the specialists in Male Economic Informatics explain the laptop object with words that are part of the categories Faculty, Computer, Furniture and Entertainment.

**Table 7. Words resulting from hearing the laptop object.
Economic Informatics. Masculine**

| Criterion No. | A.R | A.V | C.I | G.G | S.D |
|---------------|----------|----------|------------|---------------|----------|
| 1 | Apple | IT | internet | job | faculty |
| 2 | apple | touchpad | technology | desk | projects |
| 3 | desk | thesis | projects | Skype | coffee |
| 4 | faculty | portable | table | colleagues | desk |
| 5 | projects | projects | games | community | keyboard |
| 6 | thesis | Netflix | desk | conversations | mouse |
| 7 | FEAA | Apple | bed | faculty | TV shows |
| 8 | break | faculty | TV shows | technology | programs |
| 9 | courses | TV shows | IT | projects | display |
| 10 | coffee | games | battery | Asus | games |

Source: computed by the authors

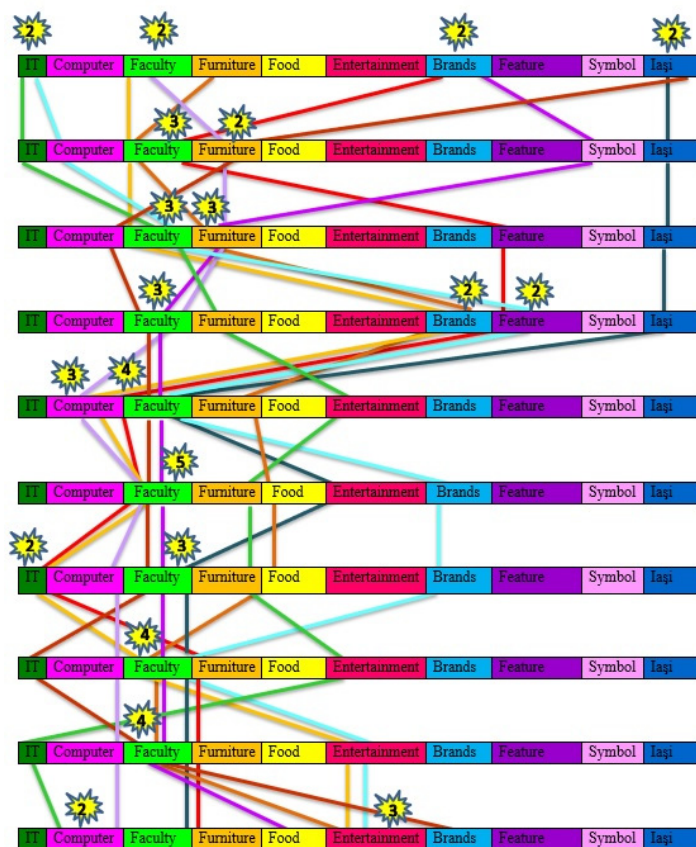
Table 8. Categories of words resulting from hearing the laptop object. Economic Informatics. Masculine

| Criterion No. | A.R | A.V | C.I | G.G | S.D |
|---------------|-----------|---------------|---------------|-----------|---------------|
| 1 | brand | IT | IT | Iasi | faculty |
| 2 | symbol | computer | IT | furniture | faculty |
| 3 | furniture | faculty | faculty | computer | food |
| 4 | faculty | feature | furniture | faculty | furniture |
| 5 | faculty | faculty | entertainment | faculty | computer |
| 6 | faculty | brand | furniture | faculty | computer |
| 7 | faculty | brand | furniture | faculty | entertainment |
| 8 | faculty | faculty | entertainment | IT | computer |
| 9 | faculty | entertainment | IT | faculty | computer |
| 10 | food | entertainment | computer | brand | entertainment |

Source: computed by the authors

The categories of objects mentioned are faculty (35%), furniture (15%), computer (14%), Iasi, entertainment (8%), brands (6%), food, feature, IT (4%), and symbol (2%).

The graph below designates the neural network created at the hearing of the laptop object for the specialists from the Economic Informatics specialization with the mention of the occurrence frequencies.



Source: computed by the authors

Figure 2. The neural network created when hearing the laptop object. Economic Informatics

Objective 1.a: Exploring the Delphi method of neural networks created by hearing the LAPTOP object, specifying that the first word is a brand (any type of brand). This restriction, the first word to be brand was not taken into account when we calculated the weights for the category Brands because all specialists mentioned brands for the first word.

Through this restriction I noticed that 3 female specialists from Marketing mentioned the Apple brand. Also, most of the words mentioned are in the Brands category. The words mentioned: Facebook, Netflix, Google, eMAG fall into the Brands category. It was noticed that other types of brands besides the laptop were mentioned. Therefore, specialists associate different types of brands when they hear the object of the laptop (Tables 9 and 10).

Table 9. Words resulting from hearing the laptop object with the specification that the first word is a brand. Marketing. Feminine

| Criterion No. | A.R | H.A | N.I | N.M | S.M |
|---------------|-----------|------------|-----------|-----------|-----------|
| 1 | Apple | Apple | Apple | eMAG | Asus |
| 2 | Google | Asus | Facebook | Lenovo | Nescafe |
| 3 | macbook | HP | Google | Asus | Coca Cola |
| 4 | Facebook | Netflix | Netflix | Acer | Google |
| 5 | Netflix | Lenovo | Microsoft | Facebook | eMAG |
| 6 | thesis | quality | desk | Instagram | table |
| 7 | processor | data | bed | simple | chair |
| 8 | Intel | internet | coffee | portable | bed |
| 9 | memory | technology | chips | apple | Jysk |
| 10 | screen | innovation | juice | bed | phone |

Source: computed by the authors

Table 10. Categories of words resulting from hearing the laptop object with the specification that the first word is a brand. Marketing. Feminine

| Criterion No. | A.R | H.A | N.I | N.M | S.M |
|---------------|----------|----------|-----------|-----------|-----------|
| 1 | brand | brand | brand | brand | brand |
| 2 | brand | brand | brand | brand | brand |
| 3 | computer | brand | brand | brand | brand |
| 4 | brand | brand | brand | brand | brand |
| 5 | brand | brand | brand | brand | brand |
| 6 | faculty | criteria | furniture | brand | furniture |
| 7 | computer | faculty | furniture | feature | furniture |
| 8 | brand | IT | food | feature | furniture |
| 9 | computer | IT | food | symbol | brand |
| 10 | computer | IT | food | furniture | object |

Source: computed by the authors

The categories of objects mentioned are brands (37%), computer (25%), furniture (10%), criteria (9%), food, IT (5%), faculty (3%), feature, symbol, and object (2%).

According to the restriction, the male specialists (Tables 11 and 12) mentioned both laptop brands and other brands that they associate with the laptop object. As expected, in the first place with a percentage of 38% were mentioned words from the category Brands and in the second place with a percentage of 31% words from the category Computer.

Table 11. Words resulting from hearing the laptop object with the specification that the first word is a brand. Marketing. Masculine

| Criterion No. | A.A | B.B | C.D | H.V | N.I |
|---------------|------------|--------------|------------|-------------|-----------|
| 1 | Starbucks | Asus | Apple | Asus | Google |
| 2 | premium | quality | Dell | Razer | Coca Cola |
| 3 | display | innovatiom | Asus | Lenovo | Microsoft |
| 4 | design | design | Acer | Acer | Facebook |
| 5 | portable | Lenovo | Samsung | gaming | Lenovo |
| 6 | RAM | desk | Microsoft | mouse | graphics |
| 7 | video | presentation | technology | keyboard | design |
| 8 | keyboard | projects | innovation | accessories | Razer |
| 9 | graphics | speed | design | power | Apple |
| 10 | resolution | Hp | quality | Amazon | Asus |

Source: computed by the authors

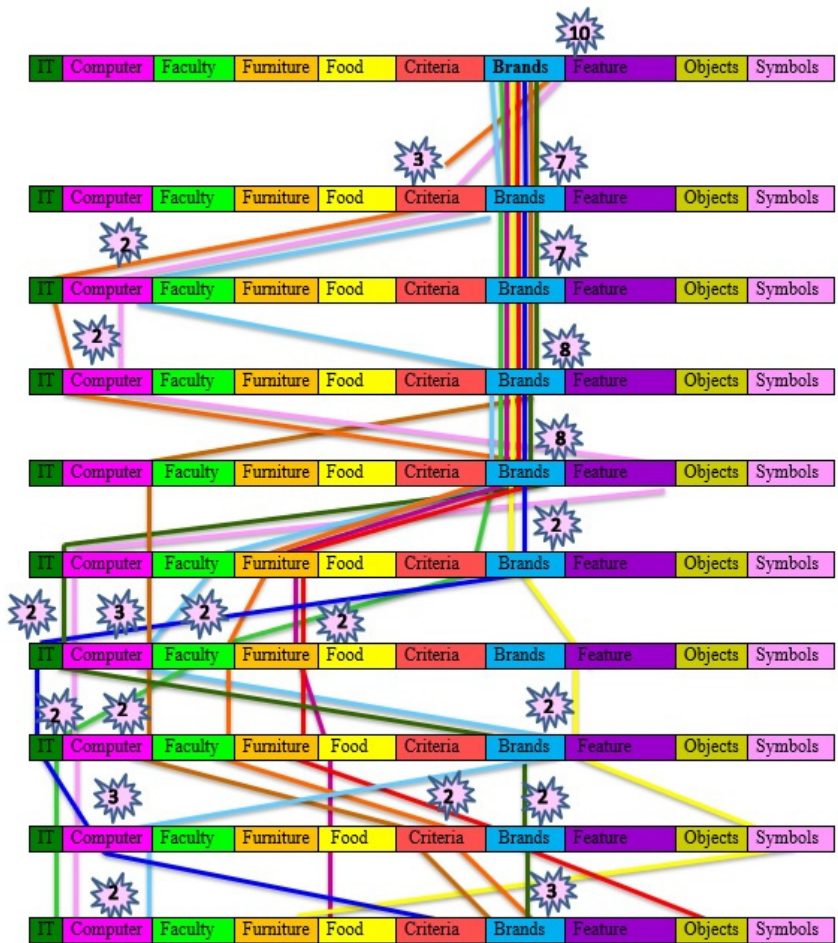
Table 12. Categories of words resulting from hearing the laptop object with the specification that the first word is a brand. Marketing. Masculine

| Criterion No. | A.A | B.B | C.D | H.V | N.I |
|---------------|----------|-----------|----------|----------|----------|
| 1 | brand | brand | brand | brand | brand |
| 2 | criteria | criteria | brand | brand | brand |
| 3 | computer | IT | brand | brand | brand |
| 4 | computer | computer | brand | brand | brand |
| 5 | feature | brand | brand | computer | brand |
| 6 | computer | furniture | brand | computer | computer |
| 7 | computer | faculty | IT | computer | computer |
| 8 | computer | faculty | IT | computer | brand |
| 9 | computer | criteria | computer | criteria | brand |
| 10 | computer | brand | criteria | brand | brand |

Source: computed by the authors

The categories of objects mentioned are brands (38%), computer (31%), criteria (11%), IT, food (6%), faculty (4%), feature, and furniture (2%).

The graph below (Figure 3) designates the neural network created at the hearing of the laptop object with the specification that the first word is a brand, for the specialists from the Marketing specialization with the mention of the occurrence frequencies.



Source: computed by the authors

Figure 3. The neural network created when hearing the laptop object with the specification that the first word is a brand. Marketing.

The female specialists (Tables 13 and 14) from Economic Informatics used in equal percentages, respectively 22% words from the Furniture and Computer categories. Thus, they describe the laptop object in words such as: bed, desk, chair, memory, battery, screen. The brands mentioned in the restriction are mainly laptop brands. The Apple brand has also been mentioned 3 times.

Table 13. Words resulting from hearing the laptop object with the specification that the first word is a brand. Economic Informatics. Feminine

| Criterion No. | H.B | I.T | L.R | T.O | T.M |
|---------------|-------------|----------|-------------|-------------|-------------|
| 1 | Dell | Apple | Netflix | Apple | Apple |
| 2 | Google | mouse | performance | Davidoff | macbook |
| 3 | eMAG | keyboard | quality | Pringles | cofee |
| 4 | bed | bed | complicated | Coca Cola | Jacobs |
| 5 | desk | table | small | projects | desk |
| 6 | performance | memory | compact | faculty | bed |
| 7 | safety | capacity | Skype | worksheets | chair |
| 8 | quality | white | Photoshop | aplications | charger |
| 9 | battery | desk | Google | seminar | white |
| 10 | screen | table | technology | desk | performance |

Source: computed by the authors

Table 14. Categories of words resulting from hearing the laptop object with the specification that the first word is a brand. Economic Informatics. Feminine

| Criterion No. | H.B | I.T | L.R | T.O | T.M |
|---------------|-----------|-----------|----------|-----------|-----------|
| 1 | brand | brand | brand | brand | brand |
| 2 | brand | computer | criteria | brand | computer |
| 3 | brand | computer | criteria | brand | food |
| 4 | furniture | furniture | feature | brand | brand |
| 5 | furniture | furniture | feature | faculty | furniture |
| 6 | criteria | computer | feature | faculty | furniture |
| 7 | criteria | computer | computer | faculty | furniture |
| 8 | criteria | colors | computer | faculty | computer |
| 9 | computer | furniture | brand | faculty | colors |
| 10 | computer | furniture | IT | furniture | criteria |

Source: computed by the authors

The categories of objects mentioned are computer, furniture (22%), brands (16%), criteria (13%), faculty (11%), color (5%), and food (2%).

27% of the words mentioned by specialists (Tables 15 and 16) are part of the Faculty category. In equal weights, respectively 20% we find the words from the categories Computer and Furniture. With a lower frequency of occurrence, we find the words from the categories Entertainment, Food and Features.

Table 15. Words resulting from hearing the laptop object with the specification that the first word is a brand. Economic Informatics. Masculine

| Criterion No. | A.R | A.V | C.I | G.G | S.D |
|---------------|---------------|------------|-----------|---------------|-------------|
| 1 | Hp | Lenovo | Apple | Samsung | Apple |
| 2 | table | desk | IBM | thesis | Mercedes |
| 3 | chair | table | desk | screen | IT |
| 4 | faculty | chair | chair | faculty | duration |
| 5 | presentations | portable | games | desk | technology |
| 6 | performance | homework | TV shows | colleagues | portable |
| 7 | power | premium | thesis | projects | graphics |
| 8 | desk | design | keyboard | presentations | aplications |
| 9 | coffee | IT | processor | processor | design |
| 10 | projects | innovation | screen | mouse | thesis |

Source: computed by the authors

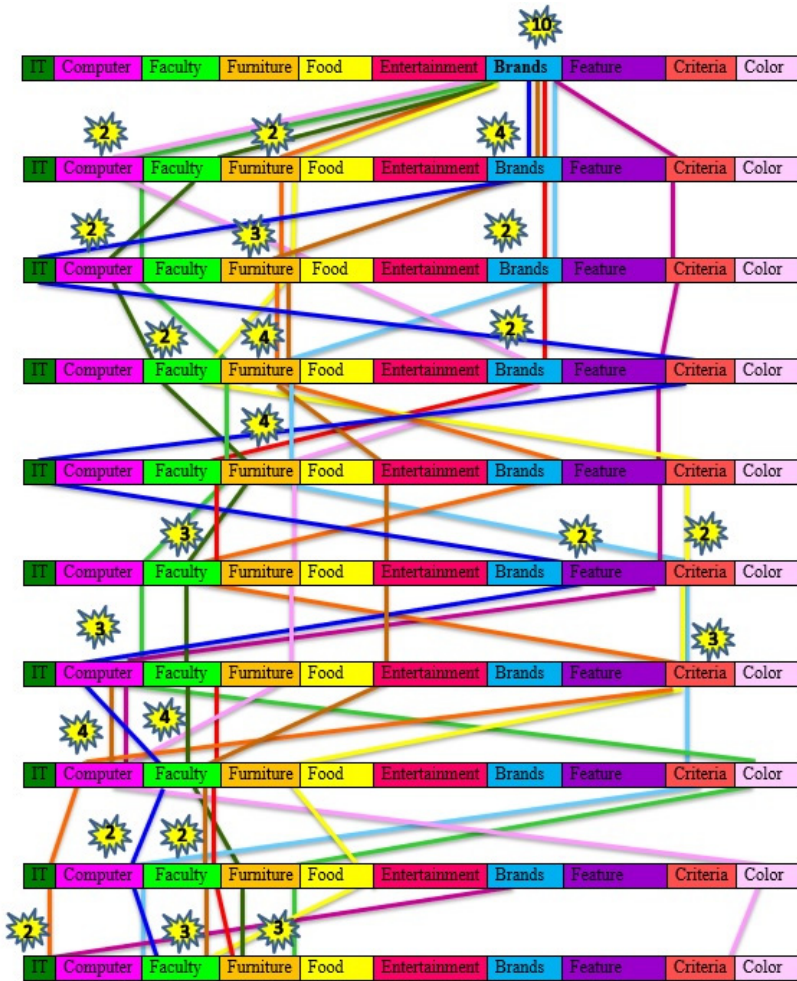
Table 16. Categories of words resulting from hearing the laptop object with the specification that the first word is a brand. Economic Informatics. Masculine

| Criterion No. | A.R | A.V | C.I | G.G | S.D |
|---------------|-----------|-----------|---------------|-----------|----------|
| 1 | brand | brand | brand | brand | brand |
| 2 | furniture | furniture | brand | faculty | brand |
| 3 | furniture | furniture | furniture | computer | IT |
| 4 | faculty | furniture | furniture | faculty | criteria |
| 5 | faculty | feature | entertainment | furniture | IT |
| 6 | criteria | faculty | entertainment | faculty | feature |
| 7 | criteria | criteria | faculty | faculty | computer |
| 8 | furniture | computer | computer | faculty | faculty |
| 9 | food | IT | computer | computer | computer |
| 10 | faculty | IT | computer | computer | faculty |

Source: computed by the authors

The categories of objects mentioned are faculty (27%), computer, furniture (20%), criteria, IT (9%), brands (5%), feature, entertainment (4%), and food (2%).

The graph below (Figure 4) designates the neural network created at the hearing of the laptop object with the specification that the first word is a brand, for the specialists from the Economic Informatics specialization with the mention of the occurrence frequencies.



Source: computed by the authors

Figure 4. The neural network created when the laptop object is heard, specifying that the first word is a brand. Economic Informatics

Objective 2: Explore the Delphi method of neural networks created by listening to the APPLE brand.

Premium, quality, trust are the words mentioned by female Marketing specialists (Tables 17 and 18). These words belong to the category Criteria. The percentage of 29% represents the words from the Objects category. Apple brand items were also mentioned: iPhone, iPad, AirPods. With a percentage of 8% we find words from the category Symbols: Steve Jobs, apple and garage.

**Table 17. Words resulting from hearing the Apple brand.
Marketing. Feminine**

| Criterion No. | A.R | H.A | N.I | N.M | S.M |
|---------------|------------|------------|-------------|----------|-------------|
| 1 | macbook | apple | quality | iPhone | performance |
| 2 | expensive | quality | innovation | iPad | rose |
| 3 | quality | rezistence | trust | macbook | gold |
| 4 | America | speed | new | AirPods | apple |
| 5 | tablet | memory | macbook | watch | design |
| 6 | watch | popular | iPhone | beats | respect |
| 7 | joystick | phone | touchscreen | apple | trust |
| 8 | technology | macbook | garage | SUA | quality |
| 9 | phone | AirPods | Steve Jobs | premium | premium |
| 10 | AirPods | watch | luxury | original | modern |

Source: computed by the authors

**Table 18. Categories of words resulting from hearing the Apple brand.
Marketing. Feminine**

| Criterion No. | A.R | H.A | N.I | N.M | S.M |
|---------------|----------|----------|-------------------|----------|----------|
| 1 | computer | symbol | criteria | object | criteria |
| 2 | feature | criteria | IT | object | color |
| 3 | criteria | criteria | criteria | computer | color |
| 4 | country | criteria | feature | object | symbol |
| 5 | object | computer | computer | object | computer |
| 6 | object | feature | object | object | criteria |
| 7 | object | object | computer | symbol | criteria |
| 8 | IT | computer | symbol | country | criteria |
| 9 | object | object | symbol | criteria | criteria |
| 10 | object | object | criteriu criteria | criteria | feature |

Source: computed by the authors

The categories of objects mentioned are criteria, object (29%), computer (13%), feature (9%), symbol (8%), country, color, IT (4%).

As in the case of female specialists, male specialists (Tables 19 and 20) explain the laptop brand in words that are part of the Criteria category. The percentage of 20% is represented by the words from the Characteristics category, followed by the words from the IT, Calculator and Symbols categories.

**Table 19. Words resulting from hearing the Apple brand.
Marketing. Masculine**

| Criterion No. | A.A | B.B | C.D | H.V | N.I |
|---------------|------------|-------------|------------|-------------|------------|
| 1 | premium | design | iPhone | măr | innovation |
| 2 | Steve Jobs | quality | special | quality | new |
| 3 | graphics | rapidity | luxury | garage | apple |
| 4 | white | picture | macbook | premium | IT |
| 5 | Starbucks | macbook | different | trust | premium |
| 6 | elegant | touchscreen | new | iphone | expensive |
| 7 | perfect | improvement | investment | macbook | California |
| 8 | design | innovation | technology | modern | iPhone |
| 9 | innovation | iphone | creativity | performance | garage |
| 10 | portable | different | security | innovation | Steve Jobs |

Source: computed by the authors

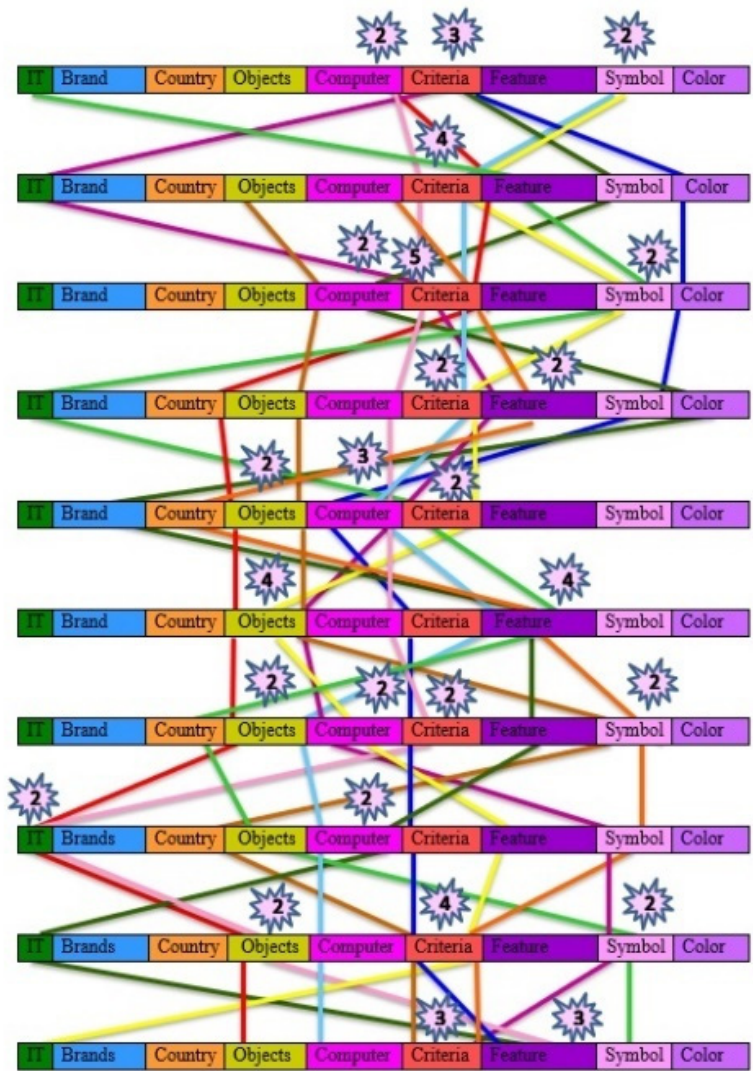
**Table 20. Categories of words resulting from hearing the Apple.
Marketing. Masculine**

| Criterion No. | A.A | B.B | C.D | H.V | N.I |
|---------------|----------|----------|----------|----------|----------|
| 1 | criteria | computer | object | symbol | IT |
| 2 | symbol | criteria | feature | criteria | feature |
| 3 | computer | criteria | criteria | symbol | symbol |
| 4 | color | computer | computer | criteria | IT |
| 5 | brand | computer | feature | criteria | criteria |
| 6 | feature | computer | feature | object | feature |
| 7 | feature | criteria | criteria | computer | country |
| 8 | computer | IT | IT | feature | object |
| 9 | IT | object | criteria | criteria | symbol |
| 10 | feature | feature | criteria | IT | symbol |

Source: computed by the authors

The categories of objects mentioned are criteria (26%), feature (20%), computer (16%), IT, symbol (12%), object (8%), brand, color, and country (2%).

The chart below (Figure 5) designates the neural network created at the hearing of the Apple brand, for the specialists from the Marketing specialization with the mention of the occurrence frequencies.



Source: computed by the authors

Figure 5. The neural network created by hearing the Apple brand. Marketing

Economic Informatics associates the Apple brand with different words from the Criteria and Feature categories. The words in these categories are trust, quality, performance, and status. The percentage of 14% is represented by the words from the Calculator category (Tables 21 and 22).

**Table 21. Words resulting from hearing the Apple brand.
Economic Informatics. Feminine**

| Criterion No. | H.B | I.T | L.R | T.O | T.M |
|---------------|-----------|-------------|-------------|---------------|-------------|
| 1 | macbook | expensive | design | iPhone | garage |
| 2 | America | status | trust | macbook | performance |
| 3 | apple | modern | quality | performance | quality |
| 4 | different | complex | iPhone | quality | technology |
| 5 | design | luxury | aplications | information | iPhone |
| 6 | fineness | performance | Steve Jobs | communication | macbook |
| 7 | precizion | trust | portable | trust | apple |
| 8 | iPhone | premium | innovation | beautiful | investment |
| 9 | security | innovation | macbook | elegant | innovation |
| 10 | quality | design | money | new | trust |

Source: computed by the authors

**Table 22. Categories of words resulting from hearing the Apple brand.
Economic Informatics. Feminine**

| Criterion No. | H.B | I.T | L.R | T.O | T.M |
|---------------|----------|----------|----------|----------|----------|
| 1 | computer | feature | computer | object | symbol |
| 2 | country | criteria | criteria | computer | criteria |
| 3 | symbol | feature | criteria | criteria | criteria |
| 4 | feature | feature | object | criteria | IT |
| 5 | computer | criteria | faculty | faculty | object |
| 6 | criteria | criteria | symbol | faculty | computer |
| 7 | criteria | criteria | feature | criteria | symbol |
| 8 | object | criteria | IT | feature | criteria |
| 9 | criteria | IT | computer | feature | IT |
| 10 | criteria | computer | feature | feature | criteria |

Source: computed by the authors

The categories of objects mentioned are criteria (36%), feature (18%), computer (14%), IT, symbol, object (8%), faculty (6%), and country (2%).

From the tables below (Tables 23 and 24) we can see that the male specialists from Economic Informatics explain the Apple brand through the Criteria and Feature categories. The IT category was mentioned in a percentage of 14%. In this category, the word most often is innovation. Other words in this category are future, gadget, and technology.

Table 23. Words resulting from hearing the Apple brand. Economic Informatics. Masculine

| Criterion No. | A.R | A.V | C.I | G.G | S.D |
|---------------|------------|-------------|------------|------------|------------|
| 1 | Steve Jobs | future | iPhone | iPhone | investment |
| 2 | garage | innovation | ipad | macbook | design |
| 3 | technology | good | macbook | premium | premium |
| 4 | trust | expensive | design | expensive | unique |
| 5 | innovation | technology | white | California | resistence |
| 6 | quality | clarity | rezolution | popular | durability |
| 7 | design | speed | innovation | Steve Jobs | quality |
| 8 | modern | performance | quality | garage | gadget |
| 9 | simple | creativity | premium | quality | elegance |
| 10 | apple | trust | new | trust | fineness |

Source: computed by the authors

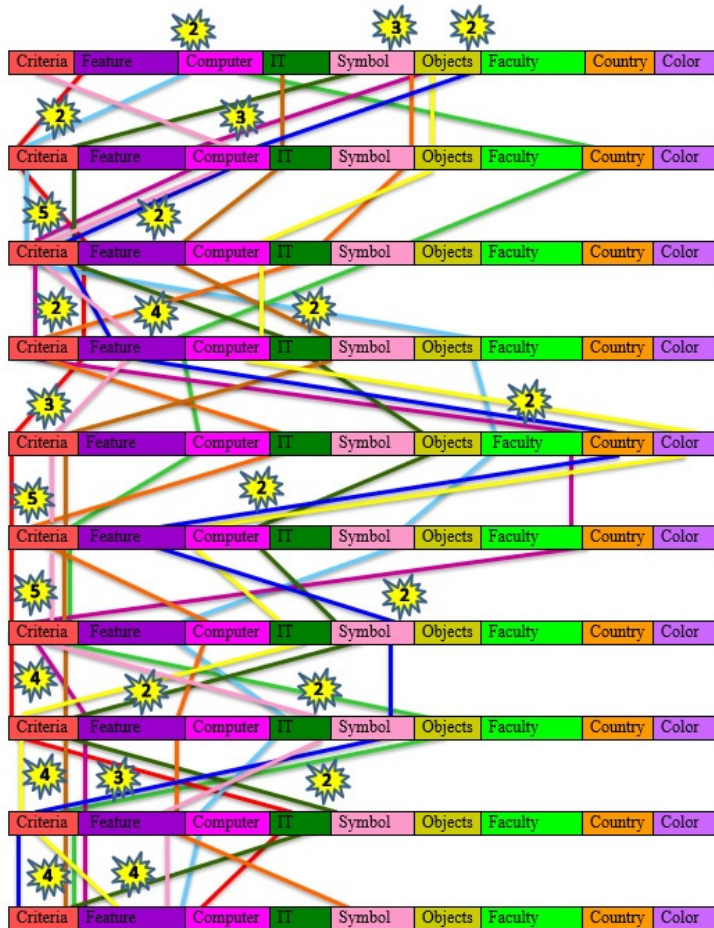
Table 24. Categories of words resulting from hearing the Apple brand. Economic Informatics. Masculine

| Criterion No. | A.R | A.V | C.I | G.G | S.D |
|---------------|----------|----------|----------|----------|----------|
| 1 | symbol | IT | object | object | criteria |
| 2 | symbol | IT | object | computer | computer |
| 3 | IT | feature | computer | criteria | criteria |
| 4 | criteria | feature | computer | feature | feature |
| 5 | IT | IT | color | country | criteria |
| 6 | criteria | criteria | computer | feature | criteria |
| 7 | computer | criteria | IT | symbol | criteria |
| 8 | feature | criteria | criteria | symbol | IT |
| 9 | feature | criteria | criteria | criteria | feature |
| 10 | symbol | criteria | feature | criteria | feature |

Source: computed by the authors

The categories of objects mentioned are criteria (34%), feature (20%), IT (14%), computer (12%), symbol (10%), object (6%), country, and color (2%).

The graph below (Figure 6) designates the neural network created at the hearing of the Apple brand, for the specialists from the Economic Informatics specialization with the mention of the occurrence frequencies.



Source: computed by the authors

Figure 6. The neural network created by hearing the Apple brand. Economic Informatics.

Objective 3: Exploration by Delphi method of neural networks created by hearing the phrase "LAPTOP APPLE".

According to the chart below, 24% of the words mentioned are in the Criteria category. In second place, with a percentage of 22% is the Characteristics category. The words in the Furniture category were mentioned in a percentage of 13%. In the Friends category, two female persons (Andreea and Kiva), the friends of the specialists, were also mentioned. These were mentioned because they own Apple laptops and specialists when they hear the phrase "Apple laptop" associate it with their name (Tables 25 and 26).

Table 25. Words resulting from hearing the phrase "Apple laptop". Marketing. Feminine

| Criterion No. | A.R | H.A | N.I | N.M | S.M |
|---------------|------------|------------|-------------|------------|-----------|
| 1 | innovation | perfect | trust | Palas | different |
| 2 | apple | quality | performance | Cărturești | Kiva |
| 3 | technology | innovation | respect | tea | macbook |
| 4 | trust | apple | design | projects | notebooks |
| 5 | grey | desk | improvement | colegi | projects |
| 6 | faculty | respect | innovation | Andreea | quality |
| 7 | projects | image | quality | apple | simple |
| 8 | impeccable | desk | expensive | white | chair |
| 9 | modern | modern | white | chair | table |
| 10 | attractive | design | new | table | desk |

Source: computed by the authors

Table 26. Categories of words resulting from hearing the phrase "Apple laptop". Marketing. Feminine

| Criterion No. | A.R | H.A | N.I | N.M | S.M |
|---------------|----------|-----------|----------|-----------|-----------|
| 1 | IT | feature | criteria | Iași | feature |
| 2 | symbol | criteria | criteria | Iași | friend |
| 3 | IT | IT | criteria | food | computer |
| 4 | criteria | symbol | computer | faculty | faculty |
| 5 | culoare | furniture | criteria | faculty | feature |
| 6 | faculty | criteria | IT | friend | criteria |
| 7 | faculty | criteria | criteria | symbol | feature |
| 8 | feature | criteria | feature | color | furniture |
| 9 | feature | feature | color | furniture | furniture |
| 10 | feature | computer | feature | furniture | furniture |

Source: computed by the authors

The categories of objects mentioned are criteria (24%), feature (22%), furniture (13%), IT (9%), color, computer, symbol (7%), Iasi (5%), friends (4%), and food (2%).

The Criteria, Computer and Feature categories are the most common according to the data in the tables below. The Computer category was mentioned in a percentage of 28%. From this category the word that appears most often is the keyboard. Also, from this category we find the words sound, mouse, video, diagonal, and graphics (Tables 27 and 28).

Table 27. Words resulting from hearing the phrase "Apple laptop". Marketing. Masculine

| Criterion No. | A.A | B.B | C.D | H.V | N.I |
|---------------|-----------|-------------|---------------|---------------|------------|
| 1 | quality | thin | investment | performance | premium |
| 2 | thin | simple | trust | liked | expensive |
| 3 | RAM | innovation | valuable | design | design |
| 4 | processor | image | innovation | elegant | status |
| 5 | battery | rapidity | originality | communication | black |
| 6 | keyboard | performance | reliability | information | white |
| 7 | mouse | status | atractiveness | expensive | rezolution |
| 8 | sound | keyboard | performance | white | thin |
| 9 | video | rezistence | functionality | beuatiful | keyboard |
| 10 | diagonal | luxury | new | interesting | graphics |

Source: computed by the authors

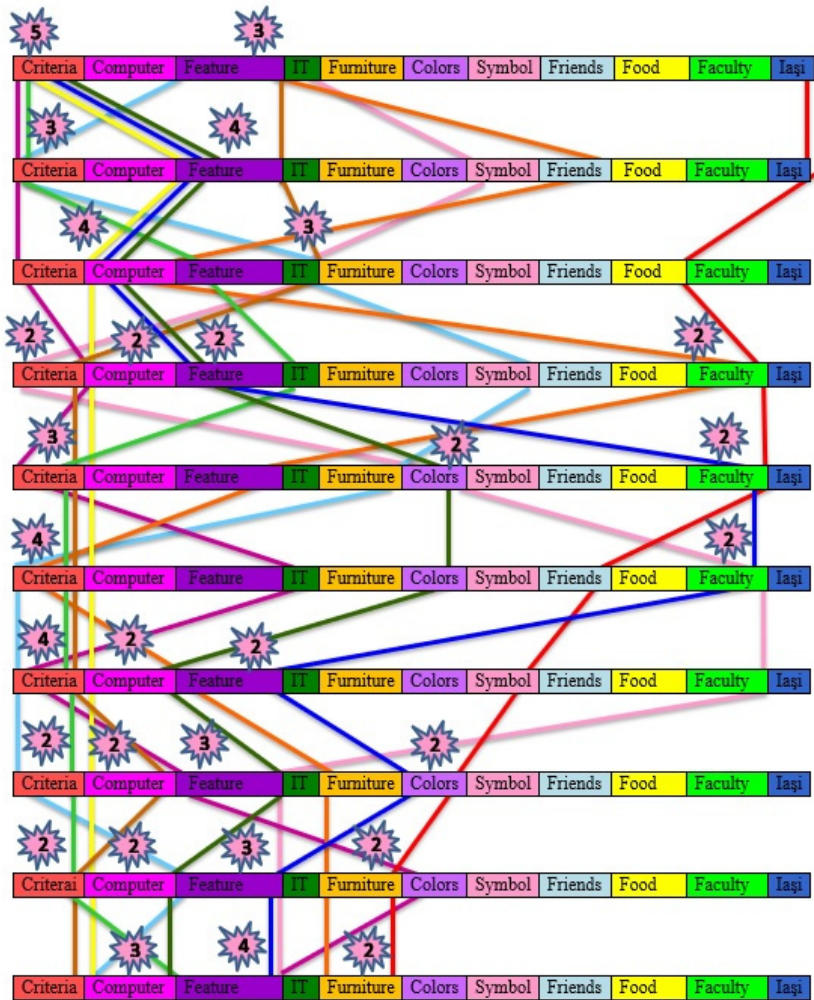
Table 28. Categories of words resulting from hearing the phrase "Apple laptop". Marketing. Masculine

| Criterion No. | A.A | B.B | C.D | H.V | N.I |
|---------------|----------|----------|----------|----------|----------|
| 1 | criteria | feature | criteria | criteria | criteria |
| 2 | feature | feature | criteria | feature | feature |
| 3 | computer | IT | feature | computer | computer |
| 4 | computer | criteria | IT | feature | feature |
| 5 | computer | criteria | criteria | faculty | color |
| 6 | computer | criteria | criteria | faculty | color |
| 7 | computer | criteria | criteria | feature | computer |
| 8 | computer | computer | criteria | color | feature |
| 9 | computer | criteria | criteria | feature | computer |
| 10 | computer | criteria | feature | feature | computer |

Source: computed by the authors

The categories of objects mentioned are criteria (32%), computer (28%), feature (26%), color (6%), IT, and faculty (4%).

The graph below (Figure 7) designates the neural network created at the hearing of the Apple brand for the specialists from the Marketing specialization with the mention of the occurrence frequencies.



Source: computed by the authors

Figure 7. The neural network created by hearing the brand of the phrase “Apple laptop”. Marketing

26% of the words mentioned by specialists belong to the Criteria category. The words in the category Feature are in a share of 24%. The most mentioned words are quality, innovation and trust. We also note the percentage of 22% for words in the Computer category. As in the case of Marketing specialists, Economic Informatics specialists associate the names of friends with the phrase "Apple laptop" (Tables 29 and 30).

Table 29. Words resulting from hearing the “Apple laptop” phrase. Economic Informatics. Feminine

| Criterion No. | H.B | I.T | L.R | T.O | T.M |
|---------------|------------|-------------|------------|-------------|------------|
| 1 | Ana | improvement | new | modern | quality |
| 2 | faculty | different | innovation | quality | speed |
| 3 | courses | future | quality | speed | macbook |
| 4 | coffee | trust | valuable | performance | creativity |
| 5 | projects | valuable | premium | technology | portable |
| 6 | tests | quality | trust | premium | elegant |
| 7 | colleagues | projects | white | expensive | modern |
| 8 | Iași | faculty | projects | gadget | silver |
| 9 | FEAA | coffee | simple | programs | innovation |
| 10 | thesis | colleagues | different | functions | simple |

Source: computed by the authors

Table 30. Categories of words resulting from hearing the phrase “Apple laptop”. Economic Informatics. Feminine

| Criterion No. | H.B | I.T | L.R | T.O | T.M |
|---------------|---------|----------|----------|----------|----------|
| 1 | friend | criteria | feature | feature | criteria |
| 2 | faculty | feature | IT | criteria | criteria |
| 3 | faculty | IT | criteria | criteria | computer |
| 4 | food | criteria | feature | criteria | criteria |
| 5 | faculty | feature | criteria | IT | feature |
| 6 | faculty | criteria | criteria | criteria | feature |
| 7 | faculty | faculty | color | feature | feature |
| 8 | Iași | faculty | faculty | IT | color |
| 9 | faculty | food | feature | computer | IT |
| 10 | faculty | faculty | feature | computer | feature |

Source: computed by the authors

The categories of objects mentioned are criteria (26%), feature (24%), faculty (22%), IT (10%), computer (6%), food, color (4%), Iasi, and friends (2%).

Specialists in Male Economic Informatics (Tables 31 and 32) explain the phrase "Apple laptop" with words that are part of the categories Criteria, Feature, Computer, IT. The words mentioned in the IT category are intelligence, innovation and programmers. The most mentioned words that are part of the Criteria category are quality, strength and trust.

**Table 31. Words resulting from hearing the “Apple laptop” phrase.
Economic Informatics. Masculine**

| Criterion No. | A.R | A.V | C.I | G.G | S.D |
|---------------|---------------|-------------|-------------|----------|--------------|
| 1 | quality | complicated | investment | capacity | different |
| 2 | rezistance | expensive | capacity | speed | attractive |
| 3 | performance | editing | editing | portable | modern |
| 4 | status | aplications | photo | new | intelligence |
| 5 | design | simple | video | design | rezistance |
| 6 | security | portable | design | status | desk |
| 7 | investment | quality | programmers | modern | table |
| 8 | multi-tasking | small | trust | quality | coffee |
| 9 | innovation | thin | performance | premium | black |
| 10 | trust | grey | white | trust | simple |

Source: computed by the authors

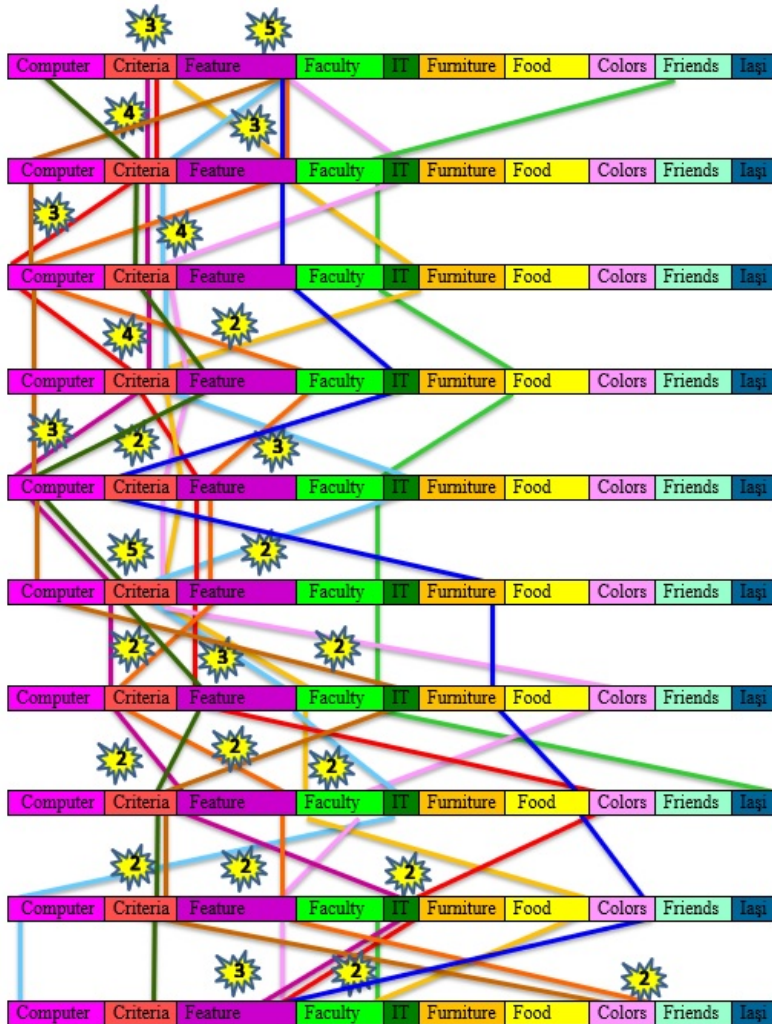
**Table 32. Categories of words resulting from hearing the phrase "Apple laptop".
Economic Informatics. Masculine**

| Criterion No. | A.R | A.V | C.I | G.G | S.D |
|---------------|----------|----------|----------|----------|-----------|
| 1 | criteria | feature | feature | computer | feature |
| 2 | criteria | feature | computer | criteria | feature |
| 3 | criteria | computer | computer | criteria | feature |
| 4 | criteria | faculty | computer | feature | IT |
| 5 | computer | feature | computer | computer | criteria |
| 6 | criteria | feature | computer | criteria | furniture |
| 7 | criteria | criteria | IT | feature | furniture |
| 8 | feature | feature | criteria | criteria | food |
| 9 | IT | feature | criteria | criteria | color |
| 10 | criteria | color | color | criteria | feature |

Source: computed by the authors

The categories of objects mentioned are criteria (34%), feature (28%), computer (18%), IT, color (6%), furniture (4%), food, and faculty (2%).

The graph below (Figure 8) designates the neural network created at the hearing of the phrase “Apple laptop”, for the specialists from the Economic Informatics specialization with the mention of the occurrence frequencies.

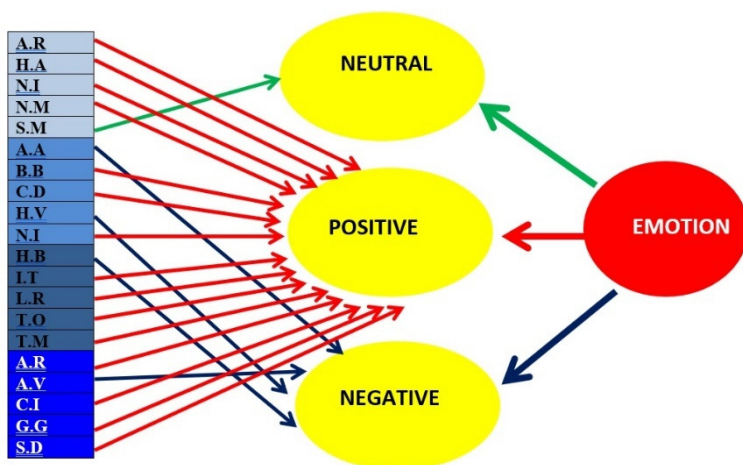


Source: computed by the authors

Figure 8. The neural network created by hearing the brand of the phrase “Apple laptop”. Economic Informatics

Objective 4: Exploring the structure of associations.

The results shown in the chart below (Figure 9) indicate the emotion specialists have when hearing of Apple is mostly a positive emotion. At the root of this emotion are several common reasons for all specialists. According to specialists, the positive emotions are due to the pleasure provided by using or owning Apple products. Thus, they feel emotions of happiness, love, pride, gratitude, and admiration.



Source: computed by the authors

Figure 9. Results grouped by types of emotions. Marketing, Economic Informatics

On the other hand, specialists who have felt a negative emotion are generally dissatisfied with the price-quality ratio of the products. It has been found that Marketing specialists are more price sensitive and are not willing to pay a higher price for products that already exist and meet their needs. An interesting thing is that the negative emotion is also caused by the image offered by this brand. According to the explanations, some people buy products from the Apple brand only for the image offered and not for their quality. In other words, some people buy products from the Apple brand to show their belonging to a high economy class and also to improve their image in society through the products they own. Indifference is a neutral emotion and was explained by the fact that the specialist does not feel any attraction for this brand but no rejection, he is somewhere in the middle.

So, a pleasant experience and a positive emotion can make the Apple brand more attractive.

By asking "Do you own an APPLE laptop or have you ever worked on an APPLE laptop?" we want to find out if the specialists are talking about products owned by Apple from experience and so, 50% own an Apple laptop, 40% do not own but have worked on an Apple laptop, 10% do not own and have never worked on an Apple laptop. Thus, we can say that most specialists speak from their own experience about Apple products.

By asking "If the APPLE brand disappears tomorrow, what brand on the market could replace this brand's products?" we want to find out what other brand on the market could replace Apple brand products and the results were: 30% mentioned the Huawei brand, 25% Asus, with equal percentages of 15% Lenovo,

Samsung, 10% Dell and 5% Tesla. So, the strongest brands that could replace Apple's products are Huawei and Asus.

By asking them to "Mention 3 famous products of the APPLE brand" we want to find out which are the most famous products of the Apple brand and Marketing and Business Informatics specialists mentioned 7 types of Apple products. The word iPhone was mentioned in a percentage of 32%, followed by Macbook with 24%, iPad 21%, AirPods 10%, Apple Watch 9% and with a lower frequency of appearance respectively 2% iPod and Apple TV. So, we can say that specialists know the products of the Apple brand.

Last question was "What is the word that best describes APPLE LAPTOP?" and its aim was to discover the words that specialists associate with the phrase "Apple laptop". The most mentioned word was innovation. This word was mentioned in a percentage of 30%. The word quality was mentioned in a percentage of 25%. With a lower frequency of occurrence we notice the words investment, complexity, luxury, speed, premium, performance and intelligence. Thus, specialists mentally associate these words with the Apple brand.

4. CONCLUSIONS

The research results can be concluded as follows:

Objective 1. Explore the neural networks that form when you hear the word laptop.

From the analyzed data we can see that most Marketing specialists explain the object of the laptop with words that are part of the categories Computer, Faculty and Entertainment. Specialists in Economics prefer to use words from the categories Faculty, Furniture and Computer when explaining the object of the laptop. Both female and male specialists from the specializations Marketing and Economic Informatics use words from the categories Faculty, Computer and Furniture. For the specialists from Marketing, a higher frequency of appearance was observed for the words from the category Brands and for the specialists from Economic Informatics words from the category Computer.

Objective 2. Explore the neural networks that form when you hear the Apple brand.

From the analyzed results we can say that Marketing specialists explain the Apple brand in words that are part of the categories Criteria, Features, Computer. The specialists from Economic Informatics explain the Apple brand with words that are part of the categories Criteria, Characteristics, Computer, IT. The female specialists from Marketing describe the Apple brand through objects, while the ones from Economic Informatics use words from the Criteria category. The male specialists from the Economic Informatics specialization use in a higher percentage words from the IT category, and those from Marketing, words from the Computer category.

Objective 3. Explore the neural networks that form when you hear the phrase "Apple laptop."

From the analyzed results we can say that Marketing specialists explain the "Apple laptop" construct of words, in words that are part of the categories Criteria, Features, Computer, Furniture, Colors, Friends. The specialists from Economic Informatics explain the phrase "Apple laptop" with words that are part of the categories Criteria, Characteristics, Computer, IT, Faculty. The female specialists from the Marketing specialization describe the Apple laptop through different criteria and characteristics and the ones from the Economic Informatics specialization use words from the Faculty category. The male specialists from the Marketing specialization use words from the Computer category to describe the phrase "Apple laptop". Male specialists from Economic Informatics describe the phrase in words from the IT category.

Objective 4. Exploring the association construct.

In general, both Marketing specialists and Economic Informatics specialists feel positive emotions when they hear about the Apple brand, but it was noticed that Marketing specialists are more price sensitive.

The personal opinion of the specialists is a good one because they consider the Apple brand as a strong and innovative brand that cannot be easily matched.

In a fairly high percentage, specialists own or have worked on Apple laptops, so they tell us from experience and the word that best describes the Apple laptop is "innovation".

This research also has some important limitations. These limits counted in:

- Research complexity - due to the multitude of graphs and tables.
- The accuracy of said neural chain cannot be verified.
- The research was carried out during the COVID-19 pandemic, physical contact being impossible, the interviews being conducted through electronic platforms.

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HOUSEHOLD SUPPORT FOR RENEWABLE ENERGY DEVELOPMENT - A CHOICE EXPERIMENT AND SURVEY DESIGN

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ABSTRACT

Reaching and surpassing the targets set for Romania within the European Union's 2030 Climate and Energy Framework requires continued support for the development of renewable energy production. We seek to understand the drivers, as well as the actual level of support that household consumers have towards the continued growth of renewable electricity generation at the national level. These will be assessed based on a discrete choice experiment and a survey applied on a sample of Romanian household electricity consumers. The current paper explains the process through which the experiment was designed and integrated with the questionnaire-based survey in order to identify the effects of socio-demographic and lifestyle variables on willingness to pay for renewable energy support schemes.

Keywords: renewable energy; discrete choice experiment; household consumers; willingness to pay; experimental design.

JEL Classification: C90, D10, D90, Q42

1. INTRODUCTION

In the context of the 2030 Climate and Energy Framework and the wider European Green Deal, the European Union is seeking to continue its path towards the sustainable development of the energy sector. Romania is well on the path to fulfilling its 2020 targets regarding the use of energy from renewable sources. However, a reduction in the benefits offered to generators through the green certificate support scheme, as well as other factors seem to have slowed the growth of wind and solar energy in the generation mix (ANRE, 2014, 2015, 2016, 2017, 2018, 2019). In addition, the liberalized electricity retail market shows an increase in competition among suppliers, who are using increasingly complex marketing strategies in order to attract household consumers.

These circumstances create opportunities for research in the field of energy marketing, with a special focus on renewable electricity and household consumers. As such, we sought to assess whether and to what extent household consumers show a willingness to pay (WTP) for the development of renewable energy and the various societal benefits that it provides. In order to evaluate this phenomenon, we have designed a discrete choice experiment that will be combined with a questionnaire-based survey and applied on a sample of household electricity consumers in the North-East region of Romania. This will be the second study of its kind to be implemented in the region, with the first being a pilot study applied at a more local level.

The current paper provides a description of the process through which the experiment was designed and integrated with the survey. The most important and complex task in creating the experimental framework for such a study involves choosing a relevant set of attributes and adequate levels that will define the hypothetical products/offers from which respondents will have to choose. The approach discussed in the paper is based on the work performed as part of the pilot study mentioned above, which will be refined and updated (Maxim, 2015a).

The paper includes three other sections beyond the introduction. The following section presents the process of defining the adequate attributes and levels. The next section provides insights into the experimental and survey design process and the final section provides a set of conclusions and next steps.

2. CHOOSING RELEVANT ATTRIBUTES AND ADEQUATE LEVELS FOR THE CHOICE EXPERIMENT

Choosing the right set of attributes, as well as adequate levels for these is considered among specialists to be the most important step in the design of any conjoint based study, including the discrete choice experiment (Orme, 2014). The levels and attributes can generally be identified based on qualitative research methods such as focus groups, interviews or through a review of relevant publications, including market surveys, academic papers and others.

Based on previous research and practice in designing choice experiments, we have identified some basic principles and recommendations regarding this stage of the methodological design (Maxim, 2015b). Among these we found that, aside from being relevant, the attributes need to be conceptually distinct (so as to avoid cross-interference), as well as tangible and easily understood by the respondents. The levels need to be chosen so as to provide plausible scenarios, as well as being concise and concrete.

The attributes chosen for the current study were identified based on an extensive literature review and filtered through the use of a survey among a sample of academics and specialists from the energy field. The full process through which the attributes were chosen is described in Maxim (2015a). Our experiment uses a set of five attributes. Four of these refer to societal benefits that can result from an increased share of renewable electricity being produced and consumed at the national level. We also include a price attribute that will allow us to determine the WTP of household consumers for these benefits. The full set of attributes included in the final questionnaire is listed below.

- Additional cost of the monthly electricity bill;
- Romania's independence from energy imports (coal, gas, oil etc.);
- New jobs created at the county level;
- Reduction of pollution effects (air, water, soil);
- Increased revenue for rural localities from taxes paid by new energy companies.

The process of establishing adequate levels for these attributes required a specific approach for each of the five items. We decided to set a number of four gradual levels of increase from the status quo values of each of the five attributes.

The "*Additional cost of the monthly electricity bill*" attribute was assigned its levels based on the weighted average electricity bill paid by a household on the competitive retail market in Romania. This value was calculated based on data provided by the Romanian Energy Regulatory Authority (ANRE, 2019).

The data in Table 1 show that the average bill paid by Romanian household consumers on the competitive retail market is 81.32 lei per month. The levels chosen for the attribute are 5 lei, 15 lei, 25 lei and 35 lei, equating to an increase of 6%, 18%, 31% and, respectively, 43% of the monthly bill. While a 43% increase in the electricity bill may seem excessive for some respondents, this value represents only 16% and 7% for respondents from consumer classes D and E, respectively. These increases are in line with the findings presented in a previous work (Maxim, 2015a), which were successfully used in a pilot study on the same topic.

Table 1. Estimation of monthly electricity bill of Romanian households on the competitive retail market

| Consumer class | No. of consumers | Consumption (MWh) | Average consumption (MWh) | Average price (lei/MWh) | Average bill (lei) |
|----------------|------------------|-------------------|-----------------------------------------|-------------------------|--------------------|
| A | 1 420 000 | 1 572 000 | 1.11 | 475 | 526 |
| B | 805 000 | 1 471 000 | 1.83 | 496 | 906 |
| C | 375 000 | 808 000 | 2.15 | 492 | 1060 |
| D | 102 000 | 537 000 | 5.26 | 492 | 2590 |
| E | 15 000 | 188 000 | 12.53 | 479 | 6003 |
| Total | 2 717 000 | 4 576 000 | Average (weighted) yearly bill | | 820 |
| | | | Average monthly bill | | 68.34 |
| | | | Average monthly bill (incl. VAT) | | 81.32 |

Source: estimations based on ANRE (2019)

The levels for the “*Romania’s independence from energy imports (coal, gas, oil etc.)*” attribute were established based on a hypothetical gradual replacement of electricity generation by power plants that use imported fossil fuels, such as hard coal, natural gas and, to a much lesser extent, oil. Energy independence refers to the opposite of the more frequently used “energy dependence”, which is calculated as a ratio between net energy imports and gross available energy (European Commission, 2020). While Romania is, generally, a net exporter of electricity, it does import primary energy in the form of fossil fuels. Based on data available for 2017, Romania’s level of energy independence was estimated at 77% (European Commission, 2019). Official statistics for 2017 show that approximately 6.2 million tons of oil equivalent (mtoe) worth of fossil fuels are used for electricity generation (mostly natural gas and coal) (National Institute of Statistics, 2018). By corroborating these sources, we can estimate that energy imports for electricity generation amount to approximately 1.91 mtoe. Thus, out of a total of approximately 7.7 (mtoe) representing the net energy imports of Romania, 1.91 could, hypothetically, be substituted with local production from renewable sources. This would lead to a level of energy independence of approximately 83% (depending on the reference year). If we assume a slight decrease in oil demand in the transportation sector due to increased adoption of electric and hybrid vehicles, such as automobiles and city busses, we can anticipate a maximum level of energy independence of 84% in the medium/long term. Thus, the levels chosen for this attribute are 78%, 80%, 82% and 84%.

In order to establish adequate levels for the “*New jobs created at the county level*” attribute, we assumed a maximum number of additional jobs created through the development of renewable energy sources of up to 1% - 1.5% of the current employees in the “*Energy and water*” sector, as seen in similar studies (Maxim, 2015a; Ku and Yoo, 2010). This approach is also in line with the

estimates provided by Duscha (Duscha *et al.*, 2014), of between 0.8% - 1.35% additional employees from reaching proposed renewable energy targets compared to the “Business As Usual” scenario. Given that the average number of people employed during August 2019 – July 2020 in the ‘energy, water and air conditioning’ sector in Romania was 52 925 (National Institute of Statistics, 2020), we estimated a maximum number of 714-794 new employees nationally. Assuming an even distribution across the 42 counties of Romania, we established a maximum level of 16 new jobs at the county level, with the other levels of the attribute being 2, 6 and 12 jobs.

The “*Reduction of pollution effects (air, water, soil)*” refers to a potential reduction in the external costs (externalities) of electricity production. A previous study provides comprehensive analysis of the lifetime external costs associated with various technologies used in the generation of electricity (Maxim, 2014). Based on these values, we can approximate the overall impact of pollution caused by the electricity sector in monetary units (constant 2000 Euros and 2010 technologies). Considering the current electricity generation mix, the equivalent externalities are presented in Table 2. We used an average of the 2017 and 2018 energy mix due to high fluctuations of hydroelectric power generation, which impacted the share of all other technologies.

Table 2. Estimate of yearly externalities by type of electricity generation technology (average 2017-2018 in constant 2000 Euros)

| Technology | Share of generation mix (2017-2018 avg.) | Total generation (Mil. MWh) | Cost of externalities (EUR/MWh) | Total cost (Mil. EUR) |
|-------------|------------------------------------------|-----------------------------|---------------------------------|-----------------------|
| Coal | 25.32% | 14.66 | 15 | 219.88521 |
| Hydro | 26.57% | 15.38 | 1 | 15.37980675 |
| Nuclear | 18.14% | 10.50 | 0,7 | 7.3515071 |
| Natural gas | 16.74% | 9.69 | 4 | 38.754913 |
| Wind | 11.71% | 6.78 | 0,251 | 1.70165563 |
| Oil | 0.06% | 0.03 | 11 | 0.382107 |
| Solar | 1.35% | 0.78 | 0,6 | 0.4689495 |
| Biomass | 0.12% | 0.07 | 5 | 0.34737 |
| Total | | 57.90 | | 284.27 |

Sources: calculations based on ANRE (2017, 2018) and Maxim (2014, 2015a)

Starting from the status quo, we propose four progressive scenarios that are in line with current trends in the energy sector assuming a sustained increase in renewable electricity generation. As such, we anticipate a levelling off of the hydroelectric and nuclear plants share in overall production, a decrease of natural gas share by up to 53% (in line with the most optimistic scenario of the ‘energy independence’ attribute), a decrease of coal by more than 25% (partly substituted through an increased share of biomass) and the elimination of oil as a fuel for

electricity generation. All these changes will be substituted by increases in the share of production from wind and solar (and biomass, as a partial substitute for coal). The resulting energy mix scenarios are presented in Table 3, together with the estimated percentage decrease in externalities.

Based on the results of the projection, we established the levels of this attribute at 10%, 15%, 20% and 25%. These values were chosen because they are more aesthetically pleasing and easier to understand for the respondents.

Table 3. Progressive scenarios regarding the evolution of the energy mix and resulting change in total externalities

| Technology | Share of generation mix (2017-2018 avg.) | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 |
|--------------------------------|------------------------------------------|------------|-------------|-------------|-------------|
| Coal | 25.32% | 23% | 21% | 20% | 18% |
| Hydro | 26.57% | 28% | 28% | 28% | 28% |
| Nuclear | 18.14% | 18% | 18% | 18% | 18% |
| Natural gas | 16.74% | 15% | 13% | 11% | 8% |
| Wind | 11.71% | 15% | 18% | 21% | 23% |
| Oil | 0.06% | 0% | 0% | 0% | 0% |
| Solar | 1.35% | 1.70% | 2.10% | 2.3% | 2.8% |
| Biomass | 0.12% | 0.30% | 0.50% | 0.7% | 1.0% |
| Change in externalities | | -8% | -15% | -19% | -26% |

Sources: own proposal based on the discussion above

The “*Increased revenue for rural localities from taxes paid by new energy companies*” is expected to be relevant especially for households located in rural areas. The maximum level for this attribute has been estimated through a series of calculations starting from the current level of GDP and the estimated additional economic growth that can be associated with renewable energy sources (Duscha *et al.*, 2014) and the amount of taxes that such an increase in business revenue can generate for localities. The steps used in the calculation are described in Table 4.

Table 4. Estimation of additional revenue for localities as a result of renewable energy development

| # | Calculation item | Value | Source |
|---|----------------------------------------------------------------|---------|-----------------------------------|
| A | GDP of Romania in 2019 (billion lei) | 1059.80 | World Bank (2020) |
| B | Additional GDP from renewables (%) | 0.85% | Duscha <i>et al.</i> (2014) |
| C | Additional GDP from renewables (billion lei) – $A * B$ | 9.01 | <i>calculated</i> |
| D | Collected VAT returned to local budgets (% of company revenue) | 6.27% | Interviews with local authorities |
| E | Salary income tax (%) | 10% | |
| F | Tax on fixed assets (%) | 1% | |
| G | Expenses (% of energy company revenue) | 91.57% | |

| # | Calculation item | Value | Source |
|---|----------------------------------------------------------------|-------------|-----------------------------------------------|
| H | Personnel salaries (% of expenses) | 6.66% | Yearly balances of renewable energy producers |
| I | Ratio of fixed assets / energy company revenue | 4.81 | |
| J | Additional income from VAT – $C*D$ (billion lei) | 0.55 | <i>calculated</i> |
| K | Additional income from salary tax – $C*E*G*H$ (billion lei) | 0.06 | <i>calculated</i> |
| L | Additional income from fixed asset tax – $C*F*I$ (billion lei) | 0.43 | <i>calculated</i> |
| M | Total additional income – $J+K+L$ (billion lei) | 1.05 | <i>calculated</i> |
| N | Avg. additional income per county – $M/42$ (billion lei) | 0.03 | <i>calculated</i> |
| O | Avg. county budget in the N-E region (billion lei) | 0.35 | County councils' budget projections |
| P | Maximum estimated increase in county budget (%) | 7.3% | <i>calculated</i> |

Sources: own calculations based on World Bank (2020) and Duscha *et al.* (2014)

In the case of items D, E and F we conducted interviews with representatives of local authorities, who provided estimative figures based on existing legislation and past budget performances. In order to obtain the figures for items G, H and I we collected and analyzed the yearly balances of a sample of 98 of the 101 companies listed by the Romanian Energy Regulatory Authority as being producers of electricity from renewable sources (ANRE, 2019). The data for item O was computed based on the start-year projected budget for 2019 for the county councils of Bacău, Botoșani, Iași, Neamț, Suceava and Vaslui, which comprise the North-East region of Romania – the target population of our choice experiment study.

Based on the results of our calculation, we chose a maximum level of 7% for the fifth attribute, with the other levels being 1%, 3%, 5% and 7%.

Table 5. Summary of the attributes and levels included in the discrete choice experiment

| Attribute | Status quo | Level 1 | Level 2 | Level 3 | Level 4 |
|--------------------------------------------------------------------------------|------------|---------|---------|---------|---------|
| Additional cost of the monthly electricity bill | 0 lei | 5 lei | 15 lei | 25 lei | 35 lei |
| Romania's independence from energy imports (coal, gas, oil, etc.) | 77% | 78% | 80% | 82% | 84% |
| New jobs created at the county level | 0 | 2 | 6 | 12 | 16 |
| Reduction of pollution effects (air, water, soil) | 0% | 10% | 15% | 20% | 25% |
| Increased revenue for rural localities from taxes paid by new energy companies | 0% | 1% | 3% | 5% | 7% |

Sources: own proposal

Table 5 provides a summary of the chosen attributes and the corresponding levels that will be used in the choice experiment. The use of four levels for each

attribute makes the design symmetrical and tends to improve the quality of the fractional factorial design that can be generated.

3. GENERATING THE EXPERIMENTAL DESIGN AND QUESTIONNAIRE

Our experimental design will use the five attributes discussed in the previous section, each with 4 distinct levels, potentially making it a 4^5 factorial design, which would use combinations of 4^5 product/offering profiles. In order to reduce the minimum sample size and to limit the effort of each respondent, we decided to use a design that combines 3 distinct offerings in each choice task. The design will also incorporate a status quo option, through which respondents may decide to not pay any additional fees, resulting in no additional societal benefits. However, each choice set will also require respondents to choose their favorite option out of the non-status-quo profiles. This approach is expected to generate two different WTP models, a short-term one and a medium/long-term one.

In order to generate a high quality fractional factorial design, we utilized the “Balanced Overlap” approach provided by Sawtooth Software’s Lighthouse Studio. The data will be collected using a single questionnaire, as opposed to a set of questionnaires with randomized combinations of profiles across the various choice sets. Due to this limitation, we generated several experimental designs and compared them in terms of balance (each attribute level should appear with a similar frequency as the others) and dominated choice sets (there should not be an offering that has a clearly better cost/benefit ratio compared to the others in the choice set).

Our final result includes 10 choice sets with 3 offerings each, as well as a status-quo option. However, each choice task requires respondents to also choose their favorite option among the three profiles included in the experimental design. In terms of balance, we found that each attribute level appears either 7 or 8 times across all tasks. In order to minimize the incidence of dominated sets, we estimated simple linear utilities for each profile and calculated the difference between the profile with the lowest and the one with the highest utility in each choice set. In the end we chose the design that had the lowest overall differences in utilities within the choice tasks.

Our study uses a questionnaire that, aside from the discrete choice experiment, includes several other questions and scales that are meant to identify factors that influence the WTP of household consumers for renewable energy development. One relevant example is a 10 item True/False/Do not know scale that seeks to measure whether the respondent is knowledgeable regarding the energy sector and the electricity market. Another scale is the 19 item life practices scale used successfully in a market segmentation study of household electricity consumers (Maxim, 2015b). Finally, we have included a series of socio-

demographic questions that are meant to test various hypotheses regarding factors that influence consumers' WTP.

4. CONCLUSIONS AND NEXT STEPS

Determining the WTP of household consumers for the continued development of renewable energy is relevant if Romania is to reach its long term green energy targets. Actors on the recently liberalized market in which electricity suppliers are seeking to attract household consumers through various strategies, including the provision of 'green energy' offerings, may also benefit from the findings of the study.

By implementing the experimental and survey design described in the current paper, we expect not only to measure the WTP of household consumers for renewable electricity, but also to identify some of the key factors that can influence their WTP. We will be able to perform a segmentation based on life practices and, thus, outline the socio-demographic and lifestyle profiles of those consumer segments that are more interested in purchasing renewable electricity at a premium. Finally, we expect to generate scenarios regarding the potential environmental benefits, as well as the preference share for electricity supply offerings on a market that provides both green and conventional options to consumers.

The next step of this research involves the collection of data. This will involve a sample of household consumers of electricity from the North-East region of Romania. The survey will use a quota sampling procedure with two variables: county and type of residence (rural/urban). This sampling approach is expected to provide us with additional insights regarding WTP influence factors allowing post-hoc analyses based on secondary data regarding the communities in which the respondents reside.

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FINTECHS IN ROMANIA: A RISK ANALYSIS FOR THE ROMANIAN CONSUMER

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ABSTRACT

In recent years, technological progress has led to a global, sometimes accelerated, increase in competitiveness in the financial-banking environment, driven, among others, by the entry of non-bank financial services providers. These are the building blocks for an emerging financial industry based on digitalization. Providing, most of the times, more accessible, cheaper and better personalized financial-banking products and services, these FinTech companies attract more and more clients (individuals and legal entities), many of them being loyal customers of the incumbent banking institutions. Differentiating themselves from the already established credit institutions through high-speed innovation and adaptability to customer needs, FinTechs succeed in integrating more and more in our increasingly digitalized society. However, FinTech companies may raise not only attractive opportunities but also a number of risks, which, if not properly addressed, can build-up in the non-banking sector (also known as the 'shadow banking' system) and can then be easily passed on to other components of the financial sector. In this paper, we aim to present how the new financial technology solutions may affect consumers. In other words, we aim to identify the most significant risks for the Romanian consumer coming from FinTech companies.

Keywords: Fintech; banking; financial services; risks; consumers; Romania.

JEL Classification: G21, G22, G23, G24

1. INTRODUCTION

The financial system, seen in all its complexity, could be regarded as a living organism that is continuously transforming, evolving and adapting under the spectrum of various endogenous or exogenous factors. An area which currently registers important advances and (re)shapes the future of the financial system (as we also strongly believe) refers to information technology (IT). The incumbent financial institutions who decided to tap into the potential that IT has to offer, have either reinvented themselves or paved the way for the development and expansion of new and innovative financial services providers often referred to as Financial Technology companies (or *FinTechs*).

As the most recent history has shown us, *traditional banking* and *market-based financing* may not be able to cope with the unmet needs and preferences of willing borrowers and lenders in an environment with fast economic growth. Therefore, non-bank financial intermediation, also known as ‘shadow banking’, comes into play to provide a valuable and viable alternative to the other two forms of credit-based intermediation mentioned above and to help support real economic activity. The existing literature revealed that, prior to the crisis of 2007/2008, the shadow banking sector (of which *FinTechs* belong to) experienced a significant growth both in Europe and the U.S., fulfilling a very important role in lending within the financial system in particular, and the economy as a whole (see Apostoae and Bilan, 2020 for an extensive research on shadow banking with a focus on Central and Eastern Europe). As the global financial crisis emerged, the traditional business model of banking intermediation was challenged, but the shadow banking system flourished (institutions, including *FinTech* companies, grew in complexity and interconnectedness with other financial as well as non-financial entities). With the rise of digital finances, the traditional players in banking and financial services are facing even more substantial transformations (in a context characterized by a rapidly changing economic environment and a network of demanding and expensive regulation requirements, as highlighted by Gomber *et al.*, 2017 and 2018).

The current restrictions regarding social distancing and containment measures (under the COVID-19 pandemic) change even more the financial sector landscape by creating new opportunities for digital financial services to accelerate and enhance financial inclusion (Sahay *et al.*, 2020). In a world where around 1.7 billion people have no access to a bank account, according to the Global Findex database of 2017 (Demirgüç-Kunt *et al.*, 2017), and small- and medium-sized enterprises are still struggling to access finance, *FinTech is sometimes regarded as a panacea*.

Providing, most of the times, more accessible, cheaper and better personalized financial-banking products and services, the *FinTech* companies attract more and more clients (individuals and enterprises), many of them being, up until recently, loyal customers of the incumbent banking institutions. Gomber

et al. (2017) identify three main reasons why this kind of client migration occurs, from well-established providers of financial services to FinTech start-ups and even large IT companies that operate in the financial industry. However, FinTech companies may provide not only tempting opportunities (given their high-speed innovation and adaptability to customer needs) but can also raise a relevant number of risks. If these risks are not properly addressed, they can build-up in the shadow banking sector and can then be passed on to other components of the financial sector. It is in this context that we look into an underexplored phenomenon which intrigues not only the academic community but also the financial industry (Milian *et al.*, 2019; Iwata, 2017; Schueffel, 2016).

Adapting a qualitative analysis methodology on a pros and cons framework, we intend to highlight the most relevant risks to which the consumer of financial services may be exposed to. Although we will look into the global and European status quo, our focus will be nonetheless on the Romanian market. The remaining of the paper is structured as follows: Section 2 deals with the theoretical framework of the concept; Section 3 overviews the FinTech development in the World, in Europe as well as in Romania; Section 4 outlines the most significant potential benefits/opportunities and downsides/risks originating in the FinTech sector (with a focus also on the Romanian case study); Section 5 highlights the risks which are more likely to occur and could be handled with difficulties by a regular consumer (cyber threats). The final section of the paper presents the conclusions and the most important take-aways.

2. THEORETICAL OVERVIEW

After an in-depth survey of the existing literature there is apparently a great variety and different interpretations of what the term *FinTech* means (also found spelled as Fintech, Fin-Tech or fin-tech). This can sometimes raise difficulties in a discussion because two people using the term may be referring to different things. Since it was coined in the scientific literature in 1972 by the vice president of Manufacturers Hanover Trust, Abraham L. Bettinger (1972, p. 62), the term evolved over time, currently being regarded as a neologism that reflects the connection of the modern related technologies (for example, cloud computing, mobile internet) with business activities typical of the financial services industry (Gomber *et al.*, 2017). It was only after 2015 when an increasing interest in the term was noticed, as an online search for the frequency of the “fintech” keyword revealed (Deloitte, 2017).

In this way, it's important to know that the definition used in this current paper is adapted from Schena *et al.* (2018), Berg *et al.* (2020), and Perkins *et al.* (2020) and refers to the technology applied to finance that has the potential to transform the provision of financial services and to improve the efficiency of the financial system for businesses and for consumers alike. These new and improved financial services are provided by companies which operate outside the traditional

business models for financial services and make use of communication technologies, internet and automated processing of information (see Milian *et al.*, 2019 or Arner *et al.*, 2016a and 2017).

There is an important strain of literature that defines FinTech as a new business model. In this respect, Lee *et al.* (2015) attributed to FinTech five principles: low profit margin, light asset, expandability, innovation and easy compliance. Akkizidis and Stagars (2015) identified different innovative business models within FinTech that include: online lending, crowdfunding and crowdfunding, transaction and payment terminals, personal finance management (PFM), digital currency and cryptocurrency (see also Adhami *et al.*, 2018), mobile point of sale (mPOS), robo-advisors and e-banking. Lee and Shin (2018) identified six FinTech business models in the following areas: payment, wealth management, crowdfunding, lending, capital market and insurance services. Liu *et al.* (2020) perform a scientometrics analysis on nine FinTech business models, as follows: online lending, crowdfunding, transaction and payment terminals, personal finance management, digital currency and cryptocurrency, mobile point of sale, robo-advisors, ebanking, InsurTech.

According to D'Agostino and Munafò (2018), although the term may be broadly translated as 'technology applied to finance', the term does not have a clearly defined operational meaning, mainly because FinTech is a cross-sector phenomenon. FinTech could not be reduced to a specific part of the financial system, but refers to a wide range of innovations within the financial system that are made possible by the use of new technologies. FinTech appears to represent what is known as 'technologically enabled financial innovation' rather than being a pre-defined 'industrial' sector. In line with this approach is Arner *et al.* (2016b) who highlight that FinTech refers to "the application of technology to finance", underlining that nowadays, unregulated entities use technology to provide financial solutions that in the past were only offered by regulated financial intermediaries. Also Zetzsche *et al.* (2017) mentions that FinTech in its broadest sense refers to "the use of technology to deliver financial solutions". The use of technology is also at the core in the definition forwarded by Thakor (2020). Ryu (2018) also emphasizes IT's role as a facilitator in his definition of FinTech: "innovative and disruptive financial services where IT is the key factor in nonfinancial companies".

Schena *et al.* (2018) raise a red flag with the distinction that should be made between FinTech companies, as defined up until now, and other companies that are often wrongly included in this group. One sound example in this regard is given by the companies that operate in the technological sector and develop services and useful applications for financial activities (thus aiding or supplying the incumbent banking institutions and not competing with them). For FinTech companies, technology is more a 'tool', an important factor in the production process, whereas, for Tech companies, it is the object of production. When we are

dealing with multi-product companies (or groups) that add one or more digitalized financial services to their production chain, then are we facing TechFin companies. According to Schena *et al.* (2018), unlike FinTechs, “TechFins enter the financial industry with an established customer base acquired from pre-existing activities of a nonfinancial nature and, therefore, they use the information already gathered to develop their offer of financial services”. Zetzsche *et al.* (2017) also considers TechFins more ‘data intermediaries’ as opposed to FinTechs which are rather ‘financial intermediaries’.

Many authorities, organizations or institutions that have contributed to the exploratory path of FinTech, studying its potential and characteristics, tried to provide a definition for this concept. As such, there are some institutional approaches that are worth mentioning. The Financial Stability Board (FSB), for example, defines FinTech as “a technology-enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on the provision of financial services” (FSB, 2017). As such, FSB regards FinTech as a “horizontal” phenomenon that takes place within the financial services sector and harnesses the process of digitalization. This definition has also been adopted by the Basel Committee on Banking Supervision, in part because “this broad definition is considered useful by the BCBS in light of the current fluidity of fintech developments” (Bank for International Settlements, 2018). The International Monetary Fund also subscribes to this definition (Sahay *et al.*, 2020). The European Securities and Markets Authority (the EU securities markets regulator), recognizes FinTech as a “type of financial innovation that relies on Information Technology to function, e.g. internet, cloud etc. and that can result in new business models, applications, processes, products or services with an associated effect on financial markets and institutions and provisions of financial services” (Armstrong, 2018). The European Commission (2017), also, provides a more generic definition of FinTech, understood as “a technology-enabled innovation in financial services, regardless of the nature or size of the provider of the services”. Deloitte (2016) defines the concept as “IT solutions dedicated to the financial sector, covering software technologies provided by any established or emerging entity”.

These are rather either too vague or too narrow definitions, as the attempt to identify with certainty the boundaries of a premature phenomenon is still in progress (a cultural phenomenon rather than a technological one). For an extensive research focused on just extracting a definition of the concept, after reviewing hundreds of papers using the term “fintech” up to 2016, we recommend Schueffel (2016). Even though this ‘sector’ has undergone various changes over time (especially due to political, legislative and geographical regimes), several authors claim that a new era is being born and that it is a phenomenon still to be explored (as expressed by Berger, 2003; DeYoung, 2005; Gábossy, 2016; Iwata, 2017).

The interaction between information technology and financial services is not a new story. Thus, it has been discussed consistently in the past years especially by the academia. For example, Arner *et al.* (2015) identifies three distinct eras during which finance and technology have evolved together, specifically *FinTech 1.0* (from around 1866 to 1967, the financial services industry, while heavily interlinked with technology, remained largely an analogue industry), *FinTech 2.0* (by 1987 financial services at least in developed countries had become not only once again highly globalized, but also digitalized and continued until 2008) and *Fintech 3.0* (from 2008 the financial services industry has been affected by a “perfect storm”, financial, political and public in its source, allowing for a new generation of market participants to establish a new paradigm known today as FinTech, escaping from the domination of traditional regulated financial services industry up to now). Gai *et al.* (2018) made a survey of the FinTech sector by collecting and reviewing contemporary achievements, by which a theoretical data-driven FinTech framework was proposed to facilitate and standardize future FinTech researches and technical deployments. Five technical aspects were identified, which include: a) security and privacy (the main issues of this aspect have been split into three dimensions, which include business operations, outsourcing, and financial privacy), b) data techniques (the big data context), c) hardware and infrastructure (leads the financial business to more value creation directions; however, it also brings challenges), d) applications and management (machine learning techniques that explain the business issues or achieve intelligent analyses, which highly relied on the data), e) and service models (where FinTech mainly influences Financial Service Institutions in two ways: can strengthen FSIs' problem-solving abilities while external development can change the business environment).

Kavuri and Milne (2019), after reviewing over one hundred articles, book chapters and working papers on FinTech, succeeded in providing some relevant research gaps that could be further exploited in scholarly work and policy decision making. Hence, the study identified the following seven gaps: a) structural changes in the financial services industry; b) the rising of a new form of financial intermediation (alternative finance, such as loan-based and equity-based crowd-funding); c) the change of the payment mechanism and the shift to a cashless society; d) the potential of FinTech to reach over the existing barriers in developed and developing countries, e) the involvement of artificial intelligence and machine learning in fund management, f) the interlinkages between the new financial technologies and financial regulation, g) and finally identity, security, data privacy and their regulation in financial services.

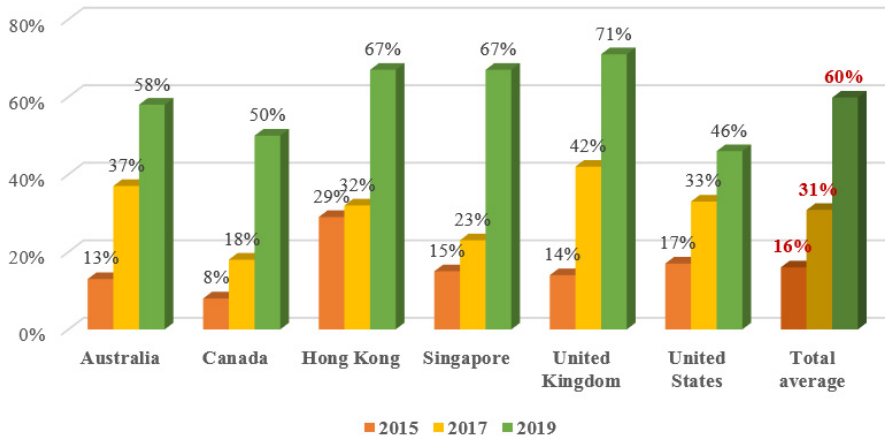
As we can see, various researchers recognize the potential that digital technological innovation has on the structural characteristics of modern economic systems. In the meantime, given the fact that FinTech can reshape the future of the financial industry, some users remain skeptical and aware about adopting

FinTech because of the considerable risks it involves. Bearing this in mind, Kim *et al.* (2008) found that consumers often act based on incomplete and imperfect information. As a result, it often faces some degree of risk or uncertainty. Based on this notion, we realize that there are specific risks that may arise from Fintech. Thereafter, perceiving that it is difficult to accurately gauge the probability of any particular risk materialising, in this paper we will focus on exploring and understanding which are the most common expected threats for the consumer as a result of Fintech adoption.

3. FINTECH IN THE WORLD, IN EUROPE AND IN ROMANIA

As also was stated by Arner *et al.* (2015), the connection between finance and technology has a long lasting history. However, observing the current evolution, it appears we have entered a new phase in the development of the financial technology sector. The approach of many financial institutions has evolved, and they are now seeking to team up with the emerging technology companies to gain access to the “secret sauce” that fosters innovation in IT (Deloitte, 2017). Meanwhile, many FinTechs themselves bloom so rapidly that they are developing a new form of interconnectedness (with other institutions of the financial system). EY (2019) claim that this industry has grown up and grown out in recent years. It is no longer made up of only start-ups, thereby today it became a host of seasoned companies that offer a broad array of financial services at a global scale. Additionally, from an economic point of view and considering the rules of the market, the competitive pressure may further increase as the number of FinTech companies heightens, leading to a rapid growth in operating volumes and an increasing diversification in the financial services offered by these companies (Tanda and Schena, 2019). In the meantime, these changes raise more and more questions whether these waves of innovation are not simply a case of *déjà vu* (Dermine, 2016). Even so, it is difficult and early to anticipate exactly how the structure of this sector will evolve over time. There are many possibilities, such as the fact that new financial services could be bought by banks or become high-level competitors themselves; but what we are aware of is that the market could become much more fragmented and concentrated than it is today, a change which can become the source and nature of risks.

According to EY (2019), the consumption of FinTech services has grown rapidly. Many companies went through multiple fund-raising rounds, increasing their staff, expanding and creating departments such as human resources, accounting as well as legal, and even widened beyond their own domestic markets. Their research is based on multiple surveys made over the course of five years with the focus being on six markets (Australia, Canada, Hong Kong, Singapore, the UK and the US). As a result (Figure 1), the report shows that there is an overall strong growth in FinTech adoption across the analyzed countries (from 16% in 2015, to 31% in 2017, to 60% in 2019).



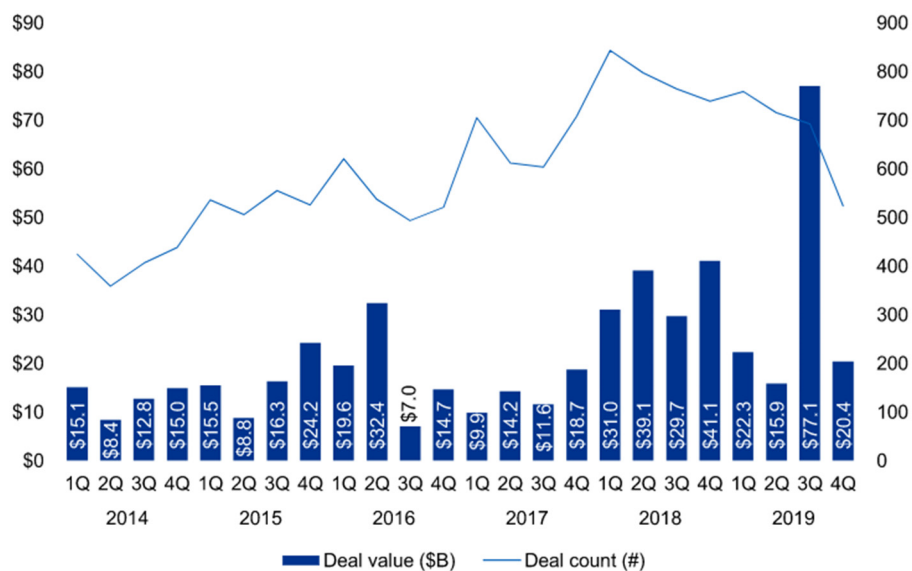
Source: adapted from EY (2019)

Figure 1. Comparison of FinTech adoption in six markets from 2015 to 2019

However, emerging markets are leading the way in FinTech adoption (China and India with 87%, close behind being also Russia and South Africa with 82%). Markets like Netherlands and Singapore are the ones that reflect the FinTech services offered by the old players in the financial sector, namely insurers, stock brokers, banks also being the ones from which the strong adoption comes.

Furthermore, EY (2019) highlights the enormous strength of the global FinTech market in recent times. After a slower start, 2019 rallied to climb up and become one of the most fruitful years on record for the FinTech industry. The volume of assets fell moderately after the first quarter of 2018, but huge-deals still helped contributing to no less than \$135.7 billion invested across 2,693 deals across 2019.

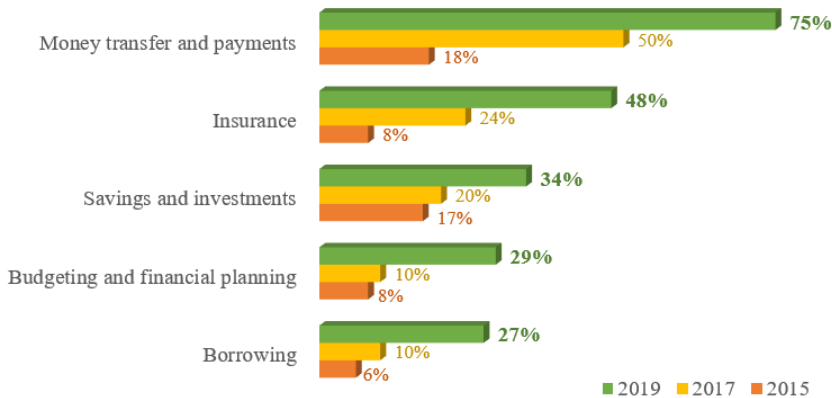
Looking at the total investment activity in FinTech as depicted in Figure 2, we can notice that the third quarter of 2019 has registered a record among the private market transactions, coming up with a colossal sum of \$77.1 billion (as seen in the data provided by KPMG, 2020). A great amount of that was due to the acquisition of Worldpay by Fidelity National Information Services for 42.5 billion. Even if the volume slides down as a result of less completed venture financing, it is not a cause for concern, especially in the context of the robustness of deals. As a result, it's clear that FinTech has caught the attention of the world, both in the adoption and investment sector.



Source: (KPMG, 2020, p. 10)

Figure 2. Total investment activity in FinTech in the World

Looking more on this newly developing global phenomenon, EY (2019) organized FinTech services into five categories: money transfer and payments, savings and investments, budgeting and financial planning, insurance, and borrowing. Even if there are many other services, the study kept the same type of classification to maintain the relevancy of data through the time. Then, they conducted online interviews with more than 27,000 consumers in 27 markets across six continents (ten of those markets being emerging markets, a recognition of the leading role many of these emerging markets play in FinTech adoption). As it can be seen, Figure 3 shows the average percentage of the surveyed consumers who reported one or even more services in that category. Outcome results are quite dynamic: the most popular category that maintained its own position through the time is *money transfer and payments (PayTech)*, where 75% of consumers use at least one service in this category. *Insurance (InsurTech)* also continues to show strong interest, with almost half of consumers using an insurance type of service worldwide (including the usage of a premium comparison site or even buying products linked to insurance). In spite of the fact that these percentages are very high, they do not necessarily indicate that the market is saturated. Also, there is a great potential for development both for the aforementioned categories as well as for *savings and investments (WealthTech)*, respectively *financial planning and loans (Banktech)*.



Source: adapted from EY (2019)

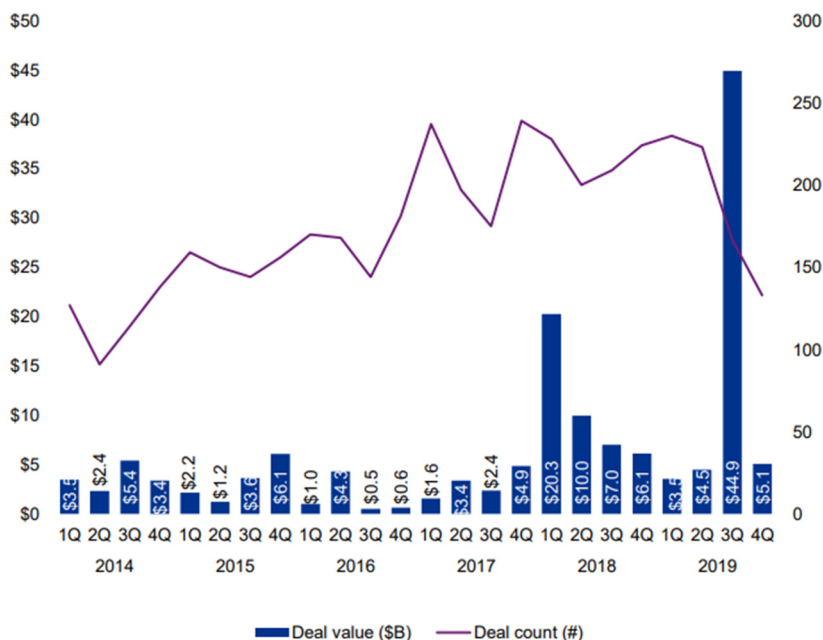
Figure 3. Comparison of FinTech categories ranked by adoption rate

Fundamentally, there are opportunities waiting for further exploration. Considering this, a lot of companies became agile and innovative enough to reach new heights, leaving behind the competition, which is facing strong barriers to enter a market that is already fulfilled with services and products that satisfy customers' needs. Admittedly, those big players got so high, stimulating the development of financial sector (Gabor and Brooks, 2017; Haddad and Hornuf, 2019), that the government intervention is less probable to happen, mostly because the outcome of this action could lead to system risk (Chen, 2016).

H2 Ventures in collaboration with KPMG (2019) develop an yearly analysis entitled “Fintech100”, compiling a top 100 list of the best leading innovators from this sector: a ‘Top 50’ and an ‘Emerging 50’ and highlights those companies globally that are taking advantage of technology and driving disruption within the financial services industry. The selection and rankings were based on data around five core criteria, as follows: 1) average annual capital raised; 2) rate of recent capital raising; 3) geographic diversity; 4) sectoral diversity; 5) X-factor: degree of product, service and business model innovation (a subjective measure that is applied only with respect to companies appearing on the Emerging list). Looking at the companies in top 10, we noticed a large presence of electronic payment solutions due to the potential number of consumers. In such a scenario not only this category of services revealed a strong development, but the entire FinTech sector had a strong adoption rate, a perspective that could lead in the future to even a stronger impact on the financial services industry, to match demand and supply in highly specialized fields.

Keeping in line with global trends, Europe has been progressively adopting FinTech solutions, mostly because there is a gap regarding traditional financial services that needs to be fulfilled with solutions. For instance, it gained substantial

attention from global investors that are looking to expand their reach points to consumers, since there are opportunities waiting to be innovated and implemented. As a result, according to KPMG (2020) this growing phenomenon across all regions, led to numerous fundings during the last years.



Source: (KPMG, 2020, p. 57)

Figure 4. Total investment activity in FinTech in Europe

Looking at Figure 4, we noticed that total investments in Europe increased a lot in recent years in comparison with other previous years. This difference is driven mostly because, as we already observed in Figure 2, the payments processing company Worldpay acquired Fidelity National Information Services. As a result, FinTech activity is for sure growing across many market sectors, becoming a more mature industry, intensified in competition, a key aspect that can lead to more transparency and efficiency. As of this, many players, in numerous European countries, will begin to show a growing interest, that also can help to produce new business models, improving services, products and getting FinTech closer to the individual consumer.

To provide a wider perspective of how big is the level of FinTech development in Europe, Finch Capital in partnership with Dealroom (2019) has released a detailed analytical report, entitled *The State of European Fintech 2019 edition*, based on four verticals of financial technology: banking & payments, insurance, real estate and enabling financial technologies. According to the report,

FinTech is the Europe largest investment category, representing 20% of all global investments and the industry is more active in Europe than in Asia and the USA (Figure 5).

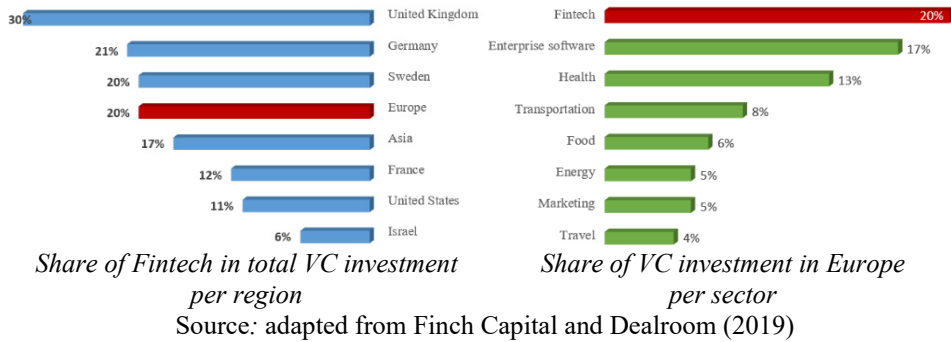


Figure 5. Fintech in Europe

INVYO Insights, a market intelligence platform dedicated to FinTech, provides a ranking of the 50 most valued companies in Europe offering financial technology solutions that are disrupting all the value chain of the banking and insurance industry. Looking at the most recent ranking (2019) we noticed UK having not only the largest number of FinTechs (22 compared to Germany coming 2nd place with 7 companies) but also the most valuable ones, in terms of market value (more than \$29 billion compared to the Netherlands coming 2nd place with around \$8.3 billion). The supremacy of UK in terms of number of FinTechs and their market valuation is also confirmed by a more recent report published by Penn (2020). Bellow we provided an in-depth description of the 10 most valuable FinTechs in Europe.

By shifting our attention to Table 1, we can notice that a big part of the analyzed FinTech solutions had inherently joined the payments industry. Even if there are segmented and distributed differences, the evolutionary growth of this sector is healthy and accelerating as it is enjoying progressively funding attention. The actual benefits are truly recognizable, as this particular overview reveals a significant transition to future opportunities. There is clearly a growing interest that together with the increasing adoption of technology will give an impulse to the analyzed industry and also shape it as it needs to properly be in a world which is continuously changing.

Table 1. Top 10 FinTech Companies in Europe (after market valuation)

| No. | Name | Description |
|-----|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Adyen (Netherlands) [\$22 B] | is recognized as a global payments company that uses innovative tech to facilitate and accelerate payments for fast-growing businesses with over 21 offices worldwide |
| 2. | Nexi (Italy) [\$8.2 B] | leader in payment technology and infrastructure services. It provides best-in-class payment solutions from card payment services, money transfer to more complex services like Corporate Banking. |
| 3. | Klarna (Sweden) [\$5.5 B] | redefines the shopping experience offering convenience, flexibility and control having at its own base the principle "buy now, pay later". This company's workforce is spread in 70 countries and processes more than a million transactions per day. |
| 4. | Greensill (UK) [\$3.5 B] | provides businesses in industries from telecommunications to manufacturing with working capital based on their invoices, allowing them to be paid faster and fulfil the work |
| 5. | Transferwise (UK) [\$3.5 B] | is a cross-border money transfer company which allows customers to make peer-to-peer (P2P) transfers without incurring the exchange fees associated with traditional banking methods |
| 6. | N26 (Germany) [\$3.5 B] | is a full mobile app-based bank account through which users can send, save and manage money easier. It also attempts to conquer the market with ambitious benefits as a great alternative to traditional banks |
| 7. | Oaknorth (UK) [\$2.8 B] | offer solutions to a real market gap, based on machine learning to proactively provide credit responses 10 time faster than traditional institutions |
| 8. | Monzo (UK) [\$2.5 B] | markets itself as a bank accessible directly from smartphones, adapted to the current lifestyle to be comfortable and effective for every customer |
| 9. | Funding Circle (UK) [\$2.4 B] | offers peer-to-peer investors the opportunity to lend to hundreds businesses at a time, remaining remain open to individual (accredited) investors |
| 10. | Izettle (Sweden) [\$2.2 B] | makes small businesses easier to accept card payments via both app and card reader to create a full mobile point of sale anywhere as long as there is an internet connection |

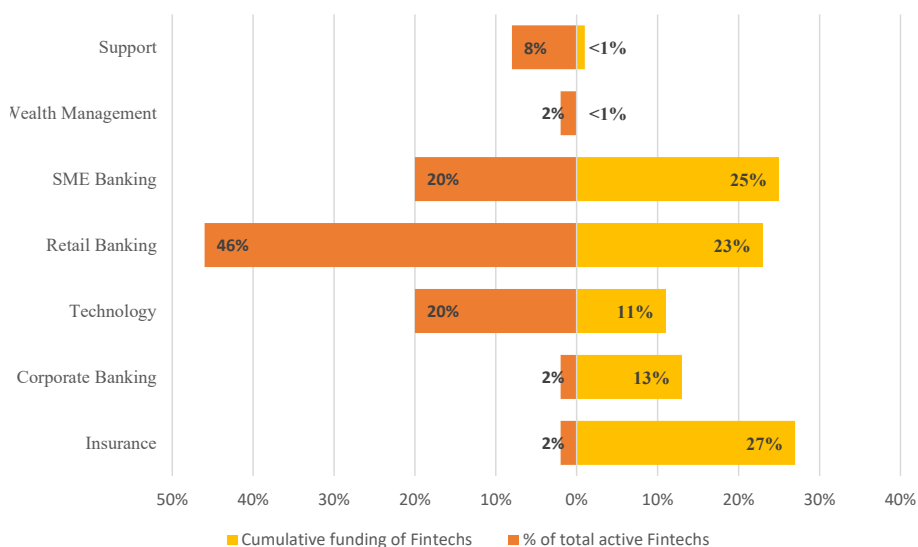
Note: () country of origin; [] market valuation

Source: authors' contribution using data from INVYO Insights (2019)

Now that we have seen the importance of FinTech at a global level (and especially at the European level) for the overall financial development, let's take a look at the status-quo of these financial technology companies in Romania. Here, digitalization continues to be the key driver in the FinTech (r)evolution.

Digitalization evolved across the region proportionally with the development and adoption of the internet. As of 2020, 15.35 million people were using the internet on a device, 80% being the percentage from the total population, with a 1.9% annual growth in the number of users and 7h 21m being the average of daily time spent online.

According to CEE Fintech Atlas, a report which provides a profound overview of fintech ecosystems in Central and Eastern Europe (Raiffeisen Bank International, 2019), from the 50 FinTech companies analyzed in Romania, 46% offer Retail Banking services, 20% technology, 20% SME Banking, and the rest of companies are active in various and diversified fields, namely Support, Wealth Management, Insurance, Corporate Banking. The report also points out that cumulative funding from 2008 to 2019 is 14 million euros, in the following areas: Insurance (28%), SME Banking (28%), Retail Banking (23%), Corporate Banking (13%) and Technology (11%).



Source: (Raiffeisen Bank International, 2019)

Figure 6. Size of FinTech in Romania

Currently, the structure of the Romanian financial system is directly exposed to the interchangeable expansion and contraction of the FinTech sector which again and again tries to reshape the existing infrastructure of financial instruments. Even if we consider all the strengths that Romania has, this new phenomenon might imply some problems that need to be solved through a serious analysis and curative measures from the responsible parties (Deloitte, 2017).

One thing is certain: the FinTech industry in Romania increases rapidly and intensely (a vertically as well as horizontally growth). In this circumstance, Romania can harness this growth using the strong points it has. There is a highly skilled workforce in the IT field and the cost with this labor force is relatively small (compared to the western European countries), sufficiently to attract not only new investments but also to fill the eventual gaps in such a market with high potential. Nonetheless, some downsides remain that could hinder the development of the FinTech sector: bureaucracy, corruption, possible errors due to the human factor and time delays, lack of financial education of the population (Bălțoi, 2020).

4. FINTECH PROS AND CONS

At its core, in its own simplicity, the development of FinTech is a continuum process. And what is this ‘continuum’ being fueled by? Innovation. In addition, ‘continuum’ and ‘innovation’ can be conceptualized, resulting in a new and bigger theory: ‘innovation spiral’, a natural sequence of innovations. When new business models are created, there is an increased chance that additional innovation will follow, enabling the existence of a greater potential development of the system (Schindler, 2017).

Based on this point of view, one of the main challenges for financial technology is to define the boundaries of the market which is not only in a continuous state of evolution, but is undermined by frictions (FSB, 2017), induced by the activity already illustrated above. Considering this, we find that FinTechs tend to have not only unique advantages that are proving to be of great value, but also some drawbacks that foster significant disadvantages which compete with the benefits.

For this purpose, starting from the functional perspective presented above, we propose an overview of the most relevant strong and weak aspects of FinTech identified in the literature. Throughout it is possible to identify some asymmetries that are in essence important determinants of the sector stability. So, having this in mind, we have consulted a series of papers, mainly to mark out and provide a framework of potential positive and negative outcomes/effects. As a result, the main findings that can be drawn from this study are presented in Tables 2 and 3 (bear in mind that, although the literature is abundant, we focused only on the four most recent and most relevant works in the field given that these encompass what has already been researched).

A general observation from the advantages summarised above suggests that FinTech is an industry with a great potential to impact the financial sector in a way that it can wide its perimeter and create new entrants based on customers' interest and preferences. Accordingly, it can be considered that the way business is done will change in every possible way, mostly because those perceived benefits would provide, through the transmission channel named “innovation”, enough momentum to induce a higher market development and include mechanisms to ensure the sustainability of the entire ecosystem. In this context,

advantages like diversification, transparency, cost savings, increased accessibility, and not only, could contribute to the transformation of modern culture and financial landscape, both in the short-term as well as in the long-term circumstances. The progress of FinTech made in recent years, with an increasing speed in the entire world, is a proof too that shows us how far this industry could go. For example, the financial industry was among the first to experiment automation processes. From the adoption of ATMs to the introduction of electronic trading platforms, the diffusion of new technologies has influenced - in different forms and with increasing intensity - the various sectors of banking and financial intermediation. However, the actual and potential changes that we are witnessing and participating today seem to assume new undiscovered future possibilities.

Table 2. Significant potential benefits/opportunities originating in FinTechs

| Source | Potential benefits/opportunities |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FSB (2017) | <ul style="list-style-type: none"> - decentralization and diversification - greater efficiency, competition and resilience of the financial system - greater financial inclusion and economic growth - access to financial services |
| Ryu (2018) | <ul style="list-style-type: none"> - increased transparency - reducing costs or cutting middlemen - information more accessible |
| Sahay <i>et al.</i> (2020) | <ul style="list-style-type: none"> - governments can reach (quickly and securely) people and businesses - supports growth and stability - create income and employment, and reduce inequalities in financial access |
| Perkins <i>et al.</i> (2020) | <ul style="list-style-type: none"> - cost savings - increased accessibility |

Source: authors' own research

In addition, FinTech through increased accessibility, financial inclusion and growth (already highlighted above) simplifies the use of financial services as much as possible, allowing operations to be carried out at any time and wherever there is an internet connection, through a device. For this reason, the benefits illustrated in the above-mentioned table can be considered driving forces that could lead to a society organically connected with FinTech. As a result, not only the demand will show a positive growth for services available over this industry, but innovations could open up new business opportunities and significantly reduce the cost of new initiatives, a trigger that might lead to the birth of new ingenious business models which, by their nature, will bring, as already demonstrated, the financial and technological fields together and make a step forward to more tangible objectives.

Table 3. Significant potential downsides/risks originating in FinTechs

| Source | Potential downsides/risks |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FSB (2017) | <i>Microfinancial risks:</i> - credit risk & leverage - financial (liquidity & maturity mismatch) - operational risk (cyber risks) <i>Macrofinancial risks:</i> - contagion (increased interconnectedness) - excess volatility & greater risk-taking |
| Ryu (2018) | - financial (loss of financial outcome and extra fee) - regulation (legal uncertainty for adoption) - security & privacy (vulnerability of security techs) - operational (inadequate processes or systems) |
| Sahay <i>et al.</i> (2020) | - financial stability risks - inappropriate lending practices - consequences of a demise in trust in digital tech |
| Perkins <i>et al.</i> (2020) | - generate unexpected losses - compliance with consumer-protection laws - cyber risks (data can be stolen) |

Source: authors' own research

The rise of FinTech it's not only about benefits and opportunities, but also about downsides and potential risks that could arise and hinder both demand and supply. It is clear that our economy it's constantly changing, while firms are constantly struggling to seek growth for their business. This underlines an important aspect that's likely to potentially increase in the future, namely procyclicality and excess volatility of threats, given that there are a lot of frictions in this industry (as already discussed). So, it's clear that this could or may lead (depending on circumstances) to a rise of stress events. As a result of this perception, we identified the most common negative externalities, downsides and potential risks) found in research papers which are inherent to the FinTech sector and have a high probability of impacting the systemic financial stability (Table 3). Nowadays, it is too early to see how threats will emerge in the current market conditions, by taking into consideration competition and contestability, FinTech is going to face a high volatility without a proper legacy framework. For example, according to FSB (2017) there are two big components in the entire framework, namely *microfinancial* and *macrofinancial risks*. The first include individual firms, financial market infrastructures or even sectors that are associated with a high possibility of facing risks. The second one is an area where the impact of a risk could cause a wave of shocks to the entire financial system, a fact that raises uncertainty when it comes to financial stability. This general observation is based mostly on the current state of evolution of FinTech which already is leading to particularly considerable instability. As for this, it's primordial to monitor changes

in both micro- and macro-financial systems already discussed above. Furthermore, the speed of change together with data gaps could place this environment in a particularly difficult situation. Consequently, we need to look beyond and take a step forward to regulatory approaches, pursued by national authorities. Even if there is a clear focus on benefits like financial inclusion, innovation and diversification, it's extremely important to be aware of the potential risks and their interlinkages. Given this context, it would be relevant to know what vulnerabilities are most likely to happen based on collected data and identify how far those risks managed to get.

Taken into consideration what has already been identified in the literature and considering the particularities of the Romanian financial system as well as the specific features of the Romanian FinTech companies, we depicted a series of tailor-made potential benefits/opportunities and downsides/risks for Romania. As Table 4 shows there are some aspects that are highly important and should be taken into consideration in order to identify how the Romanian financial system will evolve in the future, when FinTech is around the corner with new and improved financial services.

Table 4. Significant potential benefits/opportunities and downsides/risks for Romania originating in the FinTech sector

| Potential benefits/opportunities | Potential downsides/risks |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Improved financial inclusion (by increasing financial provision) | Consumer protection related issues (via lack of financial literacy) |
| Increased financial stability (by bringing customers into the formal financial system) | Scale and connectivity related risks (via various channels) |
| Higher effectiveness & efficiency (via wider innovation) | Operational risks (mainly cyber-security incidents) |
| Cheaper and more inclusive financial services (via reducing the need of cash) | The resilience of incumbent financial institutions (via higher competition within financial system) |

Source: authors' own research

With regard to the potential benefits that FinTech can provide for the Romanian financial market and for the Romanian consumer of financial products and services we have identified the following:

- **Improved financial inclusion.** Broadly speaking, this refers to individuals and businesses that are able to access financial services, respectively products according to their own needs. It's an important aspect mostly because, in the context of financial technology, is a key enabler to escape from a poorly managed financial bubble and effectively move to a better approach that increases everything when it comes to overall reliability. FinTechs can provide financial products and services where incumbent credit institutions either do not have

access (geographical or psychological restrictions) or do not what to offer their products and services (for cost – efficiency reasons, for example).

- **Increased financial stability.** It's clear that FinTech has become more than involved in the financial system, it is becoming a part of it. Throughout its evolving process, it managed to face a lot of setbacks that made it stronger and currently could be considered a real landscape changer in the financial market, mostly because it succeeds in bringing new entries for customers.

- **Higher effectiveness & efficiency.** Given its agile approach to enhance businesses and create opportunities FinTechs bring, across the financial system, efficiency and effectiveness in the process of capital allocation.

- **Cheaper and more inclusive financial services.** FinTech is creating significant opportunities by reducing or even, in some cases, eliminating the need of using cash. In countries where the access of banks is limited, the technological innovation in the financial sector provided by FinTechs brings new ways of responding to the needs of economic actors. For this reason, the speed of financial inclusion development is increasing at such high levels that not only simple financial instruments get more accessible at affordable costs but there are even filled gaps that traditional financial institutions could not fulfill.

Additional to the benefits identified above, FinTech yields also some possible disadvantages that could potentially cause a disturbance in the real local economy. In this way, considering that the players of this sector are facilitating a rapid growth of the FinTech industry, we can estimate that some characteristics could evolve over time in an unexpected way. Regardless of the different forms FinTech can have, the shades of drawbacks might show an outstanding expansion. Let's take a look at some of the potential downsides/risks that could be exerted by the FinTech sector on the Romanian market:

- **Consumer protection related issues.** With a huge potential to develop new products and services, the innovative character of FinTech has increased the need for data. Considering this, one of the main interests turned out to be the need of getting and filtering information mostly to understand the needs of the consumers. In this way, the number of firms who show a high interest in getting and sharing data with vendors, got so high that it is unclear who owns the gathered records and how abusive are they used for getting better results in this new financial environment. For this special issue there are a lot of unanswered questions related to the unstable landscape that FinTech provides.

- **Scale and connectivity related risks.** Due to the interconnections across the financial system, FinTechs could bring direct exposures to other participants, enhancing the systemic risk. It is crucial to get a deeper understanding of this aspect because the implications are complex and the outcome could not be predicted. In a robust industry, all the parties implied should be aware of a contagion risk. So, a fundamental mechanism should be implemented to prevent such problems and protect the users from the instability impact.

- **Operational risks.** Considering technology itself as an enabling factor, it's clear that FinTech benefits from new business opportunities. Therefore, the sector is highly probable to focus too much in obtaining all the benefits, in a way that a lot of disadvantages could join them and damage the system. For example, cyber-attacks could impact financial services, destabilizing and making them fail to stand back in fast and diversified ways. Accordingly, the entire environment becomes subject to operational risks especially when there is space for external influences, human errors and other related threatening implications or factors associated with active decisions.

- **The resilience of incumbent financial institutions.** In their process of financial intermediation, incumbent institutions face grate challenges from the FinTech industry. The financial landscape as well as the overall economy are continuously changing and new trends appear in a cyclical like manner; incumbent banks must be aware of all these paradigm shifts and react in order to survive and thrive. Till now, credit institutions managed to hold on but are continuously threatened by the swift adaptability of the FinTech sector which manages to pose a real threat. The increasing competition could lead to risk-taking actions (for incumbent financial institutions as well as FinTechs alike) as a response to confronting with new standards.

5. FINTECH RISKS FOR THE ROMANIAN CONSUMER: A FOCUS ON CYBER THREATS

We discussed at the beginning of this paper about the huge and increasing number of factors that compete to foster the development of a new branch in the financial services sector, namely FinTechs. As such, to understand the composition of the FinTech ecosystem, we explored its main foundation through section 3, then we covered up its current ups and downs in section 4 (with a focus on the Romanian case study). Considering the above, it's clear that services and products from this segment promises not only advantages (as lower costs, better financial management, fast access to resources, financial inclusion and avoidance of fees), but also hidden or maybe unintended consequences too. So, just because a product appears to be different it doesn't imply that it's also safe. Consumers must be aware and critically asses, balancing both positive and negative effects, because one of them could materialize more in comparison with the other one, fueling uncertainty.

Furthermore, even if there are enough red-flags that researchers raise with regard to the FinTech sector, the COVID-19 pandemic created a context which accelerated even more the demand for technological innovation in the financial sector (and for products and services from the FinTech sector, respectively). Coming back to these red-flags, the main risks that a regular Romanian consumer faces could be divided into three main groups: *cyber threats*, *data privacy risks*, and *other new forms of risks based on credit, deposits, payments and financial*

management related products and services. These pitfalls of FinTechs are intensified by the fact that the market is highly concentrated and interconnected. We will focus our attention on the risks which are more likely to occur and could be handled with difficulties by a regular consumer (also regarded on average, most of the times, in the European rankings on financial education, as an illiterate one), namely *cyber threats*.

The cybersecurity risk is one of the most significant threats that continues to grow and provide potentially catastrophic consequences for the Romanian consumer. The breach here is provided mostly by the wide range of opportunities (via FinTechs) which hackers could take advantage of. The infrastructure upon which FinTech relies could face consequences capable of snowballing into destabilization and severe cascading effects for both providers and consumers.

Cyber threats in general could take multiple forms. One of the most known threats of this kind is the 'CIA triad', composed of three most critical components of security: confidentiality, integrity, and availability (Sherman *et al.*, 2018). Confidentiality issues arise when private information within a company is disclosed to third parties. Integrity issues refer to the improper use of systems, such as fraud. Finally, availability issues are related to business interruption. With this, new risks and problems could arise, like direct, reputational, and litigious financial losses.

There are many hidden risks in this industry. For example, the integration of FinTech services into existing banking solutions has raised a serious concern for data security. The rapid growth of digital platforms has also made the FinTech industry and its customers vulnerable to various hacking illegal access to IT networks. Therefore, it is important to be aware of what the most common risks are when it comes to FinTech. A list in this regard is provided bellow (although not exhaustive):

- *malware attacks*: are the most prominent security vulnerabilities prevalent in the global market. Hackers mostly target the SWIFT system, which is used by banks and organizations to securely transfer information about financial transactions. Hackers take advantage of weaknesses to launch malicious attacks.

- *data leaks*: we all know that data plays a crucial role in every industry regardless of their field. And when it comes to banks and other financial institutions, data automatically becomes a major issue. However, with the existence of inefficient fintech systems, data problems have increased to a great extent. Details such as card information and other user details are readily available to hackers who perform online actions prone to identity theft. Partner financial institutions with third parties may incur losses due to inefficient fintech services.

- *digital identity theft*: with the introduction of digital tools in the banking and financial industry, the use of mobile-based services that use unique passwords and security codes has increased dramatically. These security codes and passwords are not as secure and can be easily accessed by a hacker.

- *money laundering*: FinTech-based banks often use cryptocurrencies to conduct financial transactions. These cryptocurrencies are an integral part of the fintech ecosystem and are not formally regulated by any set of global standards and regulations. Therefore, the frequent use of unregulated currencies leads to illegal money laundering and even terrorist financing. As it is not possible to identify the beneficiary in any transaction, money laundering operations obtain sufficient support from FinTech services.

- *cloud technology-based security risks*: cloud-based solutions are one of the significant aspects of the FinTech industry. From payment gateways and digital wallets to securing online payments, cloud computing services offer everything in the FinTech ecosystem. Maintaining the confidentiality and security of financial data is essential in this case. Even though cloud-based services are considered a secure way of storing data, the lack of adequate security measures can lead to corruption of customer information. There are cases where some companies enter into a partnership with an inefficient cloud-based solution provider and then everyone involved suffers disastrous effects.

- *DDoS attacks*: a common method of disrupting the financial operations of FinTech companies is the DDoS attack, through which a hacker sends a large influx of traffic to a network or server to overwhelm the system and the ability to operate. For example, on August 10 and 11, 2011, the Hong Kong Stock Exchange news site went offline. The stock exchange had to suspend trading in the shares of seven companies to repair the repercussions of the attack

So, even if FinTech generates new benefits, it induces new risks for customers or intensifies the already existing, traditional ones.

6. CONCLUSIONS

While FinTech is attracting a lot of interest through its revolutionary way to combine new technology with financial services, we are aware that it's not a new story. There is no doubt that proliferation of technical advance and communication leads to a new digital revolution. So, as expected, FinTech has become an important focal point of the financial ecosystem, enabling a fruitful use of innovation and engaging solutions. To top it off, the unexpected COVID-19 pandemic crisis happened. And this has brought, in a short-time frame, an increased and underestimated need of digital financial services, putting even more pressure on the already accelerated growth of the sector.

The remarkable evolution of the FinTech sector outpaces even the traditional banking industry to an extent that the sector had the ability not only to convert a strong believer of traditional banking products into a consumer of digital financial services, but also bite strongly in the incumbent credit institutions targeted clientele. As such, in the eyes of the consumer, it's clear that FinTech provides unique advantages that allows it to create not only value in the environment it belongs to, but it has a huge number of attributes capable of providing significant

benefits that meet the consumer needs. Opposite to the enormous opportunities that this FinTech sector might bring, technologically enabled innovation in the financial field also brings considerable new threats or enhances the already existing ones. Thus, many average consumers and even some advanced users could overlook what might be hiding in the shadow of such a sector, namely the risks. So, it is of vital importance to take notice of this rapidly changing financial landscape, as a high number of questions still remain answered.

It is in this context in which the current paper was developed with the intention to bring into the spotlight some of the most relevant risks to which the consumer of financial services may be exposed to. The manuscript provided at the beginning an overview about what FinTech really means studying its potential and characteristics, trying in turn to provide a meaning for this term. In this way, we concluded that there are as many definitions of this term in the specialized literature as there are products and services present in the sector. For this reason, we believe that there are a lot of unexplored areas continuously changing the financial architecture. Then we highlighted how big and concentrated this sector has become at a global, European and Romanian level in accordance with the evolution of innovation through digitalization and how it has substantially changed the financial system alongside the markets.

In addition, we underlined not only the most common international advantages and opportunities brought by FinTechs, but the downsides and risks too. We highlighted that there are a lot of frictions in this industry and as a result, it has been perceived that there is not sufficient to identify the most frequent current benefits, respectively risks at a worldwide level. The FinTech sector is constantly changing and given this aspect we arrived at the conclusion that locally, for the Romanian consumer of FinTech, it's necessary and important to take notice of a specific portfolio of benefits and opportunities (*improved financial inclusion, increased financial stability, higher effectiveness & efficiency, cheaper and more inclusive financial services*) as well as potential downsides and risks (*consumer protection related issues, scale and connectivity risks, operational risks the resilience of incumbent financial institutions*). It is true nonetheless that Romania does not face as many challenges as the global and EU market are encountering, but, through them, we can take a look and learn how to decrease the chances of facing the same risks and at the same time to benefit from the advantages FinTech provides through innovation.

We also hypothesized that technology could be the main factor that has the potential to raise the biggest risks that a consumer of financial services could face. We believe that cybersecurity risks represent one of the most significant threats that continues to grow and has the potential to foster catastrophic consequences. As such, we examined and explained in detail these forms of vulnerabilities (*malware attacks, data leaks, digital identity theft, money laundering, cloud technology-based risks, DDoS attacks, system risk*) and provided an appropriate framework that

showed how severe and abrupt could be the consequences of FinTech for the Romanian consumer, respectively, what negative outputs could arise.

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THE ROLE OF FINANCIAL AUDIT IN DETECTING ECONOMIC FRAUD

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ABSTRACT

The purpose of this paper is to investigate the role played by the audit missions in detecting economic fraud. Making a foray into the history of accounting and audit, this paper aims to make known the importance of audit activities in the economic life of a business entity, and not only.

This paper presents a theoretical approach to the concept of audit, explaining how audit missions can detect economic frauds, completed by series of practical examples to illustrate cases of fraud (or suspicion of fraud) that continue to pose challenges for the experts.

The incursion into the field of audit brought to attention it's role in the economic and social life worldwide, the way to insure investors in the business capital and the government, as the main user of financial and accounting information presented through financial reports.

The prevention and detection of fraud has to begin with the phychological part of a fraud. Knowing why a fraud is made represents the first key in eradication of fraudulent actions, regarding business environment. The triangle of fraud, the role played by the European Union in establishing the typologies of fraud and the main activities that are suspected to be fraud are part of the economic fraud solution.

Keywords: economic fraud; audit; fraud triangle; history of accounting; COCOF.

JEL Classification: G01

1. INTRODUCTION

Illicit and immoral, the concept of theft is represented by an action that has been in our lives since the beginning of humanity. Subconsciously, or intentionally, theft amounts both an act of theft of property and a deception for a second party, known in the literature as injured party. The deception that comes with the theft is called *fraud*, which can take various forms, starting from the same hypothesis.

This paper aims to analyze the concept of fraud in close correlation with the concept of theft. Thus, starting from the definition, this paper aims to characterize, describe, and define in one hand the causes that make possible the occurrence of fraud, the impact it has and, when we refer to the effects we will refer to the influencing factors, the legislative treatment of the concept of fraud, and the manifestations of fraud.

When we refer to the economic field, we often refer to money. Money, as the only current way of trading goods and services, has known in their history various forms of transposition and implicitly has been subjected to most acts of theft and fraud. The motivation for stealing money and cash equivalents lies in the tacit approval of the population on the value they bear, with the necessary guarantees (royal, governmental, local, regional, statal, etc.).

The history of accounting begins as a result of these embezzlement events, its stated role being to reduce, and why not, to eradicate illicit actions by assessing, measuring, managing, knowing and controlling on the one hand the assets represented by those elements which take part directly or indirectly in the productive process, and on the other hand of the elements of equity and debts, as a result of acquiring assets. Once with the evolution of consumer society, the ways of fraud have increased in intensity and inventiveness, being necessary to adapt accounting to new ways of doing business and the inventiveness of theft and fraud.

The accounting science has known numerous changes over time, adapted in particular to the transformation of the business environment and the ways of trading. Once with the emergence of a large number of businesses in the public sphere and in relations with state departments, an additional way of controlling the transactions was needed, in parallel with the related accounting records (notes).

With the development of the business environment, there was a „monopoly” of accounting in terms of registered economic transactions, subject to taxation. There was the problem of a risk of fraud arising even from economic events stipulated by the accounting policy and recordings, thus requiring a third party to confirm or deny the correctness of economic transactions in the „lifetime” of a legal person. Based on this principle, the financial audit organism is created, with the role of providing a reasonable opinion on the correctness of the economic situation presented by an entity.

2. AUDIT AS A FORM OF CONTROL

Financial audit organisms are not able to provide a 100% confirmed opinion and this is due to the fact that the standard audit procedure does not provide a verification of all accounting operations performed by an economic entity during a financial year, the audit process having considering the ISA norms regarding financial audit (Mărculescu and Viașu, 2010). Given the establishment of a threshold of significance by statistical methods (in audit missions this threshold is

called "materiality"), the statistical procedures for verifying the transactions with the highest share in total sales and professional reasoning (based on logical, mathematical and the auditor's professional experience), results in an assumption of responsibility in the audit missions of maximum 95% (the assumed risk difference of 5% can increase up to 10% in the case of large entities and multinationals, criterion based on internal procedures and business complexity). The impossibility of the auditor's full responsibility for the correctness of the data and information entered in the audited entity's financial statements also lies in the documentation provided to the audit firm by the client (which may result in a risk of misstatement or failure to present complete information); from professional skepticism, this being the premise from which one starts in the audit mission. ISA 240 (IFAC, 2009a) details the premise of professional skepticism from which the auditor should start, noting that while ensuring reasonable assurance of the risk of error, the auditor is responsible for maintaining an adequate level of professional skepticism, taking into account the potential of to distort the information presented and recognizing that standard audit procedures may be effective in detecting errors but not in detecting economic fraud.

The beginnings of accounting represented an important evolution in the consumer society, bringing an extra equity and responsibility among the economic operators of that period. The mentions about the existence of the accounting also refer to a single-entry accounting of the operating costs of the Giza Pyramids, where data on production costs and material requirements are recorded. The evolution of humanity and the multiple changes in both the delimitation of state borders, internal and external wars waged by the great states of the time (Roman Empire, expansion of the Ottoman Empire, invasion of Asian civilizations, etc.) have made the need to account the economic operations to be made precise, clear and concise as possible. The taxation that came with the fair declaration of economic activities, the need to oversize expenses (arising from the need for economic operators to mask embezzlement and tax evasion) and to underestimate income (the surplus resulting from the total non-declaration of income being a other means of tax evasion and economic fraud) brought a negative claim to the accounting field, requiring the intervention of a third party, independent of the state or the economic actor, in order to verify and combat tax evasion, economic fraud and money laundering.

3. THE BEGINNINGS OF FINANCIAL AUDIT

The audit activity is recorded since the beginning of the 13th century in Italy, when the local administration of Pisa felt the need to audit the economic activities taking place in the area by a renowned mathematician at that time, Fibonacci (Wilks and Zimbelman, 2010). In the beginning in the 13th century, auditors had a fee based on the number of errors and frauds discovered.

In the first half of the 20th century, auditors began to receive the first certifications independent of accountants, with auditors initially chosen among them. The audit missions were mainly ordered by the state bodies and by the shareholders or associates of the audited companies.

Since 1970, the scope of audit engagements has gained a wider purpose, lending companies, banks, employers and associations thus falling within the sphere of influence of auditors.

The year 1990 represents the beginning of the great changes in the field of audit, clarifying aspects such as conceptual delimitations, the sphere of influence of the audit, its role in advising public, private or public-private management and ensuring the most efficient management of the resources of the audited entity. Elements such as "corporate governance", "performance audit", "regularity audit" and "system audit" are discussed as an integral part of a more advanced process.

Nowadays, the role of the audit finds its significance in detecting errors, frauds or financial distortions in the final or quarterly reports of an economic entity. With a reasonable assurance, with reservations and professional skepticism, the audit is a key verification tool, vital for the proper functioning of a profit-oriented economic entity, given the elements with significant distortions compared to economic reality. Audit missions made to large companies in the global market ensure efficient management of resources, accounting, fiscal and common law policies, human and IT resources, with a key role in advising and establishing the best course of action. to an economic entity in a volatile and ever-changing market.

However, risk is part of the audit process, being an integral part of it. This raises the question of whether it is able to certify as conclusively as possible the economic reality presented by an entity in the annual financial statements (Schuchter and Levi, 2019). Just as the planning of an audit mission does not aim to completely restore the accounting of a company, the most substantial elements and transactions in the "life" of an enterprise are taken into account because it starts from the premise of a need of management to distort higher value transactions, with the role of distorting the annual financial statements, thus not respecting the fundamental principles of accounting. The rationale behind the high risk of fraud in relation to higher value transactions is that, unlike lower value transactions, they have a significant impact on the presentation and interpretation of the annual financial statements, thus leading to a "reality" desired by the management, with the role either to obtain a lower taxable value, or to obtain bonuses from the Board of Directors of the company, or others.

However, this motivation of the auditor mainly verifies high value transactions raises another question, that of detecting the risk of fraud in the case of repeated transactions of lower value. The audit process is not foreign to the management of large companies, which want to manipulate the data presented in the annual financial statements. Given the auditors verification keys for reporting

and presenting the economic data of a legal entity, it would be easy to understand that the risk of fraud in the case of repetitive transactions of lower value can sometimes be even higher than in the case of value transactions which could attract attention.

How does the auditor verify the correctness of the data in the financial statements in this case? IAS 1 defines the significance threshold as a series of information that, if omitted from presentation or distorted, are capable of influencing future economic decisions of shareholders, associations, employees, public, stock market, state or other actors who have an interest in the audited entity. Thus, by establishing a relevant materiality threshold to influence the future economic decisions of third parties in relation to the entity, the auditor is able to provide a reasonable opinion about the correctness of the annual financial statements. Basically, in establishing the significance threshold, the auditor considers three steps, which is: establishing a preliminary value, quantitatively determining a tolerable error and estimating the expected (probable) errors. Each of these stages is defining for establishing in a fair way the threshold of significance, knowing the effects of distorted information.

Determining the prior value of the significance threshold in the audit is a concept that can be defined as the maximum value of misrepresentations that could include the balance sheet and the profit and loss account, but without leading to a change in the investment policy of the company's shareholders, if exists. In assessing the significance threshold, elements such as the value of assets, income, net profit and gross profit are taken into account. An important element to take into account in setting the significance threshold may be, even if not at first sight, ongoing contractual obligations or promises to purchase / honor service contracts, given that an improper assessment of these elements, although below the threshold of significance, may have a significant impact on the evolution of the entity's economic indicators in the foreseeable future. The most relevant example in this case are the contracts for consideration won by the entity in return for a material favor to the beneficiary, this case being often encountered in public or public-private contracts in countries where corruption reach higher values. Although the value offered as a bribe may be well below the value of the originally chosen significance threshold, the discovery and reporting of fraud may have significant adverse effects on the entity's business continuity following the loss of the contract.

In setting of the materiality threshold must also take into account the profit before tax, its fluctuations and the average of the last three years. The reasoning behind this principle is that of a relevant comparative size in the annual financial statements. For example, if the significance threshold is made, in year N, at a value of 5% of the net profit value of 3 million lei, it would result in a value of the significance threshold of 150,000 lei. Applying the same principle in the year N + 1 where the value of the net profit will be of 250,000 lei, would result a value

of the significance threshold of 12,500 lei and the audit activity will be much extended, totally unjustified.

Determining the tolerable error is a process based on a preliminary value of the significance threshold, distributed sequentially. If the audit procedure is to establish a preliminary value of the threshold to be established, the collection of data and audit evidence will be greatly simplified, taking into account the balance sheets and transactions in that category (customers, suppliers, stocks, etc.).

Estimating hypothetical (probable) errors is a procedure for determining the significance threshold that is performed at the end of the audit engagement, comparing the initially established significance threshold (materiality) with the errors and risks found in the audit sheets, the total errors being both errors identified in the tests, as well as the probable errors. ISA 320 (IFAC, 2009b) refers to the auditor's increased attention, including its policy of making accounting estimates, where required by the rules, as a risk of error / fraud can also be made by applying incorrect accounting reasoning.

4. FINANCIAL AUDIT IN ROMANIA

Before 1989, the concept of financial audit was only a party ideology, in practice it didn't exist. Accounting during the communist period was a standardized, dubious and often overestimated accounting, the general accounting principles representing only advice in the eyes of the person who prepared the balance sheet.

The beginning of communist accounting takes place in 1949, shortly after the establishment of communism in the Romanian space and the establishment of the ideology of centralized economies and S.O.V.R.O.M's. Basically, the communist regime wanted a systematization of accounting reports, in accordance with the information it needed in subsequent statistics.

Since the 1970s, the system has been simplified, introducing unique standardized forms and standardized reports, made on a similar structure.

"Five-year plan in four and a half years" is a concept that has been preserved in current Romanian management and refers to a production pushed to the maximum for growth and development, being practically estimates, deadlines and unrealistic production requirements, beyond physical and physiognomic capabilities of the industry they were targeting. In order to comply with the plan, an overestimation of the production / services performed was needed, this can most easily be done with the help of accounting reports, operational and statistical records and annual financial statements most often represented by the balance sheet. Given the lack of adequate control of financial reporting, coupled with a number of unrealistic requirements for the implementation of extremely oversized plans, accounting did not have the power to accurately reflect the current economic reality of state-owned enterprises.

The post-December economy mainly involved an alignment with the international standards of both accounting and the introduction of the financial audit concept, regulated by IFAC. It is easy to understand why the transition from the single party to the double party, the free capitalist economy that sets the natural price based on supply and demand, competitiveness, economic reality, production cost, finding and retaining customers, industrialization, obscure interests, economic fraud, embezzlement and fraud have made the '90s a fiasco in terms of economic growth, known as inflation rates of 300% in 1992-1993, 1997-1998, failed privatizations, nationalization program, of the type "let's give a factory for a coin", Caritas, FNI and others.

After 1990, the audit in Romania made its presence felt as a need to align the Romanian legislative norms to the international standards. Issues such as financial audit and statutory audit, internal audit, quality audit, regularity audit, system audit and performance audit are regulated.

Starting with the year 2002, by Law no. 672/2002 on public internal audit, internal audit is officially regulated as a transcript of the international IFAC standards in the field. The regulation of the audit methodology in accordance with the international norms facilitated the penetration on the market of the big international audit companies, named in the specialized literature "Big Four, this being also the year of establishment as branches of some of them. Alignment with European norms was not accidental, with the state pursuing accession to the European Union and NATO, transposing their legislation and enforcement rules, thus facilitating entry, showing openness and unity with the Western bloc.

The normative alignment with the European Union standards facilitated Romania, being a strong source of inspiration. Although any change brings some reluctance among practitioners, changes in form and substance in accounting and auditing have proven effective in terms of the cases dealt with, which practitioners would meet with Romania's accession to the European Union in dated January 1, 2007.

Laws change, generations come and go, but economic fraud remains a strong obstacle to the development of a solid economy. Digitization is currently the culmination of the civilization in which we take part, and training in the field of deception must be prepared as such. With few exceptions, the economic field has always managed to keep up with economic fraud, with the inventiveness and intelligence with which they are created.

5. TYPES OF FRAUD

The Association of Authorized Economic Experts in Fraud Investigation (ACFE) uses specific terminology for grouping the types of economic fraud that an organization may face. According to ACFE, economic fraud is divided into three types, with the role of discovering the sensitive points of an organization, as follows:

- Intentional manipulation of financial statements, such as underestimation of income, non-declaration of monetary sources, concealment or overestimation of the company's liquidity, etc.;
- Embezzlement of tangible or intangible assets, where incorrectly categorized, oversized or overvalued expenses can be found, etc.;
- Corruption, where bribes, conflicts of interest, misappropriation of funds, procedures for soliciting manipulated bids, etc. can be found.

The motivation behind committing economic fraud is very well explained by Donald Cressey in the "Fraud Triangle". According to the researcher, there are three elements that define the portrait of the economic offender, summaries of opportunity, justification and financial pressure.

Dr. Donald Cressey defined opportunity as a shortcoming of the internal control system. The presumption that fraud cannot be detected is, in the offender's view, an important consideration in committing the wrongful act. At the same time, fraud can occur in cases where internal controls are not (no longer) performed, or if the responsible staff (most often the management) creates the opportunity to disregard the existing controls.

An individual can formulate a justification of the illegal act by clarifying his acts as reasonable, on the principle it is correct to act in this way, „I deserve this money, my work is undervalued”, etc., these being elements that invoke, in the eyes of the offender, meritocracy, as a justification for the fraud committed.

Financial pressure, as an incentive or motivation, can often be a relevant reason. Financial problems, habits consuming financial resources (gambling, addictions, drug addiction, etc.) can be a strong reason that, in conjunction with the opportunity, can lead to economic fraud.

The key to preventing economic fraud is to "break" this triangle, according to the researcher. Directly impacted by sound internal control systems, the opportunity is the easiest to manage.

6. PRACTICAL EXAMPLES

The financial audit involves a series of activities of analysis, synthesis, grouping and breakdown of economic data and information, in order to provide a reasonable opinion on the correctness of the data entered in the annual financial statements. However, there are situations where professional skepticism and audit checks show their significance, uncovering economic fraud, deficiencies in internal controls, distortions of data and manipulation of financial statements and even staff.

The inventory process is a standard procedure, which usually takes place at the beginning of the audit engagement. The process involves counting some assets, comparing the scriptural quantities with the factual ones. The non-correlation of these quantities may represent a question mark in the auditor's reasoning, as the first sign of fraud (with reference to the fraud triangle stated

above). In many cases, audit procedures detect such inconsistencies, most often assimilated as errors and not fraud. Proven as theft, fraud or omission, such procedures help the auditor to form an opinion about the audited client.

Also in the inventory procedure, the auditor may discover inconsistencies between the quality of the raw materials used in the production process (especially in the food field) and the rules in force or the elements written on the packaging. This is often dictated by the company's management, as a way of deducting expenses, maximizing profits and reducing contributions to the state budget and local budgets as much as possible.

Deception on auto parts, combined or aggregate in the automotive industry is also a type of fraud encountered in the inventory process and related processes, often using lower quality items for so-called premium brands. A conclusive example in this case are car components mounted on new cars of middle and upper comfort classes, often from developing countries, such as non-galvanized sheet metal that rusts very easily, windshields that sag very easily, poor quality plastic elements, etc.

Another particular case of fraud that can be reported in the audit process is a loan agreement concluded between a person and a legal entity, by which the person undertakes to lend the legal entity with a considerable amount of money, without a term of reimbursement, commission or interest charged. Such a loan agreement should be made, at least in theory, for a monetary surplus known as interest. Failure to pay interest, commissions or due dates raises questions about the interest for which this contract was concluded by the parties. Subsequent investigations on the person in question revealed that this person was convicted in several bribery and money laundering proceedings, the property being confiscated. Shortly before the announcement of the sentence, the person concluded the loan agreement with the legal entity in question because there is a friendly relationship between the company's management and the borrower. The problem in this case is the legislative one, in the current legislation there is no explicit normative framework to deal with such cases. Thus, how can creditors recover their capital in such cases? What steps can be taken for a fair recovery process? The legislative procedure does not explain, and the only way to recover the damage is to address the entity to return the money to the direct account of the creditors, or to appeal to the courts in question.

The audit shows its importance especially by expressing an objective opinion on the annual financial statements of an economic organization (Toma, 2012). Having a third party in the process of declaring the economic situation gives an extra confidence to investors and decision makers in the process of capital infusion. Alignment with European standards, the fight against fraud, fraud, money laundering and embezzlement can be greatly reduced with the help of audit elements, taken over and applied as such.

7. CONCLUSIONS

The importance of financial audit has its role in expressing an opinion on the economic situation of a company from the perspective of a third party that has nothing to do with the entity. The relations of belonging between the management of a company and the entity that performs the financial audit are prohibited both by the legislative norms in force and by the Regulations of Operation of the audit activity, established as internal regulation.

The quality of financial reporting has experienced a strong evolution after 1990 in Romania, mainly due to the need to align national and international norms, placing a high emphasis on the concept of transparency, fairness, sincerity and true image.

A brief analysis that emphasizes strictly the evolution of accounting, financial audit and its necessity in the economic sector is sufficient to understand why the communist ideology was a resounding failure in human history, without detailing other aspects of social, community, political nature, of concepts and perceptions.

Accounting and auditing are two concepts in symbiosis that develop in parallel with each other. Changes in accounting developments also entail changes in audit activity, ex aequo. In most cases, changes in the methodological nature and application of accounting or auditing rules come as a response to a risk of fraud discovered (after committing an illicit action by using a vulnerability in the system) or possibly (in this case the risk being calculated before committing any illegal action).

Given the cases of fraud that are expanding in number and methods of development, there is a global trend to extend the area of influence of financial audit not only on medium and large enterprises (listed or not on the stock market), but also on SMEs, being known the tendency of small companies to commit frauds of a predominantly fiscal nature.

Illegal and immoral, the concept of fraud will always be of increasing interest as long as there are vulnerabilities and gaps in internal or external control systems that will give economic offenders the opportunity to take undue advantage.

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CURRENT BASIC LINES OF THE FOREIGN ECONOMIC POLICY OF UKRAINE

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ABSTRACT

This paper focuses on the key lines of the foreign economic policy of Ukraine. The first part pays attention to the current structure of export and import in Ukraine and analyses its main features and possible ways of improvement. The second part is dedicated to the analysis of the legal framework of reforms in the customs service of Ukraine with subsequent consideration of the possible impact of COVID-19 on the foreign trade of Ukraine. The third part assesses the probable risks of foreign trade operations in Ukraine and suggests a set of measures to minimize such risks. The paper concludes by arguing that Ukraine should increase the level of diversification of its export and adhere to a more balanced and purposeful export-import policy in order to improve its standing in foreign economic relations.

Keywords: foreign economic policy; economic development; export and import; customs service; COVID-19 pandemic; digitalization.

JEL Classification: E61

1. INTRODUCTION

Nowadays, nearly every state is involved in global economics, which leads to the increase in trade flows between economic entities as well as to the diversification of markets. The development of foreign economic relations depends on both internal and external factors. The epidemic caused by COVID-19 has negatively influenced the foreign trade perspectives of nearly all states, including Ukraine, because of a sufficient decrease in trade flows. In the case of

Ukraine, notwithstanding that in recent years the country has actively sought to become an influential actor in the foreign economic relations at the regional level implementing a set of reforms in the economic field, its economy still needs urgent improvements directed at improving resistance to changing international economic situation, diversifying its export, digitalizing its economy, and making the economic environment more attractive for the local labor force. The purpose of the article is to analyze the current state of Ukraine's foreign trade relations with regard to the risks and prospects for their development.

2. THE STRUCTURE OF EXPORT AND IMPORT IN FOREIGN TRADE RELATIONS OF UKRAINE

One of the main indicators in the analysis of a state's foreign economic relations is the ratio of export and import to gross domestic product (GDP) used to assess the level of export and import dependence of the economy. In Ukraine, in 2011–2019, import of goods and services amounted to more than 50% of the annual GDP and ranged from 52.1% to 56.4%, while the ratio of export to GDP being less than 50%. These figures indicate that Ukraine's economy heavily depends on imports.

In 2019, Ukraine's foreign trade exports amounted to 50054.6 million US dollars, imports - 60,800.1 million dollars (Ukrstat, 2020). Thus, the negative balance was 107,745 million dollars. These data show a predominance of imports in the structure of Ukraine's foreign trade (55%).

The commodity structure of the key Ukraine's exports in 2019 is the following:

- products of plant origin -25.8%, including grain crops - 19.2%; seed oil - 5.1%
- fats and oils of animal or vegetable origin - 9.5%;
- mineral products (mainly ore) - 9.7%;
- finished food products -6.4%
- products of the chemical industry -4.0%;
- ferrous metals -17.5%;
- machines, equipment, and mechanisms, and electrical equipment -9%.

The commodity structure of the main imports of Ukraine in 2019 is as follows:

- mineral fuels; oil and products - 20%;
- products of the chemical industry -13%;
- machines, equipment, and mechanisms, and electrical equipment -21%;
- land vehicles, aircraft, floating vehicles -10 %.

The above data show that Ukraine's exports are mainly raw materials consisting of intermediate goods with low added value. Compared to 2013, the share of such goods as machinery, equipment and mechanisms, as well as transport facilities decreased from 15 to 9% and from 5 to 2% respectively.

Ukraine's key trading partner is the European Union. In 2018, the share of trade in goods and services with the EU amounted to 41.1% of total trade in Ukraine. In 2019, the EU's share in exports of goods from Ukraine was 42%, agricultural and food products - 33.8%, metallurgical products - 19.1%, mechanical engineering products - 15% chemical products - 3.7% (Export promotion office of Ukraine, 2020).

The trade relations with the United States are based on the US Generalized System of Preferences program that promotes economic growth in developing countries by providing duty-free imports into the US market to certain developing country beneficiaries. As a beneficiary country, Ukraine can export more than 3,500 different goods to the United States within the framework of the duty-free import program. During 2018, the import of Ukraine to the United States amounted to \$ 1.3 billion (Export promotion office of Ukraine, 2020).

In Ukraine, integration in such sectors as the digital economy, trade facilitation, and customs cooperation have been identified as a priority for 2020.

The 5th meeting of the EU-Ukraine Association Council (European Council, 2018) identified the following priorities for integration between Ukraine and the EU:

- sectoral integration (integration into the EU digital and energy markets, simplification of customs procedures in trade with the EU);
- increasing energy efficiency and addressing the climate change challenges;
- bringing the provisions of the Association Agreement in line with the real growth of trade between Ukraine and the EU (including by revising tariffs, duty-free quotas and concluding the Agreement on Conformity Assessment and Acceptability of Industrial Products (ACAA Agreement));
- "decentralization" – the realization of the regional dimension of European integration.

The 6th meeting of the Association Council between Ukraine and the EU resulted in the declaration of the following:

- readiness to continue deepening Ukraine's economic integration and regulatory adaptation with the EU in such sectors as the digital economy, trade facilitation, and customs cooperation;
- reaffirmation of the mutual commitment of the parties to conduct and assist the mission in the preliminary assessment of the Ukrainian quality system and adaptation of national legislation to EU standards in the context of the start of negotiations on the Agreement on Conformity Assessment and Acceptance of Industrial Products;
- focus on the importance of involving the regions of Ukraine in the opening offices of European integration with the indication of the steps of the Ukrainian side aimed to maintain relations between the regions and the EU;
- emphasis on the areas of mutual interest in the field of justice, freedom, and security (integrated border management, national asylum and identification

systems based on biometric means, combating money laundering and terrorist financing, combating organized crime and serious international crimes).

3. THE CUSTOMS SERVICE IN UKRAINE

In pursuance of the Association Agreement in Ukraine there were adopted laws on its accession to the Convention on Joint Transit and Introduction of the NCTS System, Introduction of the Authorized Economic Operator Program and Protection of Intellectual Property Rights in Customs Clearance of Goods. The Law on the regime of joint transit and introduction of the national electronic transit system introduces European transit rules, which will allow companies to use a single customs declaration and a single guarantee for goods transfer from their warehouse to the counterparty which translates into a significant acceleration of goods movement. Ukrainian customs will be preliminarily informed by foreign customs of such transfers, which will allow analyzing transactions' risks. In addition, it will provide for a reasonable determination on the forms of customs control. The Law of Ukraine on Amendments to the Customs Code of Ukraine on Protection of Intellectual Property Rights during Movement of Goods across the Customs Border of Ukraine stipulates approximation of customs legislation of Ukraine in the field of intellectual property protection to standards and practices EU (Verkhovna Rada of Ukraine, 2020). In turn, it increases the level of prevention and counteraction to the movement of counterfeit and pirated goods across the customs border of Ukraine, as well as the acceleration of customs clearance of original goods.

In view of the reform of the tax and customs systems, the State Fiscal Service of Ukraine is subject to division into two independent bodies with the corresponding improvement of the conceptual directions of reform and action plans for their implementation. The State Fiscal Service has already delegated the relevant powers to the State Tax Service and the State Customs Service to increase the overall efficiency.

Ukraine also seeks to join the international initiative on countering tax evasion. For this purpose, there was adopted the Law of Ukraine on Ratification of the Multilateral Convention on the Implementation of Measures Relating to Tax Agreements for the Purpose of Counteracting the Erosion of the Tax Base and Withdrawal of Profits from Taxation of February 28, 2019 № 2692-VIII (Verkhovna Rada of Ukraine, 2019). Ukraine also continues to update the annexes to the Association Agreement on the Law on the establishment and operation of companies and corporate governance within the framework of the program of the further improvement of business policy.

The outbreak of the COVID-19 pandemic in early 2020, which directly affected global international supplies and reduced world trade forced governments to implement respective trade-related measures. Most states reduced or abolished

import duties and restricted or banned the export of "critical" goods. The WTO trade forecast on the possible consequences of COVID-19 on the global trade provided two crisis scenarios: under the optimistic scenario, the world trade volume in goods is projected to fall by 12.9% and world GDP to decline by 2.5%, while the pessimistic scenario predicts a decrease in trade by 31.9% and GDP - by 8.8% (Isahanova and Pylypenko, 2020). As for now, WTO members, including Ukraine, are engaged in the development of a set of measures directed at addressing the challenges posed by the COVID-19 pandemic via strengthening coordination and cooperation at the international level by ensuring compliance with WTO rules on trade restrictions. Such restrictions should be targeted, proportionate, and transparent. The emphasis should be made on the full functioning of global supply chains and the free circulation of necessary products (including medical and food products). In the context of current international economic situation, it becomes of particular importance for governments to prevent the adoption of unjustified restrictions of the export of agricultural products, which, in turn, may negatively influence food security and public health.

4. THE PROBABLE RISKS OF FOREIGN TRADE OPERATIONS IN UKRAINE

This article assumes the following set of risks of foreign trade operations in Ukraine as the probable one:

1) First, there is the threat of the further reduction of labor resources due to external factors. The growing risk for foreign economic activity in the near future is the drain of labor resources caused both by the internal and external factors. The simplification of employment rules in Germany and the growing additional demand for the Ukrainian labor force in Poland contributes to a new wave of labor migration from Ukraine. However, real steps to address the problem in Ukraine have not yet been taken.

2) Second, there is a lag in the development of the "digital economy" in Ukraine. Notwithstanding that there are indeed significant changes in the field of digitalization of public administration ("a state in smartphone"), Ukraine's position in the international economic arena has not improved because of the little dynamic of digitalization of industrial technologies, the Internet of Things, 3D production, artificial intelligence, and Energy Storage Integration. This significantly undermines Ukraine's export position. Therefore, credit and tax measures are needed to stimulate the digitalization of production and technological processes for private, state-owned enterprises and foreign investors which improves the prospects of Ukraine's positioning in the world division of labor (Sharov, 2020).

3) Third, there is a deterioration of Ukraine's transit perspectives caused by the Nord Stream 2 and Turkish Stream projects, and a corresponding uncertainty of long-term relations with Gazprom. The new EU rules, which set a quantitative

limit at the level of 50% of the relevant volumes for one supplier, also influence the transit position of Ukraine. Uncertainty of active participation in logistics projects poses a risk to Ukraine in the medium term contributing to the emergence of its regional competitors. Therefore, it is important to determine the prospects and continue negotiations on the establishment of a European consortium for the modernization of the Ukrainian gas transportation system.

4) Fourth, there are insufficient changes in the structure of Ukrainian exports that predominantly consist of raw materials and intermediate goods with a relatively low technological component. Given the structure of Ukrainian exports, the economy of a country can be subject to the global volatile price trends due to the long-term decline in commodity prices. One of the main tasks of the secondary sector of the economy is the processing of raw materials, which increases the added value of goods. In turn, this leads to growing export profits and reducing the country's dependence on imports. In developing countries, the negative trade balance is an indicator of low competitiveness of export industries and high dependence of the economy on imports, which is often followed by the devaluation of their currency and subsequent inability to pay for imports.

In this context, one can offer to develop the export of value-added products through the abolishment of the return of the value-added tax to exporters of raw materials. Today, the value-added tax is the main tax of the state budget with its share in the budget revenues being 40%. Moreover, the vast majority of revenues from this tax are derived from the import transactions. Should the value-added tax continue to be reimbursed on all export products, including raw materials, producers will have no incentives to generate added value in the country. We believe that the refund of the value-added tax can be used for exports that are finished consumer products. These measures will spur production with high added value and contributing to selling finished products.

5. CONCLUSION

Foreign trade relations are one of the main factors of economic development. As for now, the development of foreign trade is directly influenced by the vertical specialization of countries and the processes of globalization, which may involve crises caused by pandemics. The low level of diversification of export commodity positions in Ukraine and the predominance of raw material in exports contributes to its dependency on global price fluctuations, increasing the risks of foreign trade operations. In turn, this translates into the low competitiveness of the domestic processing industry of Ukraine the imports of which predominantly consist of oil and refined products. However, in recent years the share of imported engineering products significantly increased that can be a sign of the growing Ukrainian economy's dependence on imports of expensive high-tech products and imported energy.

Nowadays Ukraine needs to elaborate and realize a balanced, purposeful, and effective export-import policy. In this context, it is necessary to implement effective measures directed at changing the structure of Ukrainian exports to increase the volume of products with high added value. For Ukraine, which exports account for about half of GDP, this is one of the most important ways to improve the economic well-being of its population and strengthen its competitive positions in the international market. At the same time, the government of Ukraine needs to develop a set of measures aimed to avoid further labor migration. Ukraine should also focus on the digitalization of its economy in order to attract foreign investors and enhance its positions in the foreign economic relations.

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ANALYSIS OF YOUNG PEOPLE'S ATTITUDES REGARDING SUSTAINABLE BEHAVIOUR UNDER THE IMPACT OF INFLUENCE FACTORS

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ABSTRACT

The tourism sector is one of the main contributors to environmental damage. In this context, there is an increasing emphasis on promoting forms of travel with low environmental impact. Studies conducted globally showed a good understanding and a growing receptivity to sustainable forms of travel among tourists, especially young people. Therefore, this study proposes an analysis of students' perception of ecological destinations and accommodation structures, as a result of influencing factors. The research methodology included the development and application of a personal online questionnaire, based on studies of the literature, and the results showed a good perception of students regarding ecological tourist destinations and accommodation structures. This study is a contribution to the literature on a topic for which the researchers' interest is

growing, in a field for which, at least so far, there has been no significant number of studies in the Romanian literature.

Keywords: young people's attitudes; factors influencing attitudes; sustainable behaviour.

JEL Classification: L8, Q01, Q56, Q57, Z38

1. INTRODUCTION

In the recent decades, the tourism sector has had a high growth, due to tourists' change of preferences, as they have become increasingly interested in art, culture and architecture (Brînză and Butnaru, 2020) and disposable incomes have increased. Veiga *et al.* (2017) showed that tourists' profile changed significantly in the recent years, especially with the change of the generation of tourists. A study conducted by the World Tourism Organization (UNWTO) concluded that the awareness of sustainability is growing continuously (UNWTO, 2019), and that tourists with environmental and sustainability concerns were described in various ways. According to Lee *et al.* (2013), a tourist with sustainability concerns is a tourist who contributes to the conservation of the natural environment by reducing the interference in the local environment.

The study on tourists' behaviour conducted by Werhli *et al.* (2011) shows that there is a growing awareness of the impact of the tourism sector on the environment. Walker and Moscardo (2014) agree that there is currently a great concern about sustainability issues in different segments of tourism product demand. Therefore, the change of tourists' attitudes and behaviour could be a force for the change of tourism in a more sustainable sector (Juvan *et al.*, 2018). Attitudes are one of the main factors considered in identifying sustainable behaviour (Passafaro, 2020). According to Ajzen (1991), attitudes can be used to predict behaviour, being considered its precursors.

Consequently, the purpose of this paper is the analysis of the way in which tourists perceive the ecological destinations and accommodation structures, under the impact of the influencing factors. The content of the paper highlights the important conceptual aspects of the literature as a predictor of sustainable behaviour in the context of factors influencing consumer attitudes. In this sense, in the first part of the research we developed a study of the literature, and in the second part the results of the study are presented and discussed. The end of the paper presents the main conclusions and implications regarding the analysis of young Romanian tourists' attitudes and perceptions regarding their sustainable behaviour in the context of influencing factors. Thus, it is necessary for tourist destinations to prepare and adapt to future tourists' new requirements.

2. LITERATURE REVIEW

2.1. Attitudes and effects on tourists' behaviour

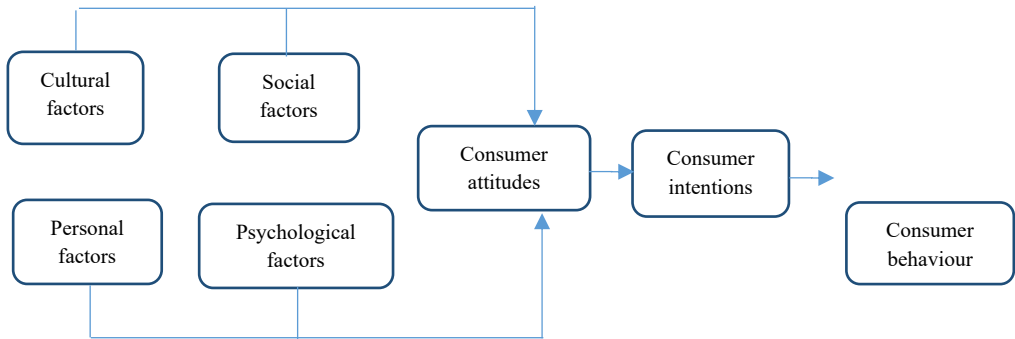
The analysis of sustainable consumer behaviour focused on the description of attitudes and intentions (Wheale and Hinton, 2007). Scientists started to investigate human behaviour which harms the environment more than 50 years ago, and their work was followed by researchers seeking to understand how people relate to the environment (Hawcroft and Milfont, 2010). In order to deepen the study of human behaviour towards nature, Hawcroft and Milfont (2010) identified people's attitudes in relation to the environment, explaining that *attitudes towards the environment are a psychological tendency expressed by the assessment of the natural environment with a certain degree of favour or disadvantage, and they are a construct in the field of environmental psychology, discussed in more than half of all publications in this field*. Thus, attitudes are personal evaluative reactions to socially relevant issues regarding specific objects, events, people, contexts and/or behaviours (Albarracin and Shavitt 2018). In the research conducted by Vermeir and Verbeke (2008), also by Wheale and Hinton (2007), the analysis of sustainable consumer behaviour was based on the study of attitudes and intentions towards ecological products, although for Ajzen (1991) and Hofstede (1991), the behaviour of all actors in tourism is strongly influenced by cultural and moral values, as well as attitudes and other factors. Ajzen's (1991) conclusion shows that the evaluation of a phenomenon is influenced by the individual attitude of the person. Thus, the attitude is considered a predetermined tendency to respond in a positive or negative way to the object of the attitude. According to Kotler and Armstrong (2011), consumers have already specific attitudes regarding products, which influence the likelihood of purchasing the product according to the nature of the attitude.

In the model developed by Ajzen (1991), attitudes develop from people's beliefs and values about the object of attitude. Generally speaking, beliefs and opinions about an object are formed by associating it with certain attributes, i.e., with other objects, characteristics, or events. In the case of attitudes, each belief associates the behaviour with a certain result or attribute (the cost of performing the behaviour). Because the attributes correlated with the behaviour are already evaluated positively or negatively, the acquisition of the attitude towards the behaviour is automatic and simultaneous.

Attitudes are quite complex constructs at their origin, and many of their limitations are directly due to this complexity. In order to be considered by researchers, the introduction of the concept of attitudes can add the understanding of people's behaviour in many areas (including sustainable tourism). For these reasons, theories and research results in social and environmental psychology (where attitude construct appeared) were used to guide this literature review regarding the role of attitudes in behaviour estimation (Passafaro, 2020).

2.2. Analysis of factors influencing tourists' attitudes and behaviour

The studies conducted by Ajzen (1991) and Kotler and Armstrong (2011) focused on the identification of the factors involved in explaining consumer attitudes and behaviour. They were classified into four categories: (1) cultural factors (culture, subculture); (2) social factors (reference group, family, society and state); (3) personal factors (age and stage of the life cycle, occupation, economic circumstances, lifestyle, personality and self-image, education); and (4) psychological factors (motivations, perceptions, preferences, habits and beliefs, etc.). Figure 1 shows the factors and their influence on tourists' attitudes and behaviour regarding sustainability.



Source: Ajzen (1991) and Kotler and Armstrong (2011)

Figure 1. Factors influencing consumer attitudes

Through an extensive literature review, secondary factors (subfactors) are added to the 4 identified factors influencing attitudes and behaviour regarding sustainability. Among the sub-factors, we can see that consumers' concern and a sense of responsibility for environmental issues have a positive impact on the consumers' sustainable behaviour (Makatouni, 2002). Table 1 provides a summary of studies including detailed analyses of factors and sub-factors influencing tourists' attitudes and behaviour on sustainability issues.

Table 1. Factors influencing tourists' attitudes and behaviour

| Factors | Subfactors | Studies |
|----------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cultural | Eating habits, clothing habits, traditions | Hofstede (1991); Kotler and Armstrong (2011); Kotler <i>et al.</i> (2010); Solomon (2009); Czinkota and Ronkainen (2013); Dibb <i>et al.</i> (2012); Peter and Olson (2008) |
| Social | Reference group, family | Peter and Olson (2008); Dibb <i>et al.</i> (2012); Kotler and Armstrong (2011) |
| Personal | Age, occupation, economic circumstances, lifestyle, personality, self-image, knowledge, etc. | Doole <i>et al.</i> (2005); Fraj-Andrés and Martínez-Salinas (2007); Chen and Chang (2012); Wang <i>et al.</i> (2014); Kotler <i>et al.</i> (2010). |
| Psychological | Motivations, perceptions, emotions, habits, beliefs and emotions | Czinkota and Ronkainen (2013); McLeod (2007); Doole <i>et al.</i> (2005) |

Source: computed by the authors

2.2.1. Cultural factors

Culture is a factor which can influence consumers' attitudes, behaviour and decisions (Hofstede, 1991). Cultural factors have a strong impact on buyer behaviour. Given the cultural aspects, people from different parts of the world distinguish themselves by different types of food, clothing, fashion, preferences for different types of architecture, goods with a certain value and/or ethical behaviour, etc. (Kotler *et al.*, 2010). Culture influences consumers' choices, and its effects should not be underestimated (Solomon, 2009), being an important factor in tourism and hospitality, as it determines people's attitudes towards their choice of different tourist destinations, including eating habits and accommodation preferences (Kotler *et al.*, 2010). The analysis of culture has the role of understanding consumers' choices. Keegan and Green (2008) studied the behaviours which in most cases are influenced by values and attitudes determined by culture. Taking into account that the respondents analysed in the questionnaire used for this study are 100% from one country, Romania, they are considered to have the same culture. However, there may be small differences between urban and rural students in their perceptions of ecological destinations and ecological accommodation structures, therefore we propose the following hypotheses:

H1: *Students will perceive differently the ecological destinations according to the environment they come from (rural or urban);*

H2: *Students will perceive differently the ecological accommodation structures according to the environment they come from (rural or urban).*

2.2.2. *Social factors*

Social factors are represented by reference groups and members, family, roles, statutes and online social networks. The latter is the newest factor, which came to life by the creation of social networks allowing remote communication using the Internet. Reference groups are the people whom an individual uses as a reference point, forming a response to purchase stimuli. They can be classified into several types: member groups, primary and secondary groups, formal and informal groups, aspirational and dissociative groups (Peter and Olson, 2008). Primary groups include people with whom the consumer interacts, such as family, friends, colleagues, or neighbours. Groups become more important as a person interacts with them regularly. Secondary groups include religious, professional and trade union cultures, which have less contact with the individual (Dibb *et al.*, 2012). The family is an important factor which influences consumer behaviour in tourism. Taking into account that people are well informed about tourist goods and services through relatives and friends (reference group), this study aims to test the following hypotheses:

H3: *Students will perceive differently ecological destinations according to the reference group (level of education).*

H4: *Students will perceive differently ecological accommodation structures according to the reference group (level of education).*

2.2.3. *Personal factors*

Personal factors include age and life cycle stages, occupation, financial situation, lifestyle, personality and knowledge. First, consumer behaviour is age-related. Preferences and attitudes change over time, such as preferences for travel destinations, cuisine, entertainment, and age-related activities. The family life cycle is a factor which influences the choice of products and services. Thus, business people, managers will choose to be accommodated in a hotel with a higher classification, while office employees will choose an affordable accommodation (Kotler *et al.*, 2010). Lifestyle usually refers to the pattern of human behaviour, and includes hobbies, interests, and values. Fraj-Andrés and Martínez-Salinas (2007) showed that interest in the environment and environmental knowledge have an effect on sustainable attitudes and behaviour. The conclusions of the study conducted by Chen and Chang (2012) show that there is a positive correlation between the consumers' environmental, social and ethical values, as well as their income, or in some cases between their gender and their purchasing behaviour of sustainable products and services. In this context, the following hypotheses are tested:

H5: *Students will perceive differently ecological destinations according to their gender;*

H6: *Students will perceive differently ecological accommodation structures according to their gender;*

H7: *Students will perceive differently ecological destinations according to their family income;*

H8: *Students will perceive differently ecological accommodation structures according to their family income.*

2.2.4. Psychological factors

Psychological factors influence consumer behaviour (Kotler *et al.*, 2010). The analysis of the literature shows that they can be divided into several subfactors, such as: motivations, perceptions, habits, beliefs and emotions. First of all, in order to define motivation, the concept of need must be understood. Needs are classified by Maslow into five categories: physiological or biological needs, safety needs, social or belonging needs, esteem needs, and self-actualisation needs (Czinkota and Ronkainen, 2013). The first level is represented by biological and physiological needs, such as: food, drink, sleep, shelter and warmth. Examples of safety needs are: safety, stability and overcoming fear. In terms of social needs, they are belonging, affection, love and friendship. The last level is represented by the need for esteem and respect, the most important are achievement, status, domination, prestige, self-respect and respect for others. The higher category includes needs for self-actualisation, self-fulfilment, realisation of personal potential, self-accomplishment, and the search for personal development (McLeod, 2007). The motivation process begins with the recognition of needs. When a need is quite tense, it turns into a motive (Kotler *et al.*, 2010). People are considered to be motivated when they act in the desired direction. A company uses reasons to evoke a desire to purchase the product or service (Doole *et al.*, 2005). In the category of psychological factors, habits are included, people acquiring attitudes, opinions and beliefs in their daily routine. Tsakiridou *et al.* (2008) studied the effect of habits on sustainable behaviour, and showed that it could have a negative effect on the purchase of sustainable (ecological) products and services if the habits of the consumer are not related to the purchase of such products. Considering the importance of psychological factors in shaping consumer behaviour, the following hypotheses were formulated:

H9: *Interest in environmental protection and in sustainability and local authenticity will have a positive effect on the perception of ecological destinations;*

H10: *The interest in environmental protection and in sustainability and local authenticity will have a positive effect on the perception of ecological tourist accommodation structures.*

3. RESEARCH METHODOLOGY

In this paper, the quantitative method was used as a research method. The quantitative approach was performed by investigation, using as a data collection

instrument a personal questionnaire, which resulted in 395 questionnaires completed with valid answers. The questionnaire was applied to undergraduate and postgraduate students (master's) from the Faculty of Economics and Business Administration and from the Faculty of Geography and Geology of Alexandru Ioan Cuza University in Iași. The participants were recruited by e-mail. Thus, the interested beneficiaries followed a link to an online survey conducted in Google Forms, where they answered the questions in the questionnaire. The questionnaires were anonymous to ensure the confidentiality and reliability of the data. Eventually, 395 respondents who completed the questionnaires were included in the final analysis. The item measurement scale included a Likert-type construction from 1 to 5 (1 for total disagreement and 5 for total agreement).

This analysis used several work stages on the formulation, application and validation of the questionnaire. Thus, in the first stage we established whether the respondents understood the questions included in the questionnaire. The second stage consisted in the validation of the questionnaire and the extraction of the targeted components based on the factorial analysis. The coherence of the latent variables thus selected was verified using Cronbach's Alpha (CA). In the third stage, regarding the extraction of the factors influencing the perceptions related to the respondents' ecological behaviour, we used the regression-based analysis.

4. RESULTS

As described in the introduction and in the research methodology, the statistical analysis was performed using the data collected by applying the questionnaire to a sample of 395 respondents. We used the statistical program Stata for the statistical analysis. Descriptive statistics show that 299 students belong to the undergraduate program, and 96 students belong to the postgraduate program (master's), and 300 students (75.95%) are female, while 95 students (24.05%) are male (Table 2).

Following the analysis of comparative descriptive statistics, we performed a factorial analysis to identify two latent variables: *young people's perception of ecological destinations*, and *young people's perception of ecological tourist accommodation structures*. To perform a reliable analysis of the factors, the sample size must be sufficiently large. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy can show in advance whether the sample size is sufficiently large to extract reliable factors (Field, 2009). The KMO test indicated a result of 0.922, a good result, while the Bartlett test indicated a p (sig.) value of 0.000. Therefore, the factor analysis showed that for the latent variable *young people's perception of ecological destinations*, the questions which efficiently measure this variable are: **1. Ecological tourism destinations are more attractive to me;** **2. I am willing to pay more to stay in an ecological destination.** For the latent variable *young people's perception of tourist accommodation structures*, the question efficiently measuring this variable is: *To what extent would you consider the*

following aspects in choosing an ecological tourist accommodation structure? **a.** it provides information on the quality of the local environment; **b.** it promotes local products; **c.** it has a high-performance waste recycling system; **d.** it makes efforts to reduce water consumption; **e.** it uses renewable energy).

Table 2. Descriptive statistics

| | | | Number | Percentage (%) |
|------------------|--------------------------------|---------------------------------------|--------|----------------|
| Gender | Male | | 95 | 24.05 |
| | Female | | 300 | 75.95 |
| Education | Undergraduate students | 1 st year | 0 | 0 |
| | | 2 nd year | 279 | 93.31 |
| | | 3 rd year | 20 | 6.69 |
| | Postgraduate students (master) | 1 st year | 33 | 34.38 |
| | | 2 nd year | 63 | 65.63 |
| | Faculty | Economics and Business Administration | 248 | 62.78 |
| | | Geography and Geology | 147 | 37.22 |

Source: our own calculations using the statistical analysis program Stata

By calculating the consistency of the variables using Cronbach's Alpha, we obtained the following results: a coefficient of **0.7871** for the variable *young people's perception of ecological destinations*, and **0.8755** for the variable *young people's perception of ecological tourist accommodation structures*. Finally, to test the hypotheses proposed in this study, we used an ordinal logistic regression model with the following variables, described in Table 3.

Table 3. The description of variables

| Variable | Description | Type | Scale |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------|
| Dependent variables | | | |
| Young people's perception of ecological destinations | 1. Ecological tourism destinations are more attractive to me; 2. I am willing to pay more to stay in an ecological destination. | Likert | 1-5 |
| Young people's perception of ecological tourist accommodation structures | To what extent would you consider the following aspects in choosing an ecological tourist accommodation structure: a. it provides information on the quality of the local environment; b. it promotes local products; c. it has a high-performance waste recycling system; d. it makes efforts to reduce water consumption; e. it uses renewable energy. | Likert | 1-5 |

| Variable | Description | Type | Scale |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------|
| Independent variables | | | |
| Gender | A categorical variable which takes the value 0 when the respondent is a male, and value 1 when the respondent is a female. | Binary | 0-1 |
| Level of education | A categorical variable which takes the value 0 when the respondent is an undergraduate, and value 1 when the respondent is a postgraduate. | Binary | 0-1 |
| Family income | A categorical variable which takes the value 0 when the family income is under 2,000 lei; the value 1 when the family income is between 2,000 and 4,000 lei; the value 2 when the family income is between 4,000 and 6,000 lei; the value 3 when the family income is between 6,000 and 10,000 lei; the value 4 when the family income is over 10,000 lei. | Categorical | |
| Environment (rural or urban) | A categorical variable which takes the value 0 when the respondent comes from the rural environment, and the value 1 when the respondent comes from the urban environment. | Binary | 0-1 |
| Interest in environmental protection | A Likert-type variable where the answers to the item: <i>I pay more for a hotel with high energetic efficiency</i> are scored from 1 for Total disagreement to 5 for Total agreement. | Likert | 1-5 |
| Interest in sustainability | A Likert-type variable where the answers to the item: <i>I consider myself a tourist interested in environmental sustainability</i> are scored from 1 for Total disagreement to 5 for Total agreement. | Likert | 1-5 |
| Interest in local authenticity | A Likert-type variable where the answers to the item: <i>Local authenticity is very important to me when I travel</i> are scored from 1 for Total disagreement to 5 for Total agreement. | Likert | 1-5 |

Source: our own calculations using the statistical analysis program Stata

Table 4 shows the parallel correlations among the variables. The variable *young people's perception of ecological destinations* is significantly and positively correlated with the variable *young people's perception of ecological tourist accommodation structures*. It is also significantly and positively correlated with *gender*, *interest in environmental protection*, *interest in sustainability* and *interest in local authenticity*. The variable *young people's perception of ecological tourist accommodation structures* it is also significantly and positively correlated with *gender*, *interest in environmental protection*, *interest in sustainability* and *interest in local authenticity*, but it is also correlated with the *level of education*. However, even if there are some variables significantly correlated with each other, the correlations are not what we would consider highly correlated (over 0.70), so we can conclude that there is no multicollinearity, i.e., there are no factors to prevent consistent results.

Table 4. Correlations among variables

| | Young people's perception of ecological destinations | Young people's perception of ecological tourist accommodation structures | Gender | Level of education | Family income | Environment (rural or urban) | Interest in environmental protection | Interest in sustainability | Interest in local authenticity |
|--------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------------|----------|--------------------|---------------|------------------------------|--------------------------------------|----------------------------|--------------------------------|
| Young people's perception of ecological destinations | 1.0000 | | | | | | | | |
| Young people's perception of ecological tourist accommodation structures | 0.3575* | 1.0000 | | | | | | | |
| Gender | 0.1619* | 0.0270 | 1.0000 | | | | | | |
| Level of education | 0.0544 | 0.1184* | 0.1117* | 1.0000 | | | | | |
| Family income | 0.0103 | -0.0135 | -0.0801 | 0.4051* | 1.0000 | | | | |
| Environment (rural or urban) | -0.0815 | -0.0654 | -0.1036* | 0.0860 | 0.2413* | 1.0000 | | | |
| Interest in environmental protection | 0.2449* | 0.3509* | 0.0469 | 0.0283 | 0.0220 | -0.0715 | 1.0000 | | |
| Interest in sustainability | 0.4429* | 0.3785* | 0.0615 | 0.0267 | 0.0162 | -0.0909 | 0.3686* | 1.0000 | |
| Interest in local authenticity | 0.3780* | 0.3208* | 0.1384* | 0.1339* | 0.0846 | -0.1083* | 0.3007* | 0.4021* | 1.0000 |

Note: * indicates that $p < 0.05$.

Source: our own calculations using the statistical analysis program Stata

Table 5 presents the results of the ordinal logistic regression for the dependent variable *young people's perception of ecological destinations*. The results indicate that the dependent variable is positively influenced by the gender-independent variable, with a $\beta = 0.553$ ($p = 0.022$), which shows that women have a better perception of ecological destinations. On the other hand, the variables level of education, family income, and environment have a statistically insignificant effect on the dependent variable ($p > 0.05$). The independent variables *interest in sustainability* and *interest in local authenticity* have a statistically significant positive effect ($p = 0.000$) on the dependent variable, while the variable *interest in environmental protection* is statistically insignificant, with a $p = 0.442$.

Table 5. Logistic regression results

| Variable | β coef. (sig.) | Std. error |
|------------------------------------------------------|----------------------|------------|
| Young people's perception of ecological destinations | | |
| Gender | 0.553* (0.022) | 0.241 |
| Level of education | 0.028 (0.913) | 0.258 |
| Family income | -0.030 (0.753) | 0.096 |
| Environment (rural or urban) | -0.067 (0.746) | 0.207 |
| Interest in environmental protection | 0.100 (0.442) | 0.131 |
| Interest in sustainability | 0.959* (0.000) | 0.151 |
| Interest in local authenticity | 0.486* (0.000) | 0.121 |
| Cut1 | 1.282 | 0.818 |
| Cut2 | 3.464 | 0.738 |
| Cut3 | 6.361 | 0.791 |
| Cut4 | 9.266 | 0.851 |

Note: * indicates that $p < 0.05$

Source: our own calculations using the statistical analysis program Stata

Table 6 presents the results of the ordinal logistic regression for the dependent variable *young people's perception of ecological tourist accommodation structures*. The results indicate that the dependent variable is positively influenced by the variable level of education, which shows that postgraduate students have a better perception of the tourist accommodation structures. On the other hand, the variables *gender*, *family income*, and *environment* have a statistically insignificant effect on the dependent variable. The independent variables *interest in sustainability*, *interest in local authenticity* and *interest in environmental protection* have a statistically significant positive effect ($p = 0.000$) on the dependent variable.

Table 6. Logistic regression results

| Variable | β coef. (sig) | Std. error |
|-----------------------------------------------------------|---------------------|------------|
| Perception of ecological tourist accommodation structures | | |
| Gender | -0.251 (0.298) | 0.241 |
| Level of education | 0.655* (0.012) | 0.260 |
| Family income | -0.157 (0.113) | 0.099 |
| Environment (rural or urban) | -0.040 (0.845) | 0.209 |
| Interest in environmental protection | 0.498* (0.000) | 0.134 |
| Interest in sustainability | 0.676* (0.000) | 0.146 |
| Interest in local authenticity | 0.380* (0.000) | 0.121 |
| Cut1 | 0.925 | 0.834 |
| Cut2 | 2.839 | 0.757 |
| Cut3 | 5.447 | 0.797 |
| Cut4 | 8.277 | 0.850 |

Note: * indicates that $p < 0.05$

Source: our own calculations using the statistical analysis program Stata

Table 7 presents the appropriate goodness of fit statistics for: omnibus test, LR χ^2 , pseudo R^2 . Omnibus tests of the model coefficients are significant ($p < 0.05$), confirming the causal relationship of the proposed models and the acceptance of the hypothesis according to which β coefficients are different from zero. The chi-square probability ratio is 105.54 for the dependent variable *young people's perception of ecological destinations*, with a p value of 0.000, which shows that the overall model is significantly better than a model without predictors. For the model in which the dependent variable is *young people's perception of ecological tourist accommodation structures*, the chi-square probability ratio is 87.57, with a p value of 0.000.

Table 7. The goodness of fit statistics

| Young people's perception of ecological destinations | | Young people's perception of ecological tourist accommodation structures | |
|------------------------------------------------------|----------|--------------------------------------------------------------------------|----------|
| Omnibus test (significance level) | 0.000 | Omnibus test (significance level) | 0.0000 |
| LR χ^2 (7) | 105.54 | LR χ^2 (7) | 87.57 |
| Prob. > χ^2 | 0.000 | Prob. > χ^2 | 0.000 |
| Pseudo R^2 | 0.1160 | Pseudo R^2 | 0.0977 |
| Log likelihood | -402.114 | Log likelihood | -404.479 |

Source: our own calculations using the statistical analysis program Stata

5. CONCLUSIONS AND LIMITATIONS OF THE STUDY

In this study, we used two linear regression models which tested the following hypotheses:

H1: *Students will perceive differently the ecological destinations according to the environment they come from (rural or urban).* We tested this hypothesis with the help of the ordinal logistic regression analysis, and the results show that there is a statistically insignificant relationship between the respondents' background (rural or urban) and the perception of ecological destinations. As a result of this analysis, the hypothesis H1 was not confirmed.

H2: *Students will perceive differently the ecological accommodation structures according to the environment they come from (rural or urban).* We tested this hypothesis with the help of the ordinal logistic regression analysis, and the results show that there is a statistically insignificant relationship between the respondents' background (rural or urban) and their perception of tourist accommodation structures, which shows that the hypothesis H2 was not confirmed.

H3: *Students will perceive differently ecological destinations according to the reference group (level of education).* We tested this hypothesis with the help of the ordinal logistic regression analysis, and the results show that there is a statistically insignificant relationship between the level of education and students' perception of ecological destinations, so the hypothesis H3 was not confirmed.

H4: *Students will perceive differently ecological accommodation structures according to the reference group (level of education).* We tested this hypothesis with the help of the ordinal logistic regression analysis, and the results show that there is a statistically insignificant relationship between the level of education and the perception of ecological destinations, thus the hypothesis H4 was confirmed.

H5: *Students will perceive differently ecological destinations according to their gender.* We tested this hypothesis with the help of the ordinal logistic regression analysis, and the results show that there is a statistically significant positive relationship ($p = 0.022$) between respondents' gender and their perception of ecological destinations, which shows that women have a better opinion about ecological destinations, and the hypothesis H5 is confirmed.

H6: *Students will perceive differently ecological accommodation structures according to their gender.* We tested this hypothesis with the help of the ordinal logistic regression analysis, and the results show that there is a statistically insignificant relationship between respondents' gender and their perception of ecological tourism accommodation structures, which shows that the hypothesis H6 was not confirmed.

H7: *Students will perceive differently ecological destinations according to their family income.* We tested this hypothesis with the help of the ordinal logistic regression analysis, and the results show that there is a statistically insignificant positive relationship between students' family income and their perception of

ecological destinations. Considering that women have a better opinion of ecological destinations, the hypothesis H7 is confirmed.

H8: *Students will perceive differently ecological accommodation structures according to their family income.* We tested this hypothesis with the help of the ordinal logistic regression analysis, and the results show that there is a statistically insignificant relationship between the respondents' family income and their perception of ecological tourist accommodation structures. Thus, the hypothesis H8 was not confirmed.

H9: *The interest in environmental protection and in sustainability and local authenticity will have a positive effect on the perception of ecological destinations.* We tested this hypothesis with the help of the ordinal logistic regression analysis. The interest in sustainability and in local authenticity proved to be statistically significant predictors, with a positive effect on the dependent variable. The perception of the problem of global warming has a statistically insignificant effect on the dependent variable. These results show that the hypothesis H9 is partially confirmed.

H10: *The interest in environmental protection and in sustainability and local authenticity will have a positive effect on the perception of ecological tourist accommodation structures.* We tested this hypothesis with the help of the ordinal logistic regression analysis. The interest in sustainability, in local authenticity and the perception of global warming proved to be statistically significant predictors, with a positive effect on the dependent variable, thus the hypothesis H10 was confirmed.

The context of analysis of this study provided an overview of students' perceptions of ecological destinations and ecological tourist accommodation structures by analysing the factors influencing these perceptions. Even if, in the literature, the profile of the ecological tourist does not have a standard typology, the results of this study show a propensity of young tourists for pro-sustainability values. Thus, we analysed empirically the perception of undergraduate and postgraduate (master) students from two faculties of Alexandru Ioan Cuza University in Iasi of ecological destinations and ecological tourist accommodation structures. As a result of this analysis, we showed that gender, background, level of education are variables which do not have a statistically significant effect on students' perceptions of ecological destinations and ecological tourist accommodation structures. However, the interest in environmental protection and in sustainability and local authenticity have a positive effect on the perception of ecological destinations and of ecological tourist accommodation structures. Therefore, we can say that in the study of the perception of sustainability, the variables related to motivations, attitudes, habits, beliefs (intangible factors) are more important than the variables related to personal characteristics (age, gender, background, etc.).

Although this study has some interesting results, there are limitations regarding the generalisation of the data, as the sample used in the analysis includes respondents from a single university. Therefore, the results do not necessarily show a general behaviour for all students. Thus, the research instrument could be further improved.

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SYSTEMATIZATION OF STATISTICAL INDICATORS FOR THE ANALYSIS AND EVALUATION OF THE EFFICIENCY OF PUBLIC EXPENDITURE MANAGEMENT

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ABSTRACT

This paper aims to identify statistical indicators that enable the evaluation of the efficiency of public expenditure. This, in turn, allows the improvement of public expenditure management and increases the accountability in the decision-making process. Within this paper, we also tackle the theoretical aspects of the efficiency indicators, which are expressed through the effect-to-effort ratio. This insight is derived from an empirical study on the relationship between public spending and economic growth in the Republic of Moldova between 2002-2019. Given the observed positive impact of public spending on the GDP, a strict implementation of performance indicators on public spending will facilitate both its efficient management, as well as increase economic growth in the Republic of Moldova. We expect the impact to be both quantitative and qualitative, leading to sustainable growth prospects in the long term.

Keywords: public expenditures; GDP; efficiency indicators; effect/effort ratio; empirical study; econometric model.

JEL Classification: E01, B23, C53, B26

1. INTRODUCTION

Statistical indicators enable the measurement of performance and allow assessing the efficiency and effectiveness of programmes or activities related to public expenditure. Statistically, efficiency is the relationship between the goods

and services produced by a programme, or an activity (outputs) and the resources used to produce them (inputs). It is often measured as cost per unit of production.

Effectiveness is that extend to which changes brought about by the programmes (the “outcomes”) achieve their expected objectives. The development of a responsive costumer-oriented culture in public service delivery should be on the reform agenda of most countries, which require the development of practical measures for service quality

Performance measurement can serve a variety of purposes – the continuous improvement of management, the supervision of programme implementations, and internal and external accountability. It can provide valuable feedback to decision-making, but it cannot be used directly to make resource allocation decisions.

Performance is measured through a mixture of inputs, outputs, outcomes, and „process” indicators. The selection of concrete performance indicators depends on the specific objectives for which we wish to measure the performance. These indicators should be compared against a reasonable baseline such as planned objectives, or indicators for a similar programme or organisation.

To evaluate the programme, we requires a formal structure or a programme logic which consists of the following elements: (i) a description of the programme; (ii) a clarification of its objectives, and the needs that the programme is aimed at addressing; (iii) the identification of possible causal relationships between programme activities and effects; (iv) the identification of possible outcome values that can be evaluated; (v) the identification of outcome indicators and criteria to assess effectiveness; and (vi) the identification of the factors that may affect outcomes (Ciubotaru, 2014).

There are many evaluation methods; there is no golden rule for deciding which one should be chosen. Any choice should the tailored to the purpose of the study, we present our choices and their justification in this paper.

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK ON APPLIED METHODS

The theoretical framework of the present subject draws attention from diverse socio-professional groups, especially regarding efficiency indicators, often presented as effect/effort ratios:

- Considering the meaning, which is frequently used by several economists, economic efficiency includes three aspects: maximum results, minimum efforts and the shortest possible implementation time. This point of view is advanced by the economist Strumilin S. through the question: „how can the maximal number of results be achieved within the national economy with a minimum of expenses and in the shortest time?” (Mureşan, 1986).
- In another opinion, „economic efficiency means obtaining useful economic and social effects, in terms of rational, economical expenditure of technical,

material, labour, and financial resources, using, for this purpose, scientific methods of conducting and organizing the productive activity” (Staicu, 1995).

- At the same time, the authors Matei S. and Băileşteanu Gh. state that „the economic efficiency of an activity is an attribute of it, expressed by the causal relationship between the total effects, in terms of nature and time, and the total resources, also in terms of nature and time, involved in that activity; a positive relationship in and of itself, in contrast to other variants of the activity and with the normalised quantities that express the requirements of the national economy of saving resources” (Matei and Băileşteanu, 1986).

Academia and various international organizations have constantly paid special attention to the „costs of public activities” resulting from the increase in the marginal tax burden and the „change in the structure of public spending”. Over time, economists have measured outcomes or benefits as a function of budget allocations, under a certain assumption: the higher the expenditures, the greater the benefits. As Tanzi V. argued in 1974, these assumptions can be quite different and may indeed be the opposite (Tanzi, 1974). This is essential for the concept of effectiveness.

Therefore, over time, one can observe the economists’ concern about the efficient use of limited resources. An extensive academic literature, (Afonso *et al.*, 2008; Sanchez and Bermejo, 2007; Mandl *et al.*, 2008, etc.) includes investigations on the establishment, allocation and effects of the distribution of public expenditures, as well as the role of rules and institutions, together with the possibilities for the privatization of public sector activities (for example, the works of researchers Rodrik, 2000; Strauch and von Hagen, 2000; Persson and Tabellini, 2001; Drake and Simper, 2001).

In the context of empirical studies regarding the relationship between public spending and economic growth, one can distinguish the following works: i) Engen and Skinner (1992), based on data for the period of 1970-1985, found that, for 107 states, a balanced increase in public spending and taxation leads to a reduction in overall output of the economy; ii) Alexiou (2009), using the ordinarily least squares method on data for the 1970-2001 period, concluded the presence of a positive correlation between the increase of public spending and the growth of GDP in the case of Greece. We use these studies as the basis of the econometric model we develop to study the relationship between public spending and economic growth in the Republic of Moldova.

3. THE MEANING AND SEMANTICS OF “PERFORMANCE”

It is essential to start by underlining the difference between “performance orientation”; “performance indicators”; “performance appraisal” (of personnel); and “performance (or program) budgeting”. None of these necessarily implies the

others; yet they are very often confused in practice leading to wasteful or counterproductive results.

It is important, to also underline the difference between “precise” and “quantitative”. Vague indicators of performance are, of course, problematic. Still, indicators do not have to be quantitative to be precise. First, qualitative measures can be transformed into quantitative ones by surveys, systematic feedback, and other ways of assessing the opinion of the users. Statistical problems are tricky and may hinder this process, but in principle the possibilities exist. For example, the quality of education can be in part quantified by measuring the percentage of parents who are “fully satisfied” with their children’s school. Second, as law-making demonstrates, one can achieve a great degree of precision using clear language. In the end, the objective is not to find purely quantitative indicators. Rather it is accountability – this can be achieved by indicators that have unambiguous meanings for the assessor and the person or group assessed.

Performance is a relative concept

Dictionary definitions of “performance” include such alternative terms as “accomplishment”, “achievement”, “realization”, and “fulfilment”. Most of these terms have to do with the objective effect of public actions; but some relate to the subjective notion of satisfaction experienced because of one’s action. Naturally, the economic and public management literature emphasizes the former meaning, not only because of its direct implications for the population, but because subjective satisfaction is extremely difficult to measure and impossible to aggregate.

Consequently, performance may be defined in terms of effort or in terms of results. It is a mistake to completely neglect the subjective dimension of “performance”, for it is one important determinant of external effectiveness. Consider what happens if the “effort” dimension is neglected, and incentives are tied exclusively to objective results. The more capable underachiever will be rewarded, and the less capable but harder-working will not. The former will therefore receive the message that underachieving carries no negative consequences; the latter – that working hard carries no rewards. Both being rational individuals, the level of effort will decline for both and hence for the entire organization.

Recognizing (maybe even rewarding) genuine individual effort can do much for morale and serve as an example for others, thus fostering the effectiveness of the organizational unit. More fundamentally, most individuals consider “a sense of accomplishment” as a strong motivator of their actions (independent of salaries, penalties, or other material incentives). Thus, if public sector reform programs inadvertently remove that motivation, other things being equal, the efficiency of public personnel is likely to decline and the effectiveness of public action along with it. We remark that this is true only in countries where the public sector and

public employees are guided by an ethos of public service – a key asset which, no less than physical assets, requires proper “maintenance” on its own terms. If, instead, satisfaction is derived from the exercise of public control, emphasis on external results can lessen unwarranted government interference with economic activity and at the same time spur the efficiency of the public sector. It remains true that the normal human drive to do something right should be harnessed, and not disregarded or depreciated (Felipe, 2016).

As such, it is critical to realize that the concept of “performance” is an instrument rather than an end. Further, it is relative: to the economic system, to the size of the country, to the role of the state, to the quality of governance, to the prevailing culture, and, of course, to the specific economic sector.

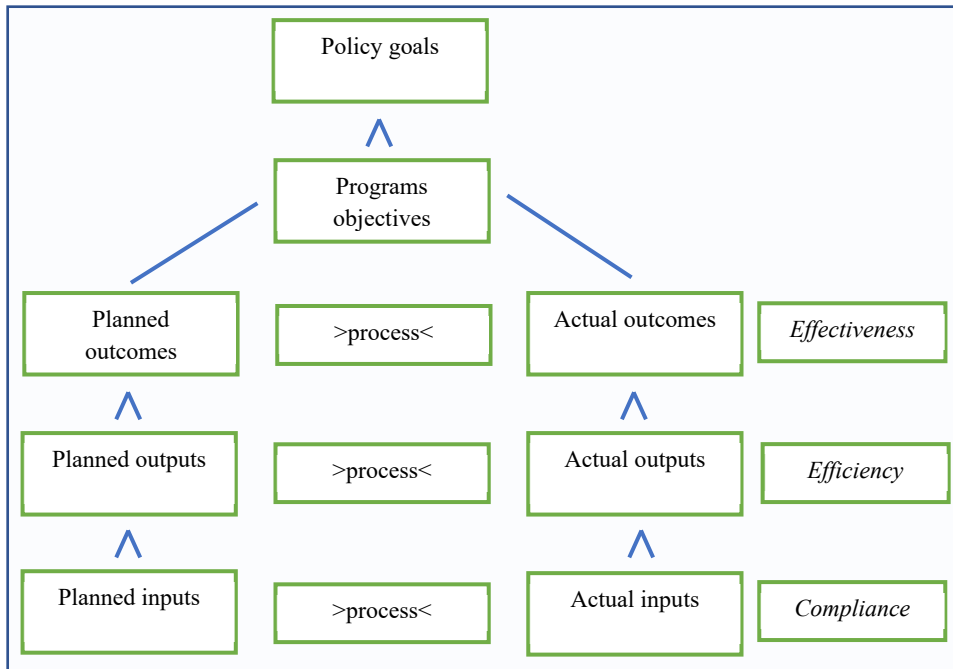
4. RESULTS AND DISCUSSIONS

The measurement of “objective” performance rests on inputs; and/or on one or more of the below results (Furturescu and Mincă, 2010). Using the example of children health services:

- *inputs* are the resources used to produce the service, e.g. doctors, nurses, hospital equipment, medicines. The social value of inputs is measured by their cost. The budgeting performance criterion corresponding to inputs is compliance, i.e. defined as close adherence to budgetary ceilings and ex ante allocation, as well as a proper but agile procurement process.
- *output* is the service itself, e.g. number of child vaccinations. The social value of outputs is approximated by the market price for the same or the closest equivalent service, or, in its absence, by total unit cost. The performance criterion corresponding to outputs is efficiency, i.e. minimizing total input cost per unit of output, or maximizing the quantity of output in relation to a given total cost of inputs.
- *outcome* is the purpose that is achieved by producing the service, e.g. reduction in child mortality and morbidity. The social value of outcomes is subjective and arbitrary, except as revealed by public reaction. The performance criterion corresponding to outcomes is effectiveness, i.e. maximizing outcomes in relation to the outputs produced.
- *process* is the way inputs are procured, outputs produced, or outcomes achieved. The value of “good” process is undetermined. For inputs, good process consists of intelligent compliance with input acquisition and utilization rules and, of course, integrity. In some areas of public activity, such as law or politics, “due process” has its own independent validity and is a key element of good governance. For example, an increase in arrests achieved by violating civil rights would not constitute “good performance”. In other areas, process indicators are a useful proxy for performance when outputs, or more often outcomes, cannot be defined with clarity. Process indicators can be quantitative, e.g. percentage of class time dedicated to

student questions, but are usually qualitative. Even then, as noted earlier, they can be transformed into quantitative indicators by feedback from users: hospital patient satisfaction can be numerically assessed through a patient survey.

Figure 1 is an illustration of the relationships among indicators (Shand *et al.*, 1994), which is also useful for their application to the budget process discussed.



Source: prepared by the authors based on the illustration from OECD report (Shand *et al.*, 1994)

Figure 1. Hierarchy of Performance Criteria and Indicators

The hierarchy of definitions above suggests a sort of complex production function of public services, whereby the outcome of one stage is an output of the next stage. The “accountability trade-off” noted above states that clearer and more immediate accountability is by definition narrower accountability; and conversely, the link between action and results becomes more ambiguous the broader and the more meaningful the results. Hence, control through outputs is least workable for complex tasks, e.g. mental health, rather more appropriate for simple processes, e.g. trash collection (Laking, 1999).

The above implies an “accountability chain”—with accountability clearest and most immediate by the narrowest performance criterion, i.e. compliance with

input allocations, and most ambiguous and diffuse by the broadest performance criterion, i.e. net impact.

For example, it is fairly easy to hold a village nurse strictly accountable for the output of vaccinations, and to reward or penalize them accordingly; it is difficult to hold them responsible for the outcome of improving the health of the village children. While their affirmative involvement in household sanitary conditions, or nutrition, or other health factors, may have more influence on the outcome of improving the children's health than a greater number of vaccinations; still, such involvement is not motivated by an incentive system that focuses only on the outputs.

Moreover, in the absence of close supervision, it is difficult to prevent immunizations from being performed with less than the recommended quantity of vaccine, with the remaining vaccine "leaking" out of the health delivery system. Therefore, abandoning input and quality controls in favour of output indicators may carry substantial practical risks.

These considerations are not meant to suggest that outcome indicators are "better" than output indicators, nor vice versa. All things being equal, output indicators are closer to the desired outcomes, and hence the more realistic, the closer the activity is to the final user. However, accountability can only be either broad or strict and never both. A greater specificity associated with output indicators comes with a loss of relevance; and, conversely, it would be difficult to hold public servants strictly accountable for outcomes.

The selection of output or outcome indicators is also heavily influenced by data availability and information technology. First, good data and good monitoring permit better definition of outputs and, thus, justify greater reliance on them as a measure of performance. Conversely, when data are lacking, unreliable, or monitoring is weak, measuring performance by outputs causes people to game the measures and self-delude. In such cases, the priority must first be to place compliance on a firm footing and improve both the relevant data and the monitoring capability before considering the introduction of results-based performance elements.

Further, data collection costs, and more generally the transaction costs of introducing performance indicators in a systematic manner can be enormous. These costs must be assessed realistically and weighed against the benefits expected. It is wrong to limit a debate on whether to introduce performance indicators to a single side, that of expected benefits. The introduction of performance indicators is no exception to the basic rule of economics that "there is no free lunch".

Greater attention to performance may be stimulated by a variety of means. As noted earlier, the appropriate choice of performance indicators differs for different countries, times, and sectors. Accordingly, the only valid general rule is when performance measurement is appropriate and cost-effective, performance

should be assessed according to that mix of output, outcome and process indicators that is realistic and suitable for the specific activity, sector, and country.

4.1. Formulating performance indicators

The nature of the problem can be illustrated by reference to the well-known management consulting rule that: “what gets measured, gets done”. There are three conditions for this rule to apply: (i) the right thing must be measured; (ii) the thing must be measured in right way; and (iii) there must be consequences if it does not get done. None of these three conditions is easy to meet. A bigger issue is the obvious corollary to the rule: “what does not get measured, does not get done”. In the public sector, the least measurable activities may be the most important ones. Finally, one must keep in mind that rule changes entail behavioural changes: in the long-term, these may be beneficial or dysfunctional depending on the modalities and fairness of the performance assessment system. It is never enough to assess the short-term consequences of changes in an organization or in incentives, nor, of course, to limit attention to the benefits expected without consideration of the costs.

The performance indicators in Table 1 are but some examples; however, they should make clear which indicators could be used as a measure of “performance” in each respective sector. We realize there are cases where these indicators are used and can add value to the career for the civil servants involved. Fortunately, as noted earlier, whenever data availability and practical considerations allow, a much fuller understanding of performance can be gained using a combination of indicators (Statutory Instruments No. 896, 2000, annexes 3-15).

Table 1. Systematization of statistical performance indicators

| Sector | Type of indicator | | | |
|------------------------|-----------------------|----------------------|-----------------------|------------------------------------|
| | Input | Output | Outcome | Proces |
| Administration | No. of staff | No. of policy papers | Better decisions | Openness of debate |
| Education | Student/teacher ratio | Retention rates | Higher literacy | Encouraging student expression |
| Judicial system | Budget | Cases heard | Low appeal rate | Assistance for indigent defendants |
| Police | No. of police cars | No. of arrests | Decline in crime rate | Respect for rights |
| Corrections | Cost/prisoner | No. of prisoners | Recidivism rate | Preventing abuse |
| Health | Nurses/population | No. of vaccinations | Low morbidity | „Bedside manners” |
| Social welfare | Social workers | Persons assisted | Exits from system | Dignified treatment |

Source: elaborated by the authors based on the UK legislation, 2000 no. 896.

4.2. Evaluating the interdependence of the public expenditures – GDP, econometric model: the case of the Republic of Moldova

In most of the countries, data on public spending as a component of domestic production show that the public sector has an inevitable long-term growth trend. The Republic of Moldova is one of these countries. Based on existing data from the Ministry of Finance of the Republic of Moldova, public expenditures have been mostly expanding since the proclamation of independence, and for the period 2002-2019, for example, the ratio between total public expenditures of the state budget and gross domestic product (GDP) was 23.0% in 2002 and in just 17 years it increased to 31.4% in 2019 (Republic of Moldova Government, 2020; Timus *et al.*, 2011).

It is not conclusive whether the increase in public spending induces economic growth or not since their share over time is marked by a relative volatility. Thus, this study tries to research whether there is a dependence between the increase of public spending and economic growth in the case of the Republic of Moldova. This becomes the fundamental objective of the study, and our specific objectives are: i) establishing the impact of public expenditures on economic growth in the Republic of Moldova; ii) establishing whether there is a long-term causal relationship between public spending and economic growth in the Republic of Moldova; iii) whether there is any link between the introduction of performance-based budgeting elements and economic growth in the Republic of Moldova (Secrieru, 2011).

The theoretical framework reflects extensive research confirming that the increase in public spending over time is a common phenomenon for many states, regardless of their level of economic development. Numerous researches have been conducted to assess the extent to which public spending affects economic growth. This imposes the need to determine whether the behaviour of public spending in the Republic of Moldova and the economy as a whole is in accordance with the law of increasing expansion of public activities, enunciated in the previous century by Wagner and Peacock-Wiseman, or in accordance with Keynesian theory and that of Friedman, later developed by many economists (Friedman, 1978; Killick, 2005).

Starting from the idea that the relationship between public spending and economic growth is far from clear and aiming to identify the correlation between public spending and GDP in the Republic of Moldova, we will analyse the annual data for the period 2002-2019.

The functional form of the model elaborated by us involves a regression equation. In an attempt to find the answer to the three questions, formulated above, as well as based on previous studies, the following were used as variables: GDP (pib) and total public expenditure of the state budget (chelt) for the period 2002-2019. The direct sensitivity between GDP and public spending is tested using a

function, in which GDP is the dependent variable and public spending is the explanatory variable.

Methodologically, in order to develop the mathematical model that determines the link between the selected variables, with the GDP, on the one hand, and public spending, on the other hand, one has to perform the following steps: identifying the mathematical relationships of the model based on the graphical representation of the correlation of variables; estimating the parameters for the model, in our case - using the ordinary least squares method (OLS); testing the significance of the chosen model and the coefficients of the functions found; and finally, economic interpretation of the tested parameters.

So, if we symbolize by \hat{y} the adjusted values, resulting from the application of the unifactorial linear model, then:

$$\hat{y} = \hat{a} + \hat{b}x \quad (1)$$

Where:

\hat{y} – is a dependent variable (resultant variable or explained variable);

\hat{a} – constant parameter;

\hat{b} – parameter (coefficient, estimator) independent variable;

x – independent variable (explanatory, regressor).

The estimation of the parameters of this model is performed using the ordinary least squares method (OLS), which involves minimizing the sum of the squares of the deviations of the empirical values (y) from the estimated values (\hat{y}), respectively:

$$\min_{a,b} \sum_{i=1}^n (y_i - \hat{y}_i)^2 = \min_{a,b} \sum_{i=1}^n u_i^2 \quad (2)$$

Therefore, the model, in its functional form, is presented as follows:

$$\text{pib} = c(1) + c(2) * \text{chelt} + \text{eps} \quad (3)$$

Where:

pib – gross domestic product (dependent variable);

$c(1)$ – constant coefficient;

$c(2)$ – the regression coefficient of the chelt;

chelt – expenditures of the national public budget (independent variable);

eps – random errors.

To use the linear model, we transform it into a logarithmic model:

$$\log(\text{pib}) = c(1) + c(2) * \log(\text{chelt}) \quad (4)$$

Next, we move on to the analysis of the parameters obtained and the model in general. For this, a series of indicators and criteria are used to highlight different aspects related to the adequacy and accuracy of the model.

The first aspect of the evolution of the data, which is analysed, is the stationarity. The Augmented Dickey - Fuller test (ADF) was used as a stationary test, or unit root test, to highlight the stationary or non-stationary nature of a dynamic series. by determining the deterministic or random trend, and the Phillips-Peron (PP) test, constructed so as to achieve a nonparametric correction of the Dickey-Fuller statistics under conditions of autocorrelation and / or heteroskedasticity of errors (Iliadi și Dodon, 2012).

Another aspect of data evolution includes VAR analysis, which ends with the Granger causality test. Causality-Granger (CG) tests indicate variables that are useful for predicting other variables. Specifically, one can state that X (the independent variable) causes Granger on Y (the dependent variable), if a prediction of Y formulated on the basis of a set of information comprising the history of X is better than a prediction that ignores the history of X.

4.3. Data analysis and interpretation

The general results of the econometric model show that, in case of the Republic of Moldova, public spending has a significant positive effect from an economic and statistical point of view on GDP growth. Table 2 shows the results obtained based on the econometric model used, which models the impact of public expenditure on GDP, and was fit to the annual data.

The instantiated econometric model, using the regression equation on the dependence between public expenditure and GDP, is:

$$\log(\text{pib})=2.875+0.825*\log(\text{chelt}) \quad 5)$$

Table 2. Systematization of statistical performance indicators

| Dependent Variable: LOG(PIB) | | | | |
|---------------------------------------------|-------------|-----------------------|-------------|-----------|
| Method: Least Squares | | | | |
| Sample (adjusted): 2002 2018 | | | | |
| Included observations: 17 after adjustments | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C(1) | 2.875203 | 0.651988 | 4.409905 | 0.0005 |
| LOG(CHELT) | 0.824840 | 0.064356 | 12.81681 | 0.0000 |
| R-squared | 0.916328 | Mean dependent var | | 11.20934 |
| Adjusted R-squared | 0.910749 | S.D. dependent var | | 0.656373 |
| S.E. of regression | 0.196090 | Akaike info criterion | | -1.310352 |
| Sum squared resid | 0.576771 | Schwarz criterion | | -1.212327 |
| Log likelihood | 4.637991 | Hannan-Quinn criter. | | -1.760608 |
| Durbin-Watson stat | 1.619099 | | | |

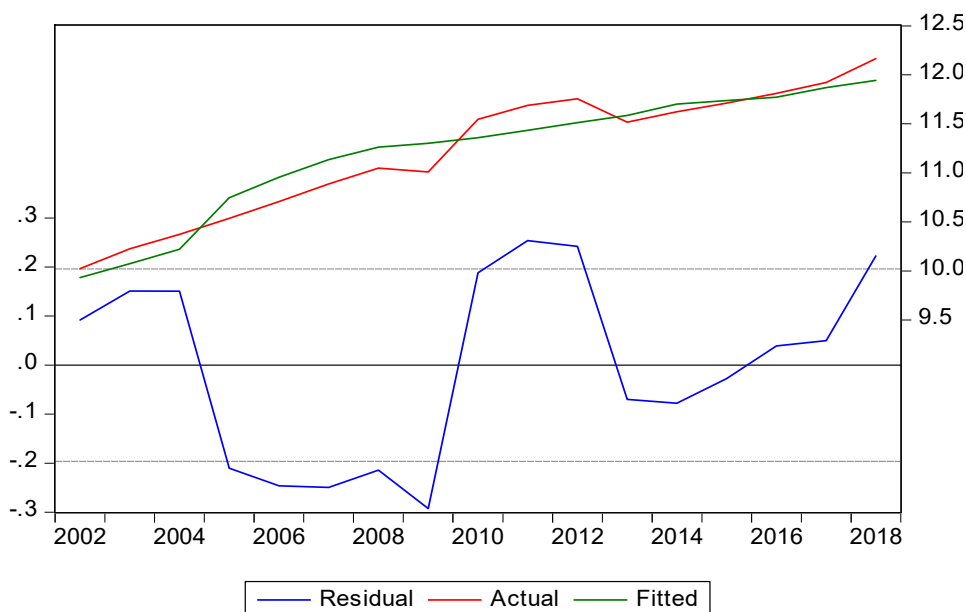
Source: all regressions and estimations are elaborated by the authors based on the Eviews7 econometric software

As we can see, a key contribution to GDP change, as expected, is the expenditure of the national public budget. Using the regression equation in Table 2, we find that when public expenditure increases by 10%, there is an increase of 8.25% in GDP (0.825 being the coefficient of elasticity).

The coefficient of elasticity satisfies the Student test being within the accepted norms of the limits of its tabular values.

In Figure 2, this is visually confirmed by an obvious overlap of the trend line reflecting the evolution of GDP with the trend line reflecting the adjusted evolution of GDP according to the developed model. The F-statistical indicator (based on the Snedecor-Fisher test) has a value much higher than the tabular one, the probability of invalidating the model being 0.00% (3.s.f.).

The Durbin-Watson test recorded a value of 1.691, which rejects the existence of residual autocorrelation.



Source: all regressions and estimations are elaborated by the authors based on the Eviews7 econometric software

Figure 2. The actual and calculated GDP trend

Unit root tests: Taking into account the statistical tests of ADF and PP and the critical values corresponding to the significance thresholds of 5% and 10% (Table 3 and Table 4), we observe that the test statistics are higher than the critical values. Thus, the data series is considered stationary at this level. The unit root test indicates that the variables - pib, chelt are integrated of the same order: order one.

Table 3. Dickey-Fuller test developed (ADF)

| Series | ADF Test Statistic | Critic value 5% | Critic value 10% | Order | Remarks |
|----------------------|--------------------|-----------------|------------------|-------|------------|
| GDP (pib) | -4.2262 | -3.8289 | -3.3629 | I(1) | Staționary |
| Expenditures (chelt) | -3.8770 | -3.9333 | -3.4200 | I(1) | Staționary |

Source: all regressions and estimations are elaborated by the authors based on the Eviews7 econometric software

Table 4. Phillips-Perron test (PP)

| Series | Statistic PP Test | Critic value 5% | Critic value 10% | Order | Remarks |
|----------------------|-------------------|-----------------|------------------|-------|------------|
| GDP (pib) | -8.1548 | -3.7911 | -3.2422 | I(1) | Staționary |
| Expenditures (chelt) | -4.8770 | -3.7911 | -3.2422 | I(1) | Staționary |

Source: all regressions and estimations are elaborated by the authors based on the Eviews7 econometric software

The econometric model used to investigate the impact of public spending growth on GDP growth in the Republic of Moldova for 2002-2019 is satisfactory, the proportion in which the explanatory variable determines the variation of the dependent variable is about 82.48% and coefficient of validation of the model is 91.63% (R-squared).

Following the results generated by the developed model, we conclude that, in the Republic of Moldova, public expenditure has a significant positive effect, from an economic and statistical point of view, on GDP growth. We find that there is a long-term interdependence between public spending and the GDP of the Republic of Moldova.

5. CONCLUSIONS

- To some extent, every measure of performance is a proxy measure. For example, the performance of an economic system should be gauged in terms of human well-being. Since that is impossible, it is measured in terms of goods and services produced; and, because these cannot be physically aggregated, their market value is used as a measure of economic performance.
- Although the issue of quality is ever present, there is no great methodological difficulty in defining and measuring outputs, and even less so, inputs; the issue is their relevance. Similarly, the interpretation of outcomes is rarely in doubt; the issue is their feasibility as a motivator for better performance. Outcome indicators are almost always more meaningful, and output indicators, almost always more feasible. Combining the two factors,

performance indicators are most appropriate for sectors where there is a direct and immediate relationship between the government agency's outputs and the desired outcomes.

- Once the right indicators have been chosen, the specific levels to be achieved need to be set. The general principle for the setting of any performance target is that it must be challenging but achievable. both overambitious and too easy targets lead to underachievement. "Benchmarking" and "league tables" are often used to assist in defining appropriate targets.
- Based on the developed econometric model and the results obtained by validating the model and the determined links, we conclude that: (i) it is appropriate to increase public spending in the Republic of Moldova: this will accelerate the development of productive sectors; (ii) proper, efficient management of the public spending will increase the production capacity of the domestic economy; and (iii) given the positive impact on GDP growth, a strict implementation of performance indicators on public spending, but also their efficient management, will increase economic growth both quantitatively and qualitatively in the Republic of Moldova, providing long-term sustainable prospects.

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ROLE OF FISCAL ADMINISTRATION AND FISCAL CONTROL IN ENSURING ECONOMIC STABILITY (CASE OF THE REPUBLIC OF MOLDOVA)

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ABSTRACT

Background. The modern fiscal administration along with the fiscal control should focus on the motivation related to the development of a sustainable economy and to follow, the good functioning of the production units at a normal capacity based on the efficiency and profitability criteria, in order to achieve the maximum profit in relation to the established objectives and norms. Emphasizing the role of the state in regulating the economic and social processes determines the importance of the fiscal administration not only as a way of ensuring the state with the needed financial resources, but also as an element of the mechanism of state intervention in the economy. Currently fiscal administration and fiscal control have acquired a special relevance in the Republic of Moldova due to the numerous irregularities in the fiscal sphere that represent a colossal problem for the state in terms of both financial and economic stability.

Data and Methods. The method of analysis, synthesis method, logic and dialectic method, normative method, the study of statistical sampling, tabular and graphical method, personal observations, and monographic studies were used for drafting this article.

Results. The results of the analysis carried out confirm that for an efficient fiscal administration it is necessary: the improvement and modernization of the fiscal legislation in the part of the fiscal administration; to increase the quality of the fiscal services for ensuring the efficiency of the fiscal administration; the modernization of the fiscal control, etc.

Keywords: tax administration; tax accountability; tax legislation; tax payments.

JEL Classification: H30

1. INTRODUCTION

Economic stability and its component on the tax segment – fiscal administration, have acquired a special relevance in the Republic of Moldova in recent years. This is due to numerous irregularities in the fiscal sphere, such as, for example, the arrears of taxes to budgets of all levels. These factors represent a colossal problem for the state in terms of both financial and economic stability.

One of the main conditions in the full and timely collection of taxes and other mandatory payments in the budget system is the efficient administration of taxes.

A modern tax administration operates in accordance with the legislation in force, which gives it the autonomy and flexibility necessary to ensure the planning and execution of its operational tasks efficiently and, at the same time, to reduce the costs of tax administration for both the tax authority and for taxpayers. Thus, a strict fiscal control is required for the proper functioning of the tax system of any country. This is the basis of tax administration. The implementation of tasks to improve the tax administration system should ensure an increase in tax collection; reducing the costs of taxpayers in fulfilling the obligation to calculate and pay taxes, as well as the costs of government for fiscal control.

Fiscal administration and fiscal control mainly aim at the operation of production units at normal capacity, even at maximum, on the criteria of efficiency and profitability to obtain maximum profit in relation to the objectives and rules established. The role of fiscal control involves: finding and investigating the tax of all acts and facts resulting from the activity of the taxpayer subject to control or other persons on the legality and compliance of tax returns, correctness and accuracy of tax obligations, in order to discover new elements relevant to law enforcement; analysis and evaluation of tax information, in order to compare tax returns with their own information or from other sources; sanctioning according to the law the established facts and disposing of measures for preventing and combating deviations from the provisions of the fiscal legislation.

Emphasizing the role of the state in regulating economic and social processes determines the importance of fiscal administration not only as a way to provide the state with unnecessary financial resources, but also as an element of the mechanism of state intervention in the economy. In this sense, tax administration is an important area of scientific research, both practical and methodological, which represent a component part of economic theories. Control is an essential attribute of the economic-organizational and cultural-educational function of the state. The economy cannot be organized and run without the exercise of systematic control by the state. The control ensures the improvement, the recovery of the profit in conditions of free and fair competition. As a form of knowledge, it is meaningless if it also manifests itself as a form of improving the way of managing the patrimony and of organizing and leading the activity of the economic agents.

2. LITERATURE REVIEW

In the specialized scientific literature, increased attention is paid to the issues of ensuring economic stability and fiscal security based on permanent fiscal control, as well as optimizing tax administration mechanisms. This is possible due to the recent reforms in the country, which have generated positive changes in the field of tax administration, which has required the creation of a modern tax system that contributes to overcoming the crisis in the economy.

Some researchers define the notion given through the dictionary of modern economics, which explains administration as “the preponderance of formal, purely administrative management of functional forms and methods” (Moşteanu, 2003, p. 136). Tax administration is the most important field of scientific and practical research and methodological actions, which are part of general theory and managerial practice. It is also based on the fundamental knowledge of science, political, economic, legal and other sciences, enriched by modern domestic and global practice. Fiscal administration is primarily the system of management bodies (legislative bodies and fiscal administration bodies). Their composition includes ensuring the approved fiscal policies for the subsequent planned period. Secondly, the totality of norms and rules, which regulate the fiscal process and the concrete fiscal technique, at the same time as the measures that determine the responsibilities for the violation of the fiscal legislation (Radu, 1994, p. 134).

A significant aspect in the analysis of the tax administration as an insurer of economic and financial stability was given by some Russian researchers who argued that tax administration aims to achieve the economic objectives of the state, in order to maintain economic stability, having a legal basis for This one. The main purpose of taxes is a stable replenishment of the country's budget, therefore, the main objective of tax administration is to ensure the timely and complete fulfilment by taxpayers of their tax obligations (Novicov *et al.*, 2012, pp. 127-138; Koltsova and Lyapina, 2015, pp. 35-38).

Thus, we can define the tax administration as the totality of methods, techniques and means of supporting information, through which the authorities give the operation of the fiscal mechanism the direction established by law and coordinate fiscal actions in case of significant changes in the economy, in order to maintain economic stability in the state.

In the case of the Republic of Moldova, the tax administration represents the activity of the governmental authorities competent and responsible for ensuring the completion and transfer, accordingly, to the budgets of all levels of the amounts of fiscal obligations, as well as carrying out prosecution and investigation in case of tax violations. The Main State Fiscal Inspectorate (MSFI) is the main fiscal administration authority. In addition to the MFI, the Fiscal Code provides for other responsible institutions, including the customs authority, the tax collection services subordinated to the mayor's office and other competent authorities.

Taking into account the competence of the executive body, the content of the fiscal administration at different levels is evidenced by two levels of the Ministry of Finance of the Republic of Moldova and the State Fiscal Service (SFS). The task of the tax administration at this level is to develop measures to improve the collection of taxes and fees, including on the basis of improved tax legislation, forecasting and planning of fiscal revenues on the basis of the analysis of payments. The subjects of the second level are the territorial fiscal authorities and other subdivisions of the SFS. The content of the tax administration at this level

is represented by the implementation of the fiscal control on the observance of the fiscal obligations by the taxpayers and the subordinated fiscal authorities, the management of the deferrals and the liability of the taxpayers. The situation of fiscal administration as a quality of the activity of fiscal control bodies together with the characteristics of fiscal legislation as well as the level of fiscal burdens on organizations and individuals is an important criterion for assessing the competitiveness of the national tax system.

The tax administration represents an indicator that will allow the pursuit of the efficiency of the existing system of taxes and fees in order to maintain a stable economic activity. Moreover, it allows the optimization of the processes of formation of budgetary and extra-budgetary funds, the rationalization of fiscal relations, the creation of the necessary conditions, including the formulation of ideas, the proposal of bills, etc., for the implementation of state fiscal policies. The main disadvantages of the tax administration lead to a sharp decrease in fiscal revenues in the budget, increase the probability of fiscal crimes, violation of the balance of inter-budgetary relations between regions, and finally worsening social tensions in society.

In order to establish the mechanism of administration, elaboration and realization of the decisions regarding the perfection in the field of the process of administration, it is necessary to identify the basic instruments of fiscal administration. The fiscal administration is necessary for the fiscal instrument of the fiscal administration. The choice of tax administration instruments, the nature and mechanism of their use cannot be occasional. The activity of the fiscal organ in the field of fiscal administration, is directed by the total and timely assurance of the collection of taxes and fees in strict accordance with the fiscal legislation. One of the basic tools available to the fiscal body is the stimulation or sanctioning of taxpayers. As such, in large part, the practice of other countries with a developed tax system shows that the main possibility to increase the increase in state budget revenues is the development of voluntary compliance instruments. In some EU countries, even coercive measures are very well combined with voluntary compliance measures. Thus, the Dutch tax authority found an ingenious way. In this sense, the EU practice is the basis of current policies promoted by the tax service.

A derivative form of the two fiscal administration tools is fiscal control. Fiscal control is the set of activities that establishes the execution of operations related to the settlement and collection of tax receivables on equal terms. It is a means of challenging illegal acts and facts, identifying shortcomings and restoring legality (Musgrave and Musgrave, 1984, p. 48). In the opinion of some specialists, fiscal control can be a form of voluntary compliance (Voinea, 2005). The legal definition shows that fiscal control is a verification of the correctness with which the taxpayer executes the tax obligation and other obligations provided by tax legislation, including verification of other persons in terms of their connection

with the taxpayer's activity by methods, forms and operations provided by the Tax Code of Moldova (Fiscal Code, 1163-XIII/1997). Thus, if we are to view the tax institution not as a control, but as a service to taxpayers, then indeed tax control can be qualified as a voluntary compliance measure. In the strictly legal sense, i.e., an instrument of coercion, the fiscal control will be performed but with taxpayers who are at major risk of non-payment. In view of this approach, fiscal control, as a tool for voluntary compliance, will be based on consulting in the detection of errors. These consultations will be offered by inspectors to the taxpayers who inadvertently or unknowingly make mistakes. The Regulation on the moral stimulation of honest taxpayers was published in the Official Monitor. For the purposes of the published regulation, minor infringements will not be sanctioned. The approach is correct, as long as the biggest problem of the tax system is the recognition of the law, due to its specific character. A comprehensive analysis of the task of harmonizing fiscal relations in order to support economic sustainability allows us to conclude that this is a complex issue, which depends largely on the right choice strategy and fiscal reform tactics, the ability to predict everything, even and the farthest, its consequences.

3. DATA AND METHODOLOGY

An important issue in the activities of the tax authorities is the anti-crisis impact on the economic processes in the republic. To this end, the necessary measures shall be taken to collect and process macroeconomic information, data on the socio-economic situation in a given territory, as well as information on the types of economic activities and categories of taxpayers. Targeted tasks in this regard can be considered the implementation of tax monitoring, which provides tax authorities with information on the processes that take place in the field of taxation. In particular, diagnosis and analysis are performed to determine the risk areas of crisis formation both in the activities of economic entities and in the sectors of the economy as a whole. Sectoral areas of tax risk are identified, as well as payers with a high risk of underestimation of tax obligations through IT products. In this regard, it is necessary to carry out a thorough analysis of the dynamics of tax revenues to identify the factors that influence it. The timeliness and efficiency of management decisions depend on the quality of the analysis results. In this sense, the policy is promoted by the state to change the fiscal control of the pressure instrument, in the instrument of good information.

Fiscal control is a logical consequence of the tasks of the tax administration, and is a main tool in pursuing the maintenance of economic stability in the state. Thus, the fiscal control allows the verification of all taxpayers fulfilling their tax obligations correctly, completely and on time. The efficiency of fiscal administration can be analyzed through data on fiscal control in the Republic of Moldova. For this scope, the number of fiscal controls has recently decreased. It should be noted that on September 6, 2019, the ban on conducting tax audits for

tax periods up to January 1, 2018 was repealed. In fact, according to the activity report of the State Fiscal Service for 2019, the main trend in administration fiscal and fiscal control is the increase of the level of voluntary compliance with the provisions of the legislation in force among taxpayers by applying new and efficient methods of interaction and communication, so that free access to consultations and fairness is manifested in all actions undertaken by SFS. The dynamics of the controls performed for example in 2018 compared to 2017 is presented in Table 1.

Table 1. Dynamics of controls performed in 2017-2018

| Verification method | Years | | Deviation 2018-2017 (+/-) |
|---------------------|-------|-------|---------------------------|
| | 2017 | 2018 | |
| Totale | 2959 | 3922 | 963 |
| Thematic | 29968 | 24484 | -5484 |
| Repeated | 96 | 88 | -8 |
| Operating | 12519 | 9315 | -3204 |
| Opposition | 3523 | 3801 | 278 |
| Chamber | 19275 | 16391 | -2884 |
| Other methods | 5689 | 2522 | -3167 |

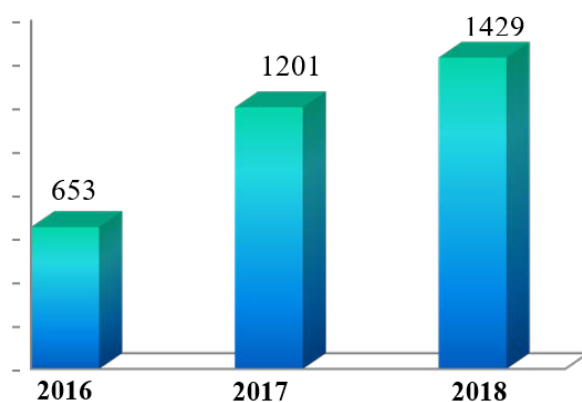
Source: elaborated by the author based on the Activity Report of the SFS for 2018 (SFS, 2019)

It should be noted, however, that fiscal control is an instrument of sanction as established by law. Thus, in 2018 the number of fiscal controls during which violations of tax legislation were detected increased by 2626 or 9% compared to the previous year (33101 controls in 2018 compared to 30475 controls in 2017, the amount of taxes, fees and other payments, including sanctions, calculated additionally to the budget as a result of fiscal controls increased by 269032.3 thousand lei or by 22% compared to the previous year (1470214.3 thousand lei, including sanctions 610363.5 thousand lei in 2018 compared to 1201182.0 thousand lei). At the same time, during 2017, as a result of the controls performed and the decisions adopted, the fiscal losses were reduced by 276.3 million lei and the amount of VAT intended for the transfer to the account was reduced. With 606 million lei, a small amount of VAT intended for the transfer to 60.6 million lei.

As a result of the fiscal controls performed in 2017, taxes, fees, delay increases were collected in the total amount of 18055 million lei. At the same time, fiscal sanctions were applied in the amount of 457.9 million lei. Following a total control, in 2017 on average on SFS were calculated additional tax obligations in the amount of 249.2 thousand lei. The highest level in this respect was obtained by SFS in Chisinau, SFS in Edinet, Straseneni, Dubasari districts and by the General Directorate for Administration of large taxpayers within SFS. At the same time, TSFS

Nisporeni, Soroca, Călărași, Telenеști, Cahul, Ialoveni, Glodeni, cimișlia, Bălți, UTA Gagauzia, Stefan-Voda, etc. registered a much lower than average level.

In principle, the structural analysis of the effects of fiscal controls shows that they necessarily bring additional revenues to the budget. This indicator can be called abstract the resultativeness of the fiscal controls (i.e., the share of the fiscal controls in which additional state budget was ordered from the total number of controls). As a result of the fiscal controls performed during the years 2016-2018 through all verification methods, the additionally calculated amounts were registered (see Figure 1):



Source: elaborated by the author based on the Activity Report of the SFS for 2018 (SFS, 2019)

Figure 1. The amounts calculated additionally as a result of the fiscal controls performed during the years 2016-2018, thousand lei

In 2016, the resulting 54.20% amounted to 40118 fiscal controls, for 2017 they constituted 30475 controls (50.5%), and for 2018, 33101 fiscal controls (58.1%). According to the Taxpayers' Compliance Program for 2018, the areas that have been monitored are: wholesale and retail trade, manufacturing, transport and communications, as well as construction.

Analyzing the information given in the period of 2018, the amount of fiscal obligations calculated on the national public budget amounts to 1429706.1 thousand lei, which is 228524.1 thousand lei higher compared to the previous year, observing an increase of 120.5% on average compared to the previous year. Likewise, the amount of fiscal obligations paid to the national public budget is 138191 thousand lei, with 263922.1 thousand lei more compared to 2017 - an increase of 123.61%.

Based on 18745 contravention reports drawn up for the practice of illicit activities, contravention sanctions were applied in the amount of 17996.50 thousand lei, of which 8114.27 thousand lei paid during the management period,

i.e., in full, using the right to reduce the fine in the amount of 50% in case of payments within 3 days. Likewise, during 2017, more than 5000 contravention reports were drawn up for the illicit practice of entrepreneurship. About 20% of the sanctioned persons have legalized their business, by procuring entrepreneurial patents or registering the enterprise.

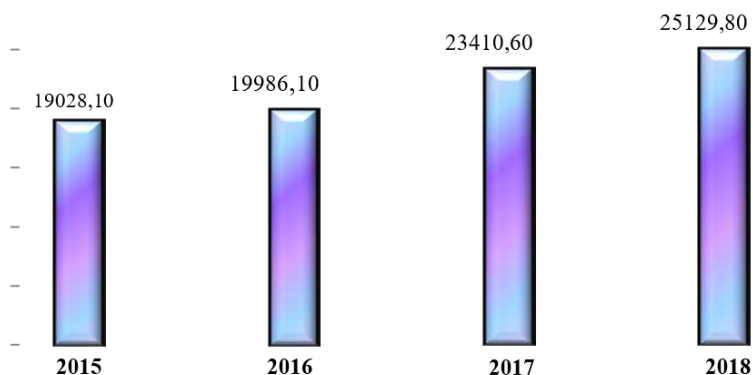
As a result of the monitoring of the taxpayers subject to audits in 2018, 4267 were brought within the legal framework; including by issuing 3496 entrepreneurial patents, by hiring as employees 391 people, were registered: 114 sole proprietorships (SP), 116 limited liability companies (LLC) and 150 farms.

At the same time, based on 1587 control acts, 845 decisions were issued on cases of violation of legislation, being calculated additionally to the budget taxes, fees and other payments in the amount of 11921.9 thousand lei, including through methods and indirect sources 5955.06 thousand lei.

In order to increase the efficiency of tax administration, prevent and detect cases of tax violations, during 2017, 1440 tax posts were established and / or extended to economic agents, as well as to companies at high risk of documenting fictitious transactions and committing possible tax fraud. Likewise, in 2018, 224 fiscal positions were monitored, of which 150 were established during 2018. At the same time, 248 fiscal positions were established in the reference period, based on the analysis of some types of activity as a whole.

4. RESULTS

From the analyzed, it results that the fiscal administration, including through fiscal control will play a positive role in ensuring economic stability if and only if it is stable and constantly evolving. Sustainability of tax administration means the strength of the links between the tax administration processes themselves, as well as between the tax system and other elements of the national economy. In case of violation of the stability of the fiscal administration and non-compliance with security itself, with an insufficient development of the fiscal administration can itself be a threat to economic stability. Fiscal administration is one of the main elements of the sustainable functioning of the fiscal system and the state economy. As proof that our approach is logical, coherent and correct, it can serve us the fact that the fiscal revenues are constantly growing and that the summaries of the national public budget, the right to the public and the real world. This is an unbeatable indication of the activity of the tax administration, which during 2018 increased to 25.1 million lei at NPB, which is 7.3% more than in 2017 (Figure 2).



Source: elaborated by the author based on the Activity Report of the SFS for 2018 (SFS, 2019)

Figure 2. The evolution of receipts at the national public budget (mil. lei)

These achievements are possible due to a good coordination of the institution's activity and the insistent promotion of the European modernization reforms of the SFS, these innovations being implemented with the support of the international development partners. Regarding the period of 2017, the State Fiscal Service received revenues from the national public budget in the amount of 23410.6 million lei, which represents 100.7% of the collection burden. During 2018, 56936 fiscal controls were performed, which is 3464 less fiscal controls (5.7%) compared to 2016, they decreased and 17093, in 2016 they were 74029 controls. At the same time, the number of planned fiscal controls, performed by the total verification method, increased by 431 controls (1087 in 2017 and 656 in 2016).

Thus, the payments related to the National Public Budget of the taxpayers monitored through fiscal positions increased by 46223.7 thousand lei in 2018, compared to 2017 by about (113%) and respectively the VAT payments increased by 3315.8 thousand lei, approximately 20%

In this order of ideas, it is possible to mention that, in principle, the fiscal control is a basic tool in order to ensure a steady and uninsured settlement. The fiscal control, whether oppressive or stimulating, ensures the proper execution of the receipts to the state budget by supplementing the part of the revenues. Starting from this mention, we can draw the basic conclusion that the fiscal control for the accomplishment of its budgetary function, ensures the coverage of the financial stability of the state and as such generates conditions for the macroeconomic stability.

In fact, in all evaluation missions, EU and IMF experts have pointed out countless times that budgetary stability (on the fiscal side) is a basic condition for macroeconomic stability. Another aspect and tool of the fiscal control activity is the forced execution performed by the fiscal bodies. Through these measures

during 2017, 2018, they collected fiscal obligations in the national public budget in the amount of 482.0 thousand lei.

Comparative to the period of 2016, as a whole, there is a significant increase in the fiscal obligations of the latter, which is 12% of the total amount of the same amount. Respective, in 2018 710.1 million lei were collected from the bank accounts of their arrears and debtors, i.e., by 336.5 million lei more compared to the same period of 2017, another 83.4 million lei were raised funds from the cashiers of overdue economic agents, or by 8.8 million lei more than the same period of 2017. 82.5 million lei were paid voluntarily by overdue as a result of the application of seizures on the assets owned or by 53.5 million lei more than the previous year and only 3.1 million of them were collected following the sale of seized goods, with 1.6 million lei less than on 31.12.2017.

The study allows us to conclude that tax administration reflects the interests of both entrepreneurs and the state. These interests generally coincide and are related to the economic stability of the country, economic growth, ensuring the competitiveness of production, focusing on its investments and innovative development, which ensures a reduction of production costs and movement of goods, supplementing budgets at all levels with financial resources etc.

5. CONCLUSIONS

Tax administration needs to focus on motivating the development of a sustainable economy. In this context, the incentive content of tax administration involves solving other tasks to prevent external and internal economic threats such as: support for entrepreneurship; meeting the needs of the state budget; activating individuals in the development of entrepreneurial activity to the detriment of profits; the balance of the interests of the different taxes; ensuring maximum tax equity in the form of social protection for the poorest segments of the population; creating methods of protection against double taxation; maximum consideration of national interests.

Thus, based on the reports, we find that the most important conditions for improving the quality of tax administration in order to maintain economic stability are: improving the organizational structure of tax authorities, strengthening their technical and material base, using new technologies in control work, including selection taxpayers for on-site inspections, changing the concept of relations between taxpayers and tax authorities, raising to a new technical-informational level to ensure analytical activity (creation of data centres), raising the qualification of tax officials and developing high quality professional standards.

In this context, we consider it appropriate to modernize the fiscal administration, which is in fact an important component of the government's reform program. Despite recent fiscal adjustment efforts, the external situation in Europe and the weak economic growth of the Republic of Moldova will continue to pose risks to macroeconomic stability. Given the limited possibility of incurring

new expenditure, there is a strong interest in improving the efficiency and effectiveness of tax collection. The Government of the Republic of Moldova attaches great importance to efficient tax administration, which can promote voluntary compliance and solve the problem of tax evasion in a more efficient and technology-assisted environment.

In other words, the main priorities, principles and directions for implementing a unified approach to the planning of the control activity based on the analytical component should exclude the conduct of unreasonable and unreasonable on-the-spot tax audits and aim at the outcome of the audit. It should be expressed not only in the amounts of taxes and fees levied and collected in addition, but also to ensure the identification of taxpayers who receive unjustified tax benefits through the use of tax evasion schemes and the abolition of schemes applied by all its participants.

We conclude that a modern tax administration operates as an authoritarian unit throughout its territory, and the organizational structure of the authorities reflects specialization and functional centralization, to ensure maximum efficiency, low administration costs and at the same time provide taxpayers with a wide range of services. In order to make the activity more efficient, to improve the quality of the services provided to the taxpayers, to raise their satisfaction, the efficient cooperation with the civil society in order to stimulate the fiscal citizenship, the fiscal administration needs qualified, motivated and dedicated human resources. Also, for a more efficient fiscal administration it is necessary: the improvement and modernization of the fiscal legislation; strengthening fiscal compliance management; developing an efficient system for managing arrears and moderating fiscal control. Thus, the increased efficiency of the activity of the fiscal administration and the increase of the revenues to the budget will be visible, ensured by excluding the improper activities and the institutional reorganization, with emphasis on the specialization on functional fields. At the same time, the damages brought to the budget by tax frauds will be diminished, by detecting and combating tax evasion schemes, and by implementing the integrated information system, the minimization of tax administration costs and increasing the quality of services provided to taxpayers will be ensured.

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LANGUAGE AND ETHNIC CONFLICT IN EASTERN UKRAINE AS A FACTOR OF INFLUENCE ON THE SUSTAINABILITY OF THE TERRITORIAL SYSTEM

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ABSTRACT

The issue of security and stability in the Black Sea region is considered in the context of achieving reconciliation in the military conflict in eastern Ukraine. As a scientific basis for the study of reconciliation, it is proposed to use the theory of change, which allowed to establish the interdependence of the main factors determining the state of conflict and the costs necessary to achieve peace. Summarizing the results of the study of the attitude of the target group to the conflict allowed to assess the current state of confrontation in Ukrainian society and prepare proposals to take into account and possibly reduce the impact of Russia's hybrid intervention strategy on the reconciliation process.

Keywords: linguistic and ethnic conflict; theory of change; strategy of hybrid military conflict.

JEL Classification: O17

1. INTRODUCTION

Issues of security and sustainability are key to the further development of European integration processes, the establishment of democratic institutions and cohesion in the Black Sea region. Russia's military aggression against Ukraine, Moldova and Georgia has become not only a deterrent to their sustainable development. It has led to a permanent state of military conflict throughout the Black Sea region.

In general, in the countries of the region there are no such preconditions for the emergence of a conflict situation as linguistic and ethnic confrontation, the use of natural resources or the religious dominance of a particular denomination. The source of the confrontation in these countries was the problem of their choice between authoritarian and democratic models of development, between Russia and Europe.

In order to destabilize countries seeking to withdraw from its sphere of influence, Russia began to use the practice of hybrid warfare. It was based on the creation of an artificial confrontation on the basis of language and ethnicity, followed by the transition to a phase of military conflict.

As Keir Giles (2019) noted, "Russia's neighbors have never lost sight of the basic fact governing their relations with Moscow: Russia sees its near abroad as its domain, and considers that the West has no business in parts of the world where Russia has traditionally held sway."

In 1992, in the Republic of Moldova (Transnistria), then in Georgia (South Ossetia), and in 2014, an artificial problem of confrontation between Russian-speaking and local ethnic groups was created in Ukraine. Then the problem of linguistic and ethnic confrontation in its content was transformed into a choice between European integration or participation in Russia's Eurasian project.

For Ukraine, the peak of confrontation took place in 2014, when the country won the European direction of development. Ukraine paid a high price for its choice: the annexation of Crimea, the war in Donbass. Millions of Ukrainians became refugees, thousands died at the front.

However, it should be acknowledged that some Russian-speaking Ukrainians in eastern Ukraine, Russians by descent, continue to support Russia's policy. According to sociologists, up to 20% of the population of the occupied territories do not accept the European choice at all.

The situation is similar in Moldova (Transnistria) and Georgia (North Ossetia), where there is also a pro-Russian population.

This stratum of the Russian-speaking population was formed as a result of the policy of Russification, which was first pursued by the Russian Empire and then by the Soviet Union in Ukraine, Georgia and Moldova. He has his own religious and ethnic characteristics, mentality and maintains many family ties with relatives in Russia. For the most part, they do not accept what they find themselves outside of Russia. The use of these people in protests against the pro-European vector of development, the creation of an artificial confrontation between the Russian-speaking population and the local allowed Russia to start a military confrontation. And even after five years of confrontation, the people who suffer from it in the first place continue to support it and take part in the armed conflict.

Such a policy of Russia can be defined in terms of the "wounded empire" syndrome. Its consequence, for example in Ukraine, is the transition from linguistic and ethnic confrontation between certain segments of the population to

a policy of rapprochement with Russia based on the rejection of European values and freedoms. This is confirmed by the results of a number of studies conducted in Ukraine and presented in publications that show that language problems or ethnic differences are not key at present (Razumkov Centre, 2014).

Thus, regarding the current attitude to the Russian language in Ukraine, the following data can be given:

- 46% of Ukrainians with their closest relatives (parents, grandparents, siblings) speak mostly or only Ukrainian (32.4% speak only Ukrainian);
- 28.1% of Ukrainians mostly or only speak Russian at home (15.8% speak only Russian).
- 24.9% of Ukrainians speak Ukrainian and Russian equally. Only 0.2% speak other languages.

These data confirm the thesis that the issue of language is not relevant for Ukraine at all.

Despite the fact that the problem of creating an artificial confrontation between social groups in Ukraine, the Republic of Moldova (Transnistria) and Georgia (South Ossetia) already has a history, governments, international organizations and local society have not been able to offer an approach to solve it. The main reason here is the artificiality of the problem of confrontation, which is in the stage of military conflict. This does not allow to seek a compromise only on the basis of the possibility of meeting the needs of conflicting groups. It is not possible to base the comparison of society on the experience of others, such as the Balkan countries, where ethnic or religious conflicts were largely natural and spontaneous. Therefore, further consideration should be based on the position that the conflict arose artificially and is constantly supported by measures of a hybrid war on the part of Russia.

One of the deterrents to resolving the conflict, given its artificial origins and Russia's ongoing hybrid influence, is the lack of any data on the nature and development of the main factors that led to its emergence. This is due not only to the restrictions of the occupying power on any contacts with the inhabitants of the region, but also to the fact that any prediction of Russia's hybrid policy almost never comes true. The actions of Russians are usually determined by the current situation in the region and the world, or by the desire to discredit the Ukrainian government.

2. METHODS

Existing restrictions on obtaining any reliable information on the situation in the conflict zone in eastern Ukraine significantly hamper research on the preconditions for its occurrence, the possibility of resolving it and the potential impact on security in the Black Sea region. Under such conditions, the research methodology is based on an approach based on an empirical thematic study of the evolution of the Ukrainian government's policy of resolving the conflict in the

east. Assessing the attitude of the population of Ukraine to the process of reconciliation will determine the effectiveness of such a policy.

It is proposed to use the theory of change as the main theory that will be used for conflict analysis. The use of an appropriate model of peacekeeping practice will identify the main options for the development of the conflict in eastern Ukraine and the conditions for further coexistence.

As the main objectives of the study it is proposed to consider the possibilities:

- to obtain an assessment of the existing practice of reconciliation in Ukraine;
- to give a forecast assessment of the further development of the conflict in eastern Ukraine;
- to formulate proposals for the end of the hybrid military confrontation and the reconstruction of the territorial integrity of Ukraine.

To address these challenges, the empirical case study will initially focus exclusively on key aspects of the conflict resolution and reconciliation process. The sources of data will be scientific publications, decisions of the Government of Ukraine, statistical data and results of sociological research.

For Ukraine, taking into account the specifics of the conflict and restrictions on access to information sources, the assessment of qualitative and quantitative data of sociological research presented in public access will be performed in accordance with the provisions of the theory of change. Given the existing contradictions between the data that represent the opinion of the conflicting target groups, in order to obtain an overall assessment of the problem of confrontation, it is advisable to consider them taking into account external and internal factors. This approach will simultaneously take into account the following factors:

- the existence of historical preconditions for confrontation;
- whether society really seeks to try;
- political will and available capacity of public authorities and officials to implement the measures proposed by the researchers;
- impact on the state of the conflict of support for Ukraine by the United States, the EU and international organizations.

The obtained results will be used to study such key issues as determining the conditions for initiating reconciliation and what can ensure the final state of sustainability. Consideration of possible scenarios for the situation in eastern Ukraine will allow us to consider how the conflict in Ukraine is a limiting factor for security in the Black Sea region.

3. THE STATE AND FEATURES OF THE ARTIFICIAL LINGUISTIC AND ETHNIC CONFLICT IN EASTERN UKRAINE

Overcoming ethnic, linguistic, cultural and religious differences is known to be a difficult task. The possibility of solving them is largely determined by the consciousness of local society.

The generalization of the results of sociological research conducted in Ukraine and presented in publications shows that society has a certain understanding of the nature of the conflict and ways to resolve it.

Thus, in general, 78% of the population of Ukraine recognize the possibility of achieving reconciliation with eastern Ukraine without determining a special status for the occupied territories. At the same time, the representatives of these territories are of the opinion that it is necessary to give the occupied territories of Donbass a special status within Ukraine. The generalization of the results of a number of sociological surveys conducted in Ukraine in recent years allows us to determine the attitude of the population of the unoccupied territories to the proposal to grant the occupied territory a special status:

- 51% of Ukrainians would rather or definitely support such a proposal (including 28%);
- 24% of Ukrainians do not support (including 15% do not exactly support).
- 25% of Ukrainians could not or refused to answer questions.

Analyzing the presented data, we can draw the following conclusion. Despite the fact that the support of the residents of eastern Ukraine for the thesis of the special status of the Russian-speaking population led to a military confrontation, millions of people became migrants, those who remained in the occupied territories do not consider themselves ordinary Ukrainians. At the same time, those who have moved out of the conflict zone fully support the government's policies.

The current situation may be due to two factors. The first is Russia's information policy, when Donbass residents have limited access to Ukrainian media and television. The second factor is that the problem of social conflicts in post-Soviet countries is not only because the border between the European and Eurasian systems runs through these countries. In these countries, the transition from a stable society to a society that is constantly moving and changing has been taking place in recent decades. As a result, there are changes in social institutions, traditional values are destroyed, many people do not accept the proclamation of equal civil rights and democratization of society. As a result, the process of adaptation of society and economy to EU regulatory practice is accompanied not only by the lack of a generally accepted strategy for peace, but also by the lack of internal consensus on responding to external challenges (Simão, 2018).

All these phenomena are also accompanied by economic decline, unemployment and lack of social protection. Considering that the culprit is the Ukrainian government, people see a way out by returning to Russia's sphere of influence.

World experience shows that finding solutions to social conflicts is really quite difficult. Of course, an approach is proposed for this, which will be based on social compromises and reconciliation. But the artificial nature of military and social conflicts in Ukraine precludes such a possibility. Indeed, any proposals from the government or international organizations face conscious opposition

from Russia, for which a solution to the conflict is possible only if those countries abandon their strategy of European and Euro-Atlantic integration.

The theory of change as a basis for the analysis of artificial linguistic and ethnic conflict in eastern Ukraine.

Considering the possibility of theoretical substantiation and construction of a possible model of overcoming conflicts on linguistic or ethnic grounds, it should be noted that in most cases the source of their occurrence is changes in society. This determines the approach according to which the concept of the theory of change is proposed to be the basis for the formalization of the problem of overcoming social conflict. Its application will identify all the changes that will occur in society as a change in social institutions, and overcoming the consequences of such changes, including measures to overcome the conflict. To do this, the theory of change should be based on the use of factual data needed to understand the conflict and prepare proposals for specific measures to address the challenges. In the future, the proposed model can become the basis not only for a proposal for resolving the artificial linguistic and ethnic conflict in Ukraine and other countries of the JV, but also for analysis of areas for further development of EU security policy in the region.

The theoretical foundations of the theory of change are currently represented by a number of concepts, approaches and hypotheses. Most of them are of an applied nature and are only suitable for individual cases, such as (Lumumba-Kasongo, 2017).

However, there are concepts that have already become classic for the theory of change. They are universal in nature, allowing them to be used in a variety of cases: resolving social conflicts, planning local development and public administration, environmental crises or developing business strategies, and more. First of all, such basic theories are mechanistic and organic concepts of change Brest (2010), Clark and Taplin (2012), Coryn *et al.*, (2011).

The mechanistic or deterministic approach in change theory suggests looking at a particular social or organizational problem as a system in which all parts or elements are rigidly interconnected and operate according to fixed, predetermined rules.

In the event of an artificial social conflict in Ukraine, such determinism has its signs:

- single leadership, which is manifested in the existence for each party to the conflict of the control center and its support;
- division of functions and responsibilities. Thus, the participants in the conflict on the part of pro-Russian militants are divided into separate groups, each of which performs its task: the army, logistics, infrastructure support, state institutions, and so on. All of them are part of the task of initiating conflict, its maintenance and development;

- the presence of purpose. The activities of each group are determined by a common organizational goal, which for separatists is to prevent their integration into the European Union and return to Russia's sphere of influence. The goal of the Government of Ukraine is to preserve territorial integrity and move towards European integration;
- adaptability of the conflict process. The change in the situation, the international sanctions, the frustration of the locals, who initially supported the choice of Russia's vector of development, but now condemn Russia, require constant adaptation to external factors to maintain the state of confrontation. Ukraine also takes into account current factors of influence in its reconciliation policy. But as events in the east have shown in recent years, such adaptation is not crucial and cannot reduce the level of confrontation.

The mechanistic concept of change has been embodied in a number of specific models and concepts of change, some of which are presented in the comparative table below (see Table 1).

Table 1. Models and concept of change

| Models of change | Features of the model |
|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| three-step model of K. Levin's changes (Hussain <i>et al.</i> , 2018) | <p>The change process includes three stages of change:</p> <ol style="list-style-type: none"> 1. planning the process of "thawing" the conflict (diagnosis of the preconditions for the emergence of problems, determining the final stage, identifying possible resistance and dissemination of ideas about the need for change in society); 2. implementation of the process of change (actions aimed at changing the situation by involving representatives of the conflicting parties, the necessary transformation of relations and processes); 3. consolidation of the results of the process of change (legal acts, encouragement of active participants in the process conflict resolution). |
| the concept of change by Bullock and Batten (1985), Rahschulte (2008) | <p>Presentation of the change process as a specific project using project management methods. Includes the following phases:</p> <ol style="list-style-type: none"> 1. diagnostics (determination of the need for changes and the necessary resources: material, financial, human, etc.); 2. planning (change plan, according to which the goal tree is built); 3. implementation (a feature is the use of feedback, which provides an opportunity to iterate activities and the ability to review the plan); 4. integration (coordination of changed processes and structures with other processes involved in conflict resolution). |
| the "matching" model (Nadler and Tushman, 1989) | <p>Representation of the conflict process in the form of a certain system, which includes a certain set of interacting subsystems that investigate, detect and implement changes in the external environment. The system consumes resources from internal and external sources, turning them into products. The task of the model is to analyze the process of change and preparation on the basis of the results of proposals for the necessary actions. The process of conflict in the model of "coordination" is represented by a set of four subsystems:</p> <ol style="list-style-type: none"> 1. activities (which determine what will be the result of change); 2. parties to the conflict (their possible expectations, potential ability to resist change and the possible level of such resistance are determined); |

| Models of change | Features of the model |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | 3. formal organization of the change process, structure and principles of work organization; 4. informal organization of the process, taking into account the traditions and mentality of the local society. |
| four-level model of change (Noer, 1993; Martine van Selm, 2015) | Proposes to use an approach in which the process of change will be represented by four levels: 1. the first level - "understanding of the process" by the parties to the conflict, its causes and the need for reconciliation. 2. the second level - "emotion management", when the need for reconciliation will be perceived by society at the level of their mentality; 3. the third level - "future orientation", actions to consolidate the achieved state of reconciliation; 4. the fourth level - "implementation of changes" |

Source: own representation

A possible alternative to the mechanistic concept of change is the organic concept, which is represented by the classical formula for assessing the level of change achieved.

The Formula for Change was first developed by David Gleicher in the 1960s, Cady *et al.*, (2014), developed further by Kathy Dannemiller (Wheatley *et al.*, 2003), and popularised by Richard Beckhard and Reuben Harris in their "Організаційні переходи" (Beckhard and Harris, 1987).

The original formula, as created by Gleicher and published by Richard Beckhard, is:

$$C = A \times B \times D > X \quad (1)$$

Where:

C - is change;

A - is the status quo dissatisfaction;

B - is a desired clear state;

D - is practical steps to the desired state;

X - is the cost of the change.

Dannemiller version formula, is:

$$C = D \times V \times F > R \quad (2)$$

Three factors must be present for meaningful organizational change to take place. These factors are:

C - is change;

D - Dissatisfaction with how things are now;

V - Vision of what is possible;

F - First concrete steps that can be taken towards the vision.

If the product of these three factors is greater than

R - Resistance.

From the formula (1) to assess the effectiveness of change, it follows that the condition for successful change is the requirement that factors (A, B and D) outweigh the amount of costs for change - C (in this case, C is proposed to understand the level of concessions to Russia to go to achieve peace). In practice, this means, for example, the following combination: if the representatives of the conflicting group whose participation is required accept the current state of the conflict (A), but at the same time seek reconciliation (B) and are confident in the feasibility of plans (D), but the cost of change (X) are too high, they are potential opponents of change. In this case, factors A, B and D do not compensate for each other: each must have a high value.

In the practical application of formula (2) should take into account its limited limitations. Indeed, the use of this formula can be effective only if the variables and the values of their evaluation indicators are crucial to achieve process efficiency. But in the case of Ukraine, factors such as the level of dissatisfaction of local residents with the current situation (A) or their desire to start the process of reconciliation (implement the proposed changes) and reach the final state (B) are not crucial. Even creating a situation where the situation can be resolved with minimal risk of failure and minimal costs (D) should not be considered decisive. The artificial nature of conflicts in the JV countries leads to a situation where all participants become hostages of Russia and its president.

Therefore, it is advisable to bring the classical form of change (2) to the form (3):

$$A \rightarrow (B + C +) \times D \times F = G > 0 \quad (3)$$

Where:

A - is the level of change that can be expected;

B - is the level of public dissatisfaction associated with the conflict zone;

C - is the existing potential of the parties to the conflict to make the changes necessary for reconciliation;

D - is the risks that accompany the process of change;

F - is an external influence that can block the process of change;

G - is a projected assessment of the achievement of reconciliation.

Assuming that risks (D) and external influences (F) generally have a single source, it is further proposed to take formula (4) as a basis.

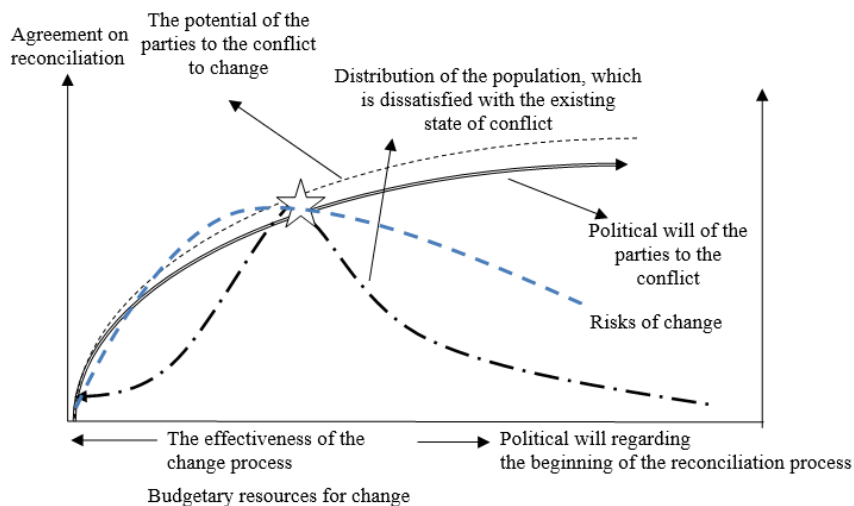
$$A \rightarrow (B + C) \times Q = G > 0 \quad (4)$$

Where: Q represents the overall risk of conflict resolution, which is determined by the interaction of D, F.

All of these factors are probabilistic, so the ratio can be represented as the probability of a group of cases (5):

$$P(A) = P(B + C) \times P(Q) = P(A) + P(B)P(A \times B) \times P(A) \times P(B_A) \quad (5)$$

It is clear that equation (5) in its content is an empirical relationship that determines the interdependence and probability of factors that affect the process of change. Graphical assessment of the interdependence between the components of formula (5) determines the optimal ratio of the main factors to achieve reconciliation (see Figure 1).



Source: own representation

Figure 1. Graphical estimate of the interdependence between the components of formula (5)

The initial data for the analysis included in the ratio (5) were the data of statistical reports, the results of surveys of employees of individual district administrations, business representatives and stakeholders of social groups, local communities belonging to different ethnic groups and parties to the conflict.

The evaluation methodology was based on the assignment of the results obtained in the process of sociological research, according to formula (2), to three groups:

- D - the level of dissatisfaction with this provision;
- V - the desire to introduce the proposed changes or reach the final state;
- F - practicality of changes (minimal risk of failure and minimal losses).

The condition of each of the groups was assessed in points, the calculation of which is related to the percentage of evaluation of indicators (questionnaire questions) as follows in Table 2.

Table 2. The ratio of evaluation indicators with the scoring system of the group

| Percentage of indicator evaluation (questionnaire question) (%) | Points to determine the status of the group |
|--------------------------------------------------------------------|------------------------------------------------|
| 0-20 | 1 |
| 21-40 | 2 |
| 41-60 | 3 |
| 61-80 | 4 |
| 81-100 | 5 |

Source: own representation

Table 3 shows the results of the consolidated assessment of the current state and forecast (1 - negative developments, 2 - preservation of the current state (conservation of the conflict) and the resolution of the military conflict and linguistic and ethical confrontation in eastern Ukraine).

Table 3. The results of assessing the success of change

| Types of evaluation | | Factors of evaluation | | | | Changes |
|-------------------------------------------------|--------------------------------------------------------------|-----------------------|---|---|---|---------|
| | | D | V | F | R | |
| Current assessment of the state of the conflict | | | | | | |
| Forecast assessment | Negative developments | A | | | | |
| | | B | | | | |
| | | C | | | | |
| | Conservation of the conflict | D | | | | |
| | | E | | | | |
| | | F | | | | |
| | Conflict resolution and linguistic and ethical confrontation | G | | | | |
| | | K | | | | |
| | | L | | | | |

Source: own representation

Of course, it must be acknowledged that the practical implementation of any model of change for the preparation of proposals for resolving the artificial military and linguistic-ethnic conflict in eastern Ukraine is a problematic issue. As already noted, it is his artificiality, when in the end everything is determined by one person, Russian President Vladimir Putin, makes any proposals quite conditional. At the same time, the displacement of people from the conflict, the existence of supporters of the idea of "Russian peace" makes the task of studying the conflict and understanding its nature relevant and necessary to ensure security not only in Ukraine but also in Eastern Europe and the Black Sea region.

The first step in this direction should be to obtain factual data that will characterize the evolution of policies and institutions in Russia and Ukraine in the field of prevention of linguistic and ethnic conflicts in the Eastern Partnership

countries. The practical implementation of the proposed approach will also be ensured by establishing a logical relationship between the preconditions for the conflict, individual measures of comparison and the results obtained, when further action is a continuation of the previous action and is based on its results.

As a result, the obtained results will allow to give a meaningful assessment and determine the sources of the conflict, to establish their level of influence on democratic processes, to study the dynamics and trends of the confrontation.

4. DATA

It is proposed to use the theory of consumer demand as a theoretical basis for conducting a case study. According to her, the favorable attitude of the inhabitants of the occupied territory and Ukrainian society to the policy of reconciliation proposed by the authorities is a change in their consciousness of the existing confrontation. Knowledge of the mechanism of forming the public position on the basis of actual knowledge of the criteria for evaluating the proposed policy of understanding will not only build a model of perception of the reconciliation process. It will give an opportunity to offer such a variant of its implementation, which will best meet the requirements and preferences of each of the participants in the confrontation.

As a result, it will determine the feasibility and prospects of the prepared proposals. The obtained data are presented in the form of a SWOT-analysis, the data of which are also presented in the Attachment "Generalization of the results of sociological research of target groups that are potential participants in the military and linguistic-ethnic confrontation in eastern Ukraine".

The current state of the linguistic and ethnic conflict in eastern Ukraine, which is in the form of a military confrontation with the Russian occupation forces and local separatists, does not allow the necessary research to be conducted in the required form.

But as a result of Russia's information policy, there is a certain split in society throughout Ukraine, especially in the east and south of the country. Therefore, the study was based on the results of a sociological study in the territories belonging to the southern regions.

The surveys of the target group of respondents were focused on identifying sources of possible confrontation between certain segments of society, establishing a list of factors that hinder the achievement of reconciliation and the development of democratic processes, have an impact on the social acceptability of the reconciliation process.

Attachment: "Generalization of the results of sociological research of target groups that are potential participants in the military and linguistic-ethnic confrontation in southern Ukraine" provides quantitative data, the assessment of which according to the formula of changes (5) allows to give a reasonable forecast for further conflict in eastern Ukraine.

A feature of formula (5) is that the final value of the calculation is determined by a factor of "x", which means that if any of these components is low or zero, the result of changes will also be low or zero.

To obtain objective data that can be used as a basis for calculation, the following recommendations were taken into account at the beginning of the sociological study:

- it is necessary to convey to people why they cannot continue to maintain the status quo;
- it is necessary to offer a vision of the future that will satisfy all parties to the conflict;
- show the process of reconciliation as a sequence of necessary changes, which will overcome possible resistance to change, because "people do not like change."

The generalization of the obtained results allows to give a certain assessment of the current state of confrontation in Ukrainian society and to prepare proposals on its basis to take into account and possibly reduce the impact of Russia's hybrid intervention strategy for local public authorities.

The application of formula (5) has identified problems that are potential resistance to conflict resolution and the necessary changes. Example:

- residents of the conflict area are generally satisfied with the current state of affairs and are enthusiastic about calls for change;
- the ultimate goal of change is not accepted by the parties to the conflict, the state and provisions of which will be violated by the changes in the first place;
- the ultimate goal of change is perceived as an undesirable state;
- the competence of the persons entrusted with the implementation of the change process does not meet the requirements.

The data processing results also show that:

- the current practice of government and local public administration is not fully consistent with the current state of social conflict on a linguistic and ethnic basis, which does not contribute to strengthening the regional and national capacity needed for coexistence and reconciliation at the local level, taking into account institutional, national, cultural and temporal context;
- the current influence of external factors on the creation of a conflict situation is at a critical level. The influence of internal factors is insignificant;
- if Russia continues the practice of hybrid aggression and the spread of linguistic and ethnic conflict in eastern and southern Ukraine, the security situation in the entire Black Sea region may deteriorate significantly;
- the possibilities of the existing institutional system in the region, necessary to ensure the ability of public organizations and public administration bodies to jointly influence the process of social reconciliation, do not meet the needs;
- the participation of stakeholders of social groups and public organizations should be mandatory in the process of establishing mutual understanding and

cooperation between members of local communities who are artificially divided on linguistic and ethnic grounds;

- the proposed peacekeeping model of the process of reconciliation of social groups, the use of which will allow public administration bodies together with members of the public to take the necessary steps to achieve mutual understanding, prevention and overcoming social conflicts on linguistic and ethnic grounds.

The conformity of the approach proposed by the author to the conditions of the artificiality of the conflict allows us to consider the obtained results as a basis for initiating a new approach to the policy of reconciliation. It is based on the concept of coexistence proposed in the study, with its further presentation in the form of a targeted program to achieve mutual understanding, prevention and overcoming of social conflicts on the basis of language and ethnicity and the beginning of the process of reconciliation of conflicting social groups.

5. CONCLUSIONS

According to the general approach, the mechanistic concept of change can be an effective tool for analyzing and planning measures to resolve and overcome conflict. But its effectiveness is limited by the uncertainty of external influences. Therefore, it testifies to the practices and all attempts to get out of the conflict in eastern Ukraine, Donetsk and Luhansk. A negotiating group is constantly operating in Minsk (Belarus), reconciliation measures are being proposed, control systems are being set up with the participation of the OSCE, and the so-called "Normandy format" is in place. But that could change at any time when Russia's control center makes a new decision.

Under such conditions, the realism of the question of ending the conflict raises some doubts. At the same time, the expediency of certain steps can be justified as follows:

1. Planning for conflict resolution is mandatory. Even realizing that they will not be a decisive factor, their preparation and presentation at the international level will allow the solution of the problem of conflict resolution to remain relevant;
2. It should be understood that the cessation of the hybrid war by Russia alone can only create the necessary preconditions for resolving the conflict. Linguistically - ethnic confrontation in the subconscious of the inhabitants of the territory will persist for a long time. Therefore, conducting a scientific analysis of the environment of change, justification for the development of a step-by-step plan for their implementation, the calculation of risks is mandatory.

At the same time, conflict resolution measures cannot be a separate practice initiated by individual representatives of the parties to the conflict. They should be presented as components of the accepted theory of change, which combines all components of the problem into a single system. But it should be borne in mind that the parties to the conflict will never adopt any grand strategies. They

understand that when we create a version of the future, it is almost impossible to make a whole plan to achieve the goal. Therefore, it is important to recognize this reality and focus on practical actions that move us forward, experiencing new opportunities and working together, quickly learning and adapting.

Given the nature of the artificial linguistic and ethnic conflict established in the study and the preconditions for its occurrence, it becomes possible to offer certain recommendations that should be taken into account when preparing a reconciliation plan:

- to create conditions for reconciliation is possible only with the participation of public administration bodies, the government and representatives of international organizations. Direct participants in the conflict, local residents do not have the appropriate competence and are not able to do something on their own;
- at the level of individual members of society on both sides of the conflict, the military or the authorities, there will always be resistance to change, which in some cases may even leave the system of centralized control and management;
- a special feature of modern linguistic and ethnic conflicts is that, in addition to the parties to the conflict, governments of other countries and international organizations may be involved in resolving it. Their influence is sufficient to contain the parties, but as the history of the conflict in Moldova and Georgia shows, they cannot resolve the conflict, given its artificial nature;
- the official peacekeeping activities of the authorities and local public administration bodies are not sufficiently connected at the same time with the process of achieving reconciliation at the level of individual communities;
- special attention should be paid to the development and implementation of the current model of community reconciliation through the use of intersectoral approaches and the organization of a broad dialogue between government, public administration, NGOs, business and local community stakeholders;
- to propose a reconciliation program for the target areas, the implementation of which will ensure the creation of a comfortable environment and will contribute to the quality of living of people living in the target area;
- to strengthen the position of civil society organizations in the performance of their peacekeeping and mediation functions in reconciliation and dialogue initiation programs to resolve differences between the parties to the conflict.

At the same time, it should be noted that the relevance of applying the concept of the model of change in resolving conflicts on the basis of language and ethnicity is of special interest not only for Ukraine. The prepared proposals can be used to resolve social conflicts in other post-Soviet countries.

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APPENDIX

Sociological research of target groups that are potential participants in the linguistic and ethnic confrontation in the south of Ukraine was conducted taking into account the impact of both favorable opportunities for understanding between the parties to the conflict and potential threats that may contribute to its undesirable development.

To do this, the following factors were taken into account at the same time:

- the existence of historical preconditions for confrontation;
- whether society really seeks reconciliation;
- political will and the available potential of public authorities and officials to implement the proposed measures.

In general, the distribution of Ukrainians in relation to the use of the Ukrainian language is as reflected in Table 4.

Table 4. What language do you most often speak with your closest relatives, parents, grandparents, siblings? (% among all respondents)

| 100% in the column | Ukraine as a whole | West | Center | South | East | Donbass |
|------------------------------------------------|--------------------|------|--------|-------|------|---------|
| Only in Ukrainian | 32.4 | 80.1 | 26.3 | 10.8 | 4.2 | 0.0 |
| Mostly in Ukrainian | 13.6 | 12.1 | 21.8 | 8.3 | 9.1 | 0.0 |
| Both in Russian and in Ukrainian equally often | 24.9 | 4.5 | 32.8 | 32.1 | 36.3 | 16.7 |
| Mostly in Russian | 12.3 | 0.9 | 13.8 | 15.4 | 21.3 | 15.9 |
| Only in Russian | 15.8 | 0.6 | 4.7 | 32.5 | 28.2 | 66.7 |
| In another language | 0.2 | 0.4 | 0.1 | 0.0 | 0.2 | 0.0 |
| No relatives | 0.1 | 0.0 | 0.1 | 0.0 | 0.2 | 0.0 |
| HARD TO SAY | 0.4 | 0.9 | 0.1 | 0.8 | 0.2 | 0.0 |
| REFUSAL TO ANSWER | 0.2 | 0.4 | 0.1 | 0.0 | 0.2 | 0.8 |

Source: own representation

At the same time, the distribution of answers among the representatives of the region of Ukraine is as reflected in Table 5.

Table 5. If it were necessary to grant autonomy within Ukraine to the uncontrolled territories of Donetsk and Luhansk oblasts (DPR and LPR) in order to end hostilities and peacefully resolve the conflict in Donbas, would you support such a proposal? (% among all respondents)

| 100% in the column | Ukraine as a whole | West | Center | South | East | Donbass |
|--------------------------|--------------------|------|--------|-------|------|---------|
| sure would support | 28.0 | 13.4 | 23.3 | 41.7 | 42.2 | 43.2 |
| would rather support | 23.0 | 22.0 | 19.1 | 25.0 | 29.7 | 23.5 |
| would rather not support | 8.8 | 9.1 | 12.6 | 2.9 | 6.6 | 4.5 |
| sure wouldn't support it | 15.2 | 28.8 | 14.4 | 10.4 | 5.1 | 4.5 |
| HARD TO SAY | 22.9 | 25.8 | 27.7 | 18.8 | 13.5 | 22.7 |
| REFUSAL TO ANSWER | 2.1 | 0.9 | 2.9 | 1.3 | 2.9 | 1.5 |

Source: own representation

THE FOOD BUSINESS PROFILE IN ROMANIA – CRITICAL ASSESSMENTS AND POLICY CHALLENGES

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ABSTRACT

A sustainable food system, capable to respond to uncertainties, events or external shocks triggered by political, economic, environmental or health crises that may endanger both food security and livelihoods, needs analysis, surveillance and treatment as a vital organ of the economy. In this context, the paper addressed the Romanian agri-food industry, based on the analysis of the structure and size of economic activities at the level of divisions, sections and product groups. Research focused on dynamics and structural comparisons at statistical development regions and counties level, in pre- and post-accession period, highlighting declines in potential and a heterogeneous profile described by large intra-sectoral gaps, uneven distribution of food industry activities between counties, revealing a low diversification, deficit and regional disparities. Small and medium enterprises are the backbone structures of the agri-food sector, as well a fragile socio-economic segment, therefore needing more attention onto market integration and support through CAP and national policies.

Keywords: food industry; enterprises; structural imbalances; policy.

JEL Classification: L66, F15, Q18

1. INTRODUCTION

A sustainable food system must ensure a sufficient and diversified supply of safe, nutritious, accessible and sustainable food for the population ever, not least in times of crisis. Events affecting the sustainability of food systems can be triggered by political, economic, environmental or health crises that can endanger both food security and livelihoods. The context of the CAP reform post 2020 has changed significantly since the corona virus pandemics. On 20 May 2020 the European Commission (EC) provided the Communication ‘A Farm to Fork Strategy - For a fair, healthy and environmentally-friendly food system’ (F2F) (European Commission, 2020) with the goal of supplying European citizens with nutritious, affordable and safe food. The EC presented an inedited comprehensive approach covering every step in the food supply chain, from production to consumption and

supporting farmers' adaptation. The F2F Strategy is part of the 'European Green Deal' (European Commission, 2019) overarching climate policy, but including as well an EU's new sustainable growth model. Hence, both initiatives establish a new framework for the CAP post-2020, promoting an integrated approach and strengthening the linkages with other common policies with regulatory competences on the agri-food chain. While the current main objective of the CAP is the sustainable production of food with a focus on agricultural incomes, agricultural productivity and price stability, the recent Communication from the EC on the Common Agricultural Policy (CAP) for the future of food and agriculture post-2020 (European Commission, 2017) indicates a continuous political process of evolution in the sense of the objectives established in the Treaty of the European Union, following with determination the increase of the European value added. In this regard, the CAP continues to intensify its responses more effectively to the challenges and opportunities that arise at EU, national, regional and local level. The research analysis should provide evidences in this respect for better adjustment of decisions.

2. MATERIALS AND METHODS

The present research focused on assessments related to the state, dynamics and structure of agri-food enterprises at the level of the development regions and counties of Romania, aiming at identifying the growth or decrease, disparities and acute deficits of food providing activities. The quantitative, qualitative analysis and statistical comparisons were based on the available data for the pre- and post-accession period, to highlight trends and changes in the potential of the agri-food business activities that should need interventions and support. Material was provided by the National Institute of Statistics - NACE Rev.1 and Rev.2, Tempo-online, related to active local units, by activities of the national economy at the level of groups, size classes by number of employees, macro-regions, statistical development regions and counties.

3. RESULTS AND DISCUSSIONS

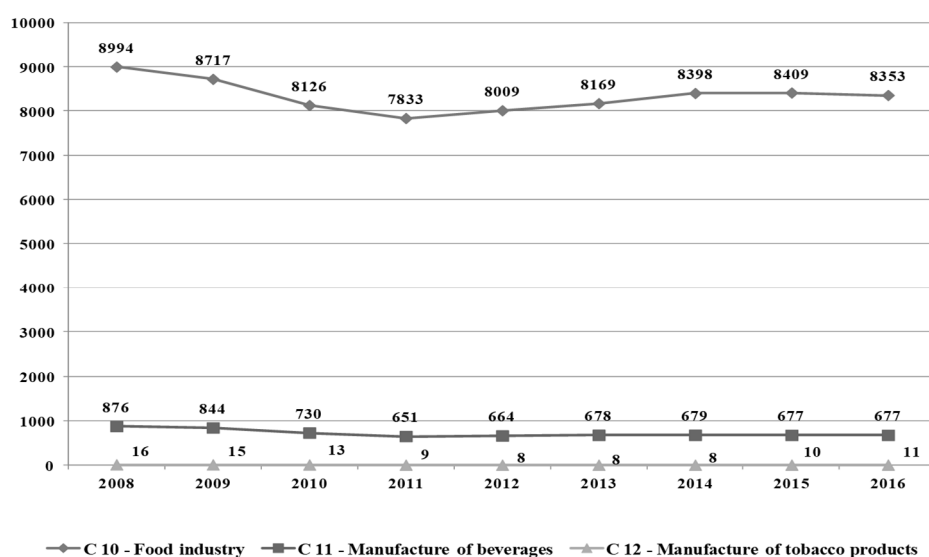
The analysis on statistical data available for the period prior to Romania's accession to the EU (2002-2007), recording the number of local units active by activities of the agri-food processing industry in Romania, at the level of NACE Rev.1 groups, by size classes by number of employees, indicates an average total number of 12171 units, of which, 11043 operated in the food industry, 1094 in the manufacture of beverages and 34 in tobacco manufacturing (Table 1).

Table 1. Number of local units active in food, beverage, tobacco industry, by groups

| Codes - NACE Rev.1 Denomination / Year | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|-------------------------------------------|-------|-------|-------|-------|-------|-------|
| 151- Production, processing of meat | 1442 | 1233 | 1161 | 1073 | 1004 | 951 |
| 152- Processing and preservation of fish | 49 | 51 | 49 | 42 | 43 | 39 |
| 153- Processing of fruits and vegetables | 240 | 287 | 298 | 315 | 310 | 286 |
| 154- Manufacture of oils and fats | 285 | 324 | 317 | 291 | 290 | 255 |
| 155 -Manufacture of dairy products | 882 | 859 | 834 | 779 | 764 | 711 |
| 156- Manufacture of milling prod., starch | 1605 | 1776 | 1774 | 1688 | 1595 | 1472 |
| 157- Manuf. of products for animal feed | 159 | 156 | 162 | 155 | 141 | 135 |
| 158- Manufacture of other prod. feeding | 5247 | 5288 | 5632 | 5770 | 5740 | 5529 |
| Food industry, Total | 11059 | 11182 | 11430 | 11269 | 10949 | 10369 |
| 159 Manufacture of beverages | 1118 | 1169 | 1163 | 1122 | 1033 | 960 |
| 160 Manufacture of tobacco products | 32 | 39 | 40 | 34 | 29 | 31 |

Source: processing of statistics from NIS –Tempo online

The analysis of active local enterprises in Romania, by activities of the national economy according to the NACE classification Rev.2 (C10), in the period 2008-2016, indicated a number of 8353 food processing units in 2016, representing a decrease of 641 units, respectively, with a variation of -7%, compared of 2008 when a total number of 8994 units was registered (Figure 1).



Source: processing of statistics from NIS –Tempo online

Figure 1. Evolution of active agri-food processing enterprises (number), by activities of the national economy at NACE Rev.2 division level

In the total agro-food processing industry, the major share (90.2% - 91.6%) has the enterprises in the food industry, while the manufacture of beverages only 9.6% -8.2%, and tobacco processing, 0.2% -0.1% (Table 2).

Table 2. Structure of agri-food industry, total and main divisions, by number of enterprises – Changes and shares

| NACE Rev.2 Codes (activities of the national economy) | 2008 | Share (%) | 2016 | Share (%) | Change 2016- 2008 | Variation* 2016-2008 (%) |
|----------------------------------------------------------|------|--------------|------|--------------|-------------------------|--------------------------------|
| C 10 - Food industry | 8994 | 90.2 | 8353 | 91.6 | -641 | -7 |
| C 11 - Manufacture of beverages | 959 | 9.6 | 750 | 8.2 | -209 | -23 |
| C 12 - Manufacture of tobacco prod. | 20 | 0.2 | 13 | 0.1 | -7 | -44 |
| Agri-food industry (C10+C11+C12) | 9973 | 100 | 9116 | 100 | -857 | -9 |

Note: *) $(Y_{2016} - Y_{2008}) / Y_{2008} * 100$

Source: processing of statistics from NIS –Tempo online

Enterprises in the food industry (including beverages) achieved a turnover of 57.3 billion lei in 2017 (Table 3). Micro-enterprises (0-9 people) predominate in the food and beverage industry in number (71%), followed by small enterprises, with 22% of units and 26% of employment.

Table 3. Main economic and financial indicators of enterprises in food industry and beverage manufacturing, by size classes

| Indicators | UM | Total, of which: | 0-9 pers. | 10-19 pers. | 20-49 pers. | 50-249 pers. | 250 pers. and over |
|-----------------------------|------------------|------------------------|--------------|----------------|----------------|-----------------|-----------------------|
| | | | (%) | (%) | (%) | (%) | (%) |
| Number of enterprises | number | 9134 | 71 | 12 | 10 | 6 | 1 |
| Employees | pers. | 196003 | 8 | 11 | 15 | 30 | 36 |
| Turnover | mill. lei | 57356 | 4 | 5 | 9 | 26 | 56 |
| Exports | mill. lei | 5004 | 0 | 3 | 4 | 21 | 71 |
| Value added at factor costs | mill. lei | 9289 | 3 | 4 | 11 | 22 | 60 |
| Expenses with labour | mill. lei | 6821 | 4 | 7 | 11 | 28 | 50 |
| Gross operating surplus | mill. lei | 2468 | 1 | -5 | 11 | 6 | 88 |
| Net investments | mill. lei | 2345 | 6 | 4 | 9 | 31 | 50 |
| Labour productivity | thou. lei/ pers. | 51 | 17 | 24 | 36 | 38 | 83 |

Source: processing of data from NIS (2019)

Together, micro and small enterprises absorb 32% of the food workforce, but they achieved the lowest productivity in the sector. However, the largest number of labour was absorbed by large enterprises (250 pers. and over) (36%), which account for only 1% of the number of enterprises in the sector, but achieved 60%

of GVA, followed by medium-sized enterprises (50-249 pers.), with 30% of employees and achieved 22% of GVA.

It was observed that out of the total of 2345 million lei investments in 2017, half were made by large enterprises and 31% by medium-sized enterprises, compared to small enterprises that had losses indicated by the negative gross operating surplus (-5%), through exceeding staff costs, 1.8 times, drawing attention to the economic vulnerability of these units of the food industry.

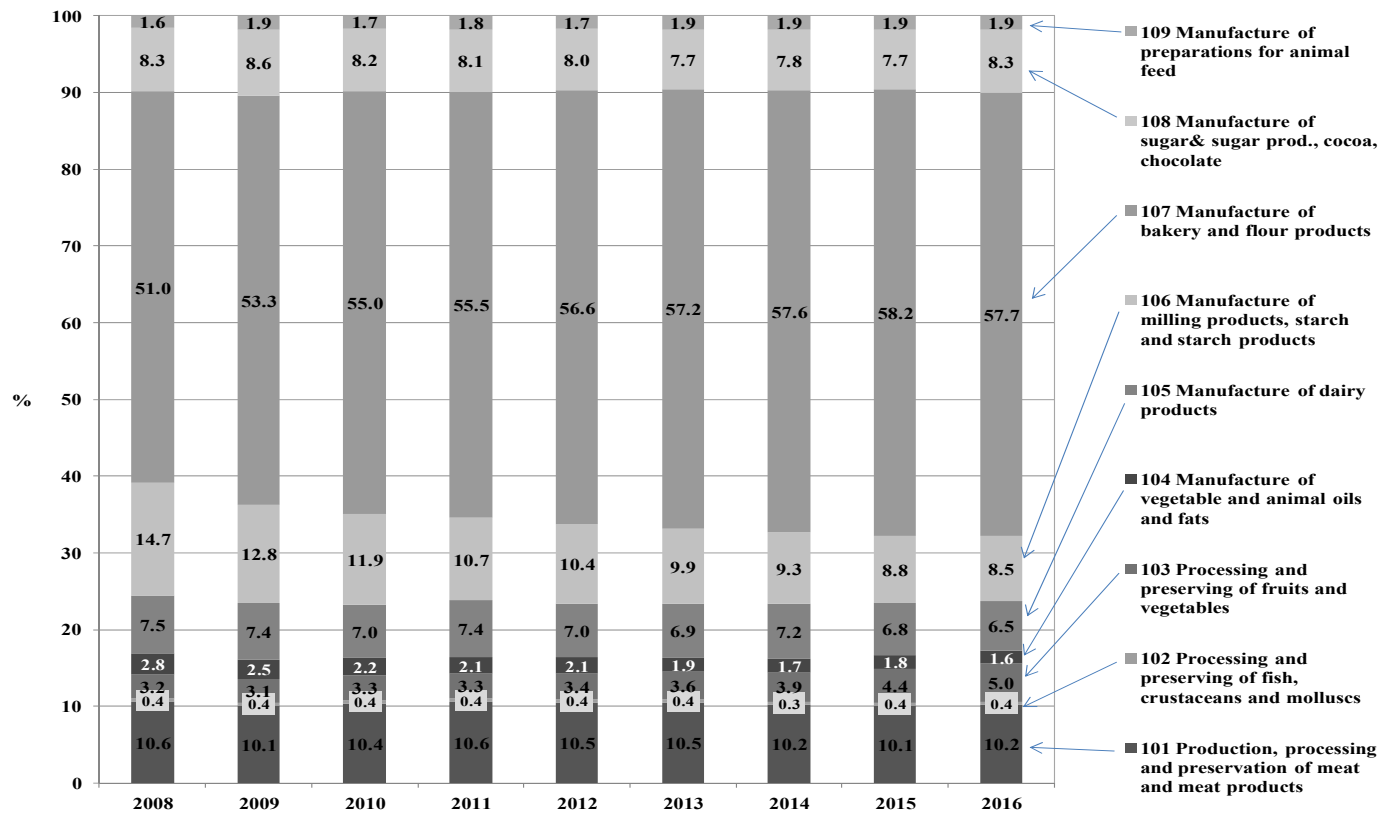
The analysis by statistical development regions indicates decreases of potential in most groups, with the exception of fruit and vegetable processing activities (Table 4), in the pre-accession and post-accession period, the latter showing increases in the activities of manufacture of bakery products (Figure 2).

Table 4. Number of local units active in food industry subsectors change and share

| NACE Rev.2 Codes – Groups | 2008 | 2016 | Change 2016- 2008 | Variation 2016-2008 (%) | Share* (%) |
|---------------------------------------------|------|------|-------------------------|-------------------------------|---------------|
| 103 - Preparation of fruits and vegetables | 287 | 417 | 130 | 45 | 4 |
| 109 - Animal feed preparations | 144 | 155 | 11 | 8 | 1.8 |
| 107 - Bakery and flour products | 4583 | 4821 | 238 | 5 | 56 |
| 108 - Sugar & sugar prod.; cocoa, chocolate | 746 | 691 | -55 | -7 | 8 |
| 101 - Meat and meat products | 950 | 853 | -97 | -10 | 10 |
| 105 - Manufacture of dairy prod | 676 | 542 | -134 | -20 | 7 |
| 102 - Fish preparations | 40 | 31 | -9 | -23 | 0.4 |
| 104 - Manufacture of oils and fats | 248 | 137 | -111 | -45 | 2 |
| 106 - Milling and starch prod. | 1320 | 706 | -614 | -47 | 11 |
| Food industry, total | 8994 | 8353 | -641 | -7 | 100 |

Note: *) Share in average 2008-2016

Source: processing of statistics from NIS –Tempo online



Source: processing of statistics from NIS –Tempo online, Rusali (2017)

Figure 2. Evolution of enterprises (number) in food industry, by activity groups

As it can be seen from Table 5, the largest decreases took place in the South-Muntenia region, followed by the West and Center regions, while increases took place in the North-West and Bucharest-Ilfov. However, according to the share in the total country, the distribution was relatively homogeneous, the highest percentage, 15%, being in the North-West and Center, and the lowest, 10%, in the West and South-West.

Table 5. Number of local units active in food industry, by statistical development regions - Changes and share in sector

| Region | 2008 | 2016 | Change 2016-2008 | Variation 2016 – 2008 (%) | Share* (%) |
|--------------------|------|------|---------------------|------------------------------|---------------|
| North-West | 1291 | 1362 | 71 | 5 | 15 |
| Center | 1261 | 1147 | -114 | -9 | 14 |
| South East | 1141 | 1105 | -36 | -3 | 13 |
| North-East | 1210 | 1054 | -156 | -13 | 13 |
| South-Muntenia | 1204 | 1016 | -188 | -16 | 13 |
| Bucharest - Ilfov | 1086 | 1113 | 27 | 2 | 13 |
| West | 955 | 807 | -148 | -15 | 10 |
| South-West Oltenia | 846 | 749 | -97 | -11 | 10 |
| Total | 8994 | 8353 | -641 | -7 | 100 |

Note: *) Share in average 2008-2016

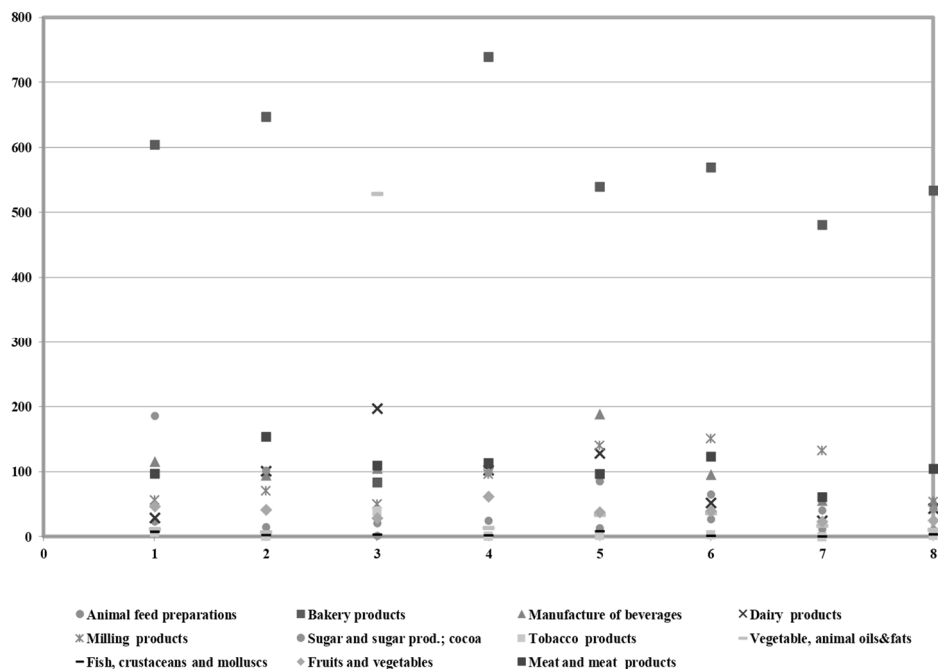
Source: processing of statistics from NIS –Tempo online

Activities by NACE code C107- *Manufacture of bakery and flour products* had the highest distribution in Romania, comprising the major percentage in all statistical regions, respectively, 66% in the Region South-West Oltenia, 65% in the West and 60% in the North-West and between 58% and 52 % in Ilfov, Center, South-Muntenia, South-East and North-East (Figure 3).

The degree of regional diversification of food manufacturing activities is indicated by the share of the top 3 activities in the sector with the highest incidence of product groups corresponding to 3-digit codes of the NACE activities.

At the level of statistical development regions, a low degree of diversification of food processing activities was observed in all regions, respectively 84% in Ilfov, 83% in the West and 80% in the Center and 79% in North-East.

At the level of economic activities groups, according to their share, the top 3 counties, in the period 2008-2016, in the average total number of the subsector, there were identified disparities between counties regarding the distribution of activities, resulting the following typology:



Note: 1 = Region Bucharest – IF; 2 = Center; 3 = North-East; 4= North-West; 5 = South-East; 6 = South-Muntenia; 7 = South-West Oltenia; 8 = West

Source: processing of statistics from NIS –Tempo online

Figure 3. Distribution of activities in Romanian food industry enterprises, by region

- High degree of dispersion (16% - 19%): C106 - *Manufacture of milling products, starch and starch products*; C101 - *Production, processing and preserving of meat and meat products*; C107 - *Manufacture of bakery and flour products*.
- Moderate degree of dispersion (21% - 23%) and C105 - *Manufacture of dairy products*; C103 - *Processing and preserving of fruits and vegetables*; C109 - *Manufacture of animal feed products*.
- High degree of concentration (33% - 30%): C108 - *Manufacture of other food products* - Sugar & sugar products; cocoa, chocolate; C104 - *Manufacture of vegetable and animal oils and fats* (31% in the top 3 counties); C102 - *Processing and preserving of fish, crustaceans and molluscs*.
- Counties with a deficit of active local units in the food processing subsectors, each with a gap of less than 1% of the average of the local units for processing the following food products:
 - Meat products - Sălaj, Giurgiu, Mehedinți;
 - Milling products - Caraș-Severin Harghita, Hunedoara, Gorj, Bistrița-Năsăud, Sălaj;

- Bakery products - Ialomița, Tulcea, Giurgiu, Vaslui, Teleorman;
 - Animal feeds - Sibiu, Tulcea, Giurgiu, Suceava, Constanța, Caraș-Severin, Gorj;
 - A percentage of over 30% of the counties, respectively, Olt, Teleorman, Sălaj, Bistrița-Năsăud, Vaslui, Vrancea, Giurgiu, Ialomița, Caraș-Severin, Mehedinți, Tulcea, Călărași, Botoșani, each, have on average less than 1 % of local food manufacturing enterprises.
- Corresponding to the zone specificity of resources, over a third of counties do not have any local fish processing unit, while local units with fish processing activities are only in 67% of counties, i.e. 28 out of 42 counties have at least one local fish processing unit.
- The counties of Sibiu, Tulcea, Giurgiu, Suceava, Constanța, Caraș-Severin and Gorj each, have on average less than 1% of the activities of manufacturing animal feed products.

From the analysis at county level of the activities in the food industry, by size classes, according to the number of employees, macro-regions, development regions and counties, it was observed an unequal distribution of activities in the food industry between the counties of Romania.

In one third (31%) of the counties (13 counties) operate half (4161 units) of the total number of local units active in the food industry in the country, on average in the period 2008-2016. Of these, in 5 counties operated a quarter of the average total number of local units active in the food industry: Bucharest, which occupies a major share of 10% of the total, and the counties of Timiș, Cluj, Constanța and Bihor (4.2% - 3.6%).

Table 6. Structure of the agri-food industry, by number of enterprises, by size classes, by number of employees

| Year - Share / Size class | Micro (0-9 pers.) | Small (10-49 pers.) | Medium (50-249 pers.) | Large (≥ 250 pers.) |
|------------------------------|----------------------|------------------------|--------------------------|------------------------|
| 2008 | 6630 | 2255 | 597 | 127 |
| % | 69 | 23 | 6 | 1 |
| 2016 | 6121 | 1990 | 538 | 116 |
| % | 70 | 23 | 6 | 1 |

Source: processing of statistics from NIS – Tempo online

The structure of the agri-food industry, according to the number of active enterprises in the sector by size classes of the enterprise, according to the number of employees, maintained at most classes during the analyzed period (Alecsandri, 2018, p 195), although with a decreasing trend, more pronounced for small enterprises. There was a slight increase in the share of micro-enterprises, which are predominant in the sector, from a 69% share in total agri-food enterprises, in 2008, to 70%, in 2016 (Tables 6 and 7).

Table 7. Number of enterprises in the agri-food industry, by size classes of enterprise, by number of employees

| NACE Rev.2 Codes | Size class | 2008 | 2016 | Change 2016-2008 | Variation 2016-2008 (%) | Share (%) |
|----------------------------------------|------------|------|------|------------------|-------------------------|-----------|
| C 10 - Food industry | 0-9 pers. | 5979 | 5597 | -382 | -6 | 63.9 |
| C 11 - Manufacture of beverages | 0-9 pers. | 643 | 518 | -125 | -19 | 5.9 |
| C 12 - Manufacture of tobacco products | 0-9 pers. | 8 | 6 | -2 | -25 | 0.1 |
| Agri-food industry(C10+C11+C12) | 0-9 pers. | 6630 | 6121 | -509 | -8 | 70 |

Source: processing of statistics from NIS –Tempo online

Although in the whole analyzed period there were substantial decreases of potential in the agri-food processing industry, from a total number of 12171 enterprises in 2002, to 9116 active units in 2016, with a majority share of 93%, the SMEs constitute the structure of resistance of the agri-food processing sector in Romania, therefore needing more attention and support through national rural development policies and the CAP.

4. CONCLUSIONS

A substantial loss of Romania's food processing enterprises was assessed, of 10% prior accession, while beverage manufacturing sector lost 16% of units, with unequal impacts on subsectors, i.e. the major diminishes of over one third were in meat industry enterprises, followed by fish and dairy industry. Moreover, a drastic loss occurred in the first decade of the post-accession period, of another 7% in food industry and 23% in beverage industry enterprises, while the main decrease was in milling industry and oils & fats enterprises of almost half losses, as well in fish and meat processing activities. Positive evolution to be noted mainly in fruit & vegetables followed by bakery manufacturing subsectors.

The study highlighted a heterogeneous profile of the processing industry, most of the agri-food processing enterprises are atomized SMEs, which limit the economic development and growth potential of the state economy, at least given that there is a positive relationship between firm size and value creation and their trend low compared to innovation.

The territorial distribution indicates an imbalance of activities between regions, relative to beneficiaries, a prevalence of small enterprises, respectively, 92% units with up to 50 employees and a high degree of dispersion in bakery products, sharing 52% of units with micro-enterprise status, followed by meat, milling and beverage processing units, with 9% share each. The highest degree of concentration was represented by the processing units in the tobacco, fish and oil industries.

Micro-enterprises predominate in the food and beverage industry in number (70%), followed by small enterprises, with 23% of units and 26% of labour. However, the largest number of workforce in large enterprises (36%), which account for only 1% of the number of enterprises in the sector, but concentrate 60% of GVA and 71% of direct exports, followed by medium-sized enterprises, with 30% of employees and generating 22% of GVA.

Small producers, which represent most of the agricultural sector in Romania, face serious challenges to meet strict requirements in terms of quality, frequency of delivery, packaging and packaging, requirements imposed by participants in the recovery chain: carriers, processors, traders, consumers (MADR, 2020). The issue of attracting producers in agri-food systems, including by integrating production and diversifying incomes from secondary activities, is also one of the key issues for increasing the added value of agriculture, income and welfare in rural areas.

The low productivity in the Romanian food industry, among last in the EU (Matas *et al.*, 2020, p. 46-47), indicates the need for restructuring in order to support achievement of competitiveness across the subsectors with growth potential and meet food safety and product quality standards, as well as to establish effective marketing links between the activities of local food processing and the farmers.

There is a highly claimed need for solutions and public facilities concerning the low access to financial resources for small entrepreneurs and new business initiatives in rural areas (MADR, 2016). The agricultural processing sector needs investment in particular for the modernization of existing units with innovative technological equipment and processes, including equipment that allows for a circular economy and increases performance.

The CAP post-2020 should focus more on developing a food chain framework. Common rules and standards require a common policy platform for the integration of food chains, including connecting farms with research, knowledge of IT and information systems, active professional organizations and organizational innovations in food chains. Improving statistical information on economics of activities in the food industry, by subsector and at territorial and local level, is needed as a basis for analyzing policies to ensure food security and the resilience of the rural economy.

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OVERVIEW OF INTERGENERATIONAL TRANSFERS AMONG EUROPEAN OLDER ADULTS

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ABSTRACT

Financial support and practical help are important sources of support for older people, moreover they play an important role in the determination of savings and the accumulation of wealth. Using data from the Survey of Health, Ageing and Retirement in Europe conducted from the perspective of adults aged 50 and above, in 17 countries, we provide an exploratory view of the resource transfers, in term of both money (i.e., financial transfers) and time, either given or received. The findings reveal that for monetary gifts there is a downward flow to the younger generations. Transfers from older parents to their older children are much more frequent than those in the opposite direction. Time related resources are directed both upwards and downwards. Also, a gender gradient has been found both among donors and beneficiaries, in which women living alone offer and receive financial support and time resources more often than men.

Keywords: ageing; intergenerational transfers; SHARE; informal care; private transfers.

JEL Classification: D64, J14

1. INTRODUCTION

The interest of intergenerational solidarity appears once with the changes of the family structure and of the attitudes and values about familism. Moreover, structural issues such as rising unemployment, rising costs and services and demographic aging offer a politicized character to intergenerational solidarity. Specifically, it is considered that the state tends to transfer the responsibilities of

welfare insurer to the private sector, including here the family (Bawin-Legros and Stassen, 2002).

Functional solidarity (help and support) refers to “the extent to which help and support is given, received, or exchanged between family members.” (Parrot and Bengtson, 1999). The most common forms of support are divided into two categories: money transfers and time transfers (Bawin-Legros and Stassen, 2002; Bianchi *et al.*, 2006; Herlofson *et al.*, 2011; Silverstein *et al.*, 2012). The literature shows that members of both generations are involved in such exchanges, with personal care and household support being provided mainly by adult children, and material support as well as care for young children is more the responsibility of parents (Bawin-Legros and Stassen 2002; Bianchi *et al.*, 2006; Brandt *et al.*, 2009; Leopold and Raab, 2011).

Understanding private transfers is important for several reasons, including the fact that transfers provide means by which individuals can pass on the well-being to others or can have potential consequences for the effectiveness of government redistribution policies (Barro, 1974; Becker, 1974; Roberts, 1984; Andreoni, 1989; Bernheim and Bagwell, 1988; Laitner, 1988; Andreoni, 1989; Kotlikoff *et al.*, 1988; Altonji *et al.*, 1996). In fact, intergenerational transfers are important because of the role they can play in determining economies and accumulating wealth (Modigliani, 1988; Kotlikoff, 1988).

The literature shows that the older people are not only beneficiaries of financial transfers but also important providers. People who are likely to provide financial support may also be more likely to receive. The same can be said about informal care (Attias-Donfut *et al.*, 2005; Richardson *et al.*, 2007). The prior research examined different types of transfers. Attias-Donfut *et al.*, (2005) found that the likelihood to realize transfers between generations of the family is decreasing with age, while the likelihood to receive practical support increase substantially after age 75 and above. Albertini *et al.*, (2007) found that parents are more likely to provide financial support to their children than to receive it from them. However, parents aged 70 and above are more likely to receive than to provide practical help, excluding the grandchildren care.

Prior studies also focused on the geographic pattern of transfers between generations. In instance, the research which has been done by Kohli and Albertini (2007), Albertini and Kohli (2013) has found that in Southern Europe intergenerational transfers are the least frequent and intensive, as opposed to Northern Europe where they are the most frequent and least intensive. Similar findings were found by Deindl and Brandt (2011); they showed that financial transfers to parents were very rare in Europe. Only 2% of the dyads were money transferred upwards, while financial transfers from parents to children were more frequent (4%). They also pointed out that financial support from parents is more likely in Northern and Western Europe, while in Eastern Europe transfers from children to older people are more likely.

The reasons behind this generational solidarity vary, but the literature brings to the fore the altruism between family members, and especially of parents towards their children (Becker, 1991), but also the expectations of reciprocity between generations (Coleman, 1990), as well as affection and need (Fingerman *et al.*, 2009; Fingerman *et al.*, 2011).

This paper aims to provide a descriptive shape of private intergenerational transfers from two perspectives, namely financial and time transfers in several European countries for the population aged 50 and above to see if at first glance there is a downward or an upward flow.

This paper is organized as follows: Section 1 reviews the main literature, both background theory and empirical studies; Section 2 describes the methodology used in our study; Section 3 discusses the empirical results and Section 4 concludes.

2. METHODOLOGY

This is a study with a quantitative approach, of the exploratory – descriptive type. Data are from the Survey of Health, Ageing and Retirement in Europe (SHARE), a cross-national panel study of individuals aged 50 or over. In this paper, we use the data from the seventh wave of the SHARE in which were included 17 European Countries (n=77263). These were Italy, Austria, Germany, Sweden, Spain, France, Denmark, Greece, Switzerland, Belgium, Czech Republic, Poland, Luxembourg, Portugal, Slovenia, Estonia and Croatia. The sample for analysis is composed of respondents who gave or received a financial or time resources transfer during the prior 12 months to the interview.

Financial transfers, following SHARE definition, include financial or material gifts valued at least at €250 (or the equivalent in local currency), given or received. Respondents were asked: “Now please think about the last twelve months. Not counting any shared housing or shared food, have you or your husband/ wife/ partner/ partner given any financial or material gift or support to any person inside or outside this household amounting to 250 euros or more?”. “Financial or material gift” was clarify as meaning “giving money” or covering specific type of costs such as those for medical care or insurance, schooling and down payment for a home. The same question format was used for financial transfers given. If respondents replied positively, they were then asked whom they gave the most to (or received from) during the past 12 months.

Time transfers include three types of support: personal care, practical household help, and administrative paperwork. Respondents were asked “In the last twelve months, have you given any kind of help listed on this card to a family member from outside the household, a friend or neighbor?”. The same question format was also used for time transfers received and therefore they were asked whom they gave (or received) during the 12 months. The SHARE transfer data

refer to exchanges between respondents and all other individuals (parents, children, grandparents, grandchildren, friends, neighbors, etc.).

The analysis proceeds in several stages. First, we describe the profile of financial and time-related transfers for each country. Second, we explore who gives and receives monetary transfers and who gives and receives informal care in Europe, the donors and the recipients. Finally, we examine differences of the transfers by their direction.

3. RESULTS

Table 1 shows the patterns of transfers in seventeen European countries. At first glance, it is not easy to interpret these differences. They do not follow a specific pattern such as grouping by a geographical division which can reflect different cultures or by different systems of welfare. Both money and time transfers between the elderly and people from their environment (family members, friends, neighbors, etc.) are quite asymmetrical. The older people in Europe are more donors of resources, whether financial or time, than beneficiaries. Austria, Germany, Sweden, Luxembourg, France and Switzerland are the countries with the greatest asymmetry between granted and received financial transfers. The elderly who received the least financial transfers were those from Spain and France, less than 4%. At the opposite pole are those from countries such as the Luxembourg or Denmark. In terms of time transfer, northern and continental countries had the highest transfer rates compared to southern countries. Spain and Italy have low rates compared to the other countries and it is in Sweden (38.4%) and Denmark where the highest rates are found (54.37%).

Table 1. The pattern of transfers in Europe, by type of transfer

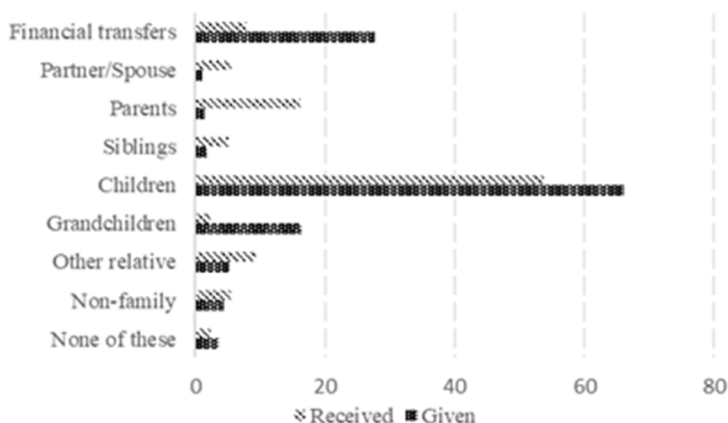
| Country | FT given | FT received | TT given | TT received |
|-------------|-------------|----------------|-------------|----------------|
| Austria | 37.18 | 11.78 | 29.11 | 29.26 |
| Germany | 36.93 | 7.21 | 38.21 | 25.61 |
| Sweden | 36.88 | 6.70 | 38.4 | 20.91 |
| Spain | 10.71 | 2.64 | 9.00 | 12.56 |
| Italy | 26.60 | 5.68 | 16.87 | 13.43 |
| France | 27.50 | 3.07 | 36.34 | 21.78 |
| Denmark | 38.24 | 11.24 | 54.37 | 32.7 |
| Greece | 19.34 | 8.12 | 14.01 | 18.75 |
| Switzerland | 30.42 | 4.92 | 35.05 | 19.42 |
| Belgium | 29.01 | 5.28 | 37.91 | 21.09 |
| Czech Rep | 31.34 | 17.41 | 36.57 | 40.22 |
| Poland | 35.35 | 14.60 | 15.43 | 14.37 |
| Luxembourg | 43.24 | 10.69 | 22.79 | 15.55 |
| Portugal | 26.88 | 5.47 | 16.88 | 11.78 |
| Slovenia | 22.01 | 4.89 | 21.41 | 16.63 |

| Country | FT given | FT received | TT given | TT received |
|---------|-------------|----------------|-------------|----------------|
| Estonia | 19.33 | 11.64 | 23.46 | 28.65 |
| Croatia | 17.61 | 6.26 | 32.65 | 29.18 |
| All | 27.74 | 7.93 | 28.64 | 22.57 |

Source: (Börsch-Supan, 2020, release 7¹)

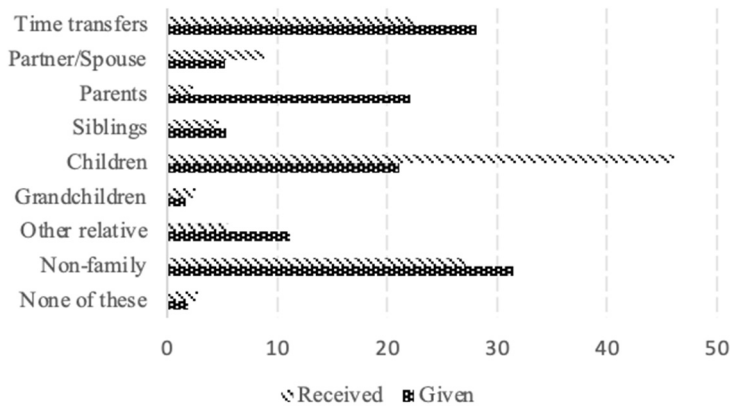
Figures 1 and 2 shows to what extent do transfers to and from other persons occur, if they remain in the family and which direction do they take. The process of financial transfers is concentrated especially in the family line. Transfers go mainly down, more precisely from the older generations to the younger ones. Among transfer providers, almost 66% give to their adult children. In 17% of cases the transfers are intended for grandchildren and in only 2% of cases for parents. On the other hand, 54% of the beneficiaries received a financial transfer from their children, and in 16% of the cases from their parents.

Grandchildren don't play an important role in this case, only 2% of our respondents received a transfer from a grandchild. Turning to time-related transfers, the donors are approximately equally divided between parents and children. Also, children represent approximately half of the recipients (46.13%), highlighting once again that time transfers are downward as well and in family line. Interestingly, non-family members (Minister, priest or other clergy, therapist or other professional helper, housekeeper/home health, care provider) account for almost one third of the network of time-related resources, both as recipients (27.14%) and as donors (31.54%), moreover is the most important source of the time transfer for the respondents.



Source: (Börsch-Supan, 2020, release 7)

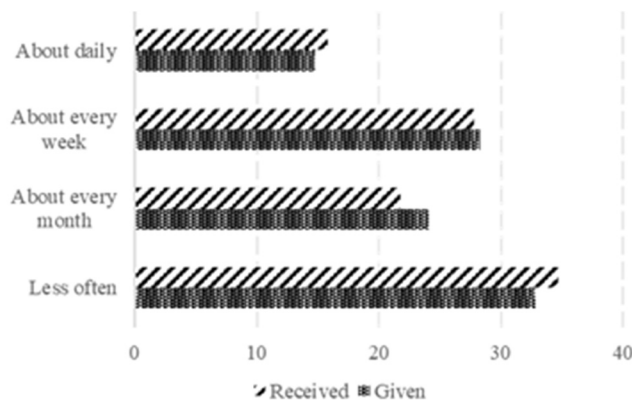
Figure 1. Financial transfers given and received by identity of donor and recipient



Source: (Börsch-Supan, 2020, release 7)

Figure 2. Time transfers given and received by identity of donor and recipient

Concerning the intensity of time transfers, we notice that at European level, the intensity with which transfers are provided doesn't differ much from the one with which they are received. Figure 3 shows that a majority of respondents granted / received transfers quite rarely in the last 12 months, respectively 32.81% and 34.66%. The next category is that of granting / receiving the time resources almost weekly, where similar percentages are registered, 28.31% respectively 27.7%.



Source: (Börsch-Supan, 2020, release 7)

Figure 3. Frequency of time transfers granted and received

Table 2 summarizes, depending on age, the main characteristics of the older people who granted financial transfers. It's observed that for all age groups the main donors are women. For the age category 65-74 years old, however, a similar percentage is observed between women and men. Regarding the marital status, there are quite large asymmetries except for the respondents aged 75+. 76.36% of the who

granted money transfers live alone, 23.61% in a couple and only 0.03% with other family members. Half of those aged 75 and above live alone and 47.19% in a couple.

Table 2. Characteristics of the older people who have given FT, by age ranges

| | Less than 65 | 65-74 | 75+ | Total |
|--------------------------------|---------------------|--------------|------------|--------------|
| Male | 42.08 | 47.70 | 45.26 | 44.99 |
| Female | 57.92 | 52.30 | 54.73 | 55.01 |
| Living arrangements | | | | |
| Live alone | 76.36 | 70.40 | 52.70 | 67.96 |
| Live in couple only | 23.61 | 29.47 | 47.19 | 31.95 |
| Live with other family members | 0.03 | 0.13 | 0.11 | 0.09 |
| Current situation | | | | |
| Retired | 24.28 | 85.73 | 91.41 | 64.49 |
| Employed or self-employed | 61.45 | 8.39 | 1.50 | 26.22 |
| Unemployed | 3.39 | 0.24 | - | 1.34 |
| Permanently sick or disabled | 3.66 | 0.61 | 0.55 | 1.72 |
| Homemaker | 5.46 | 3.96 | 5.43 | 4.89 |
| Other | 1.76 | 1.07 | 1.11 | 1.34 |
| Household income | | | | |
| Higher than national average | 31.69 | 25.56 | 20.32 | 26.44 |
| Lower than national average | 68.31 | 74.44 | 79.68 | 73.56 |
| TOTAL | 3727 | 3753 | 2653 | 10133 |

Source: (Börsch-Supan, 2020, release 7)

Regarding the employment situation, we see significant differences between under 65 and above 65 age categories. While the respondents under 65 years old are those who work, most of those who are 65 and above are retirees. It's observed that, with age, transfers remain low, i.e. from older generations to younger ones. Regarding the income level of those who grant monetary transfers, most have lower incomes than the national average.

Concerning the characteristics of the people who received financial transfers, in Table 3 we observe that a higher percentage of women than men were beneficiaries, mainly women under 65 years of age. Depending on the living arrangements, we notice that, between those under the age of 65 and between 65 and 74, there is a rather high similarity, registering similar percentages for those who live alone and for those who live in a couple. If we look at the employment situation of the respondents who received financial aid, we notice important differences depending on age. At European level, among those under the age of 65, 61.45% are employed or self-employed, 24.28% retired, and less than 4% are those who are either unemployed, permanently sick or disabled or have other occupational status. For those aged above 65 years old, most are retired. In terms

of income levels in Europe, we see clearly that the main beneficiaries of financial transfers, in all age groups, are the older people with low incomes.

Table 3. Characteristics of the older people who have received FT, by age ranges

| | Less than 65 | 65-74 | 75+ | Total |
|--------------------------------|---------------------|--------------|------------|--------------|
| Male | 33.07 | 31.45 | 31.02 | 31.98 |
| Female | 66.93 | 68.55 | 68.93 | 68.02 |
| Living arrangements | | | | |
| Live alone | 66.15 | 54.86 | 35.26 | 54.11 |
| Live in couple only | 33.85 | 45.14 | 64.48 | 45.82 |
| Live with other family members | - | - | 0.26 | 0.07 |
| Current situation | | | | |
| Retired | 22.27 | 84.28 | 87.74 | 60.15 |
| Employed or self-employed | 56.76 | 7.34 | 1.2 | 25.68 |
| Unemployed | 5.81 | 0.63 | - | 2.55 |
| Permanently sick or disabled | 6.85 | 1.46 | 1.86 | 3.74 |
| Homemaker | 5.71 | 4.71 | 7.46 | 5.84 |
| Other | 2.60 | 1.58 | 1.74 | 2.04 |
| Household income | | | | |
| Higher than national average | 22.40 | 14.53 | 10.52 | 16.60 |
| Lower than national average | 77.60 | 85.47 | 89.48 | 83.40 |
| TOTAL | 1161 | 957 | 780 | 2898 |

Source: (Börsch-Supan, 2020, release 7)

In what concerns time transfers provided, for all age groups it's observed that the highest percentages are registered among women, these being the main time donors as opposed to men (Table 4). Depending on the type of living arrangements, in the case of people who are less than 65 years old, 66.15% of those who provided time resources live alone and 33.85% live in a couple. For those in the age group 65-74 years old, there are no substantial differences between those who live alone or in a couple. In the age group over 75, just over half live alone (54.11%), while 45.82% live with their partner. By income level, for all age groups, granting time transfers is more common for those who have low incomes. Regarding the employment situation, the majority of the respondents who are less than 65 years old and who have provided time-related transfers are employed or self-employees.

Table 4. Characteristics of the older people who have given TT, by age ranges

| | Less than 65 | 65-74 | 75+ | Total |
|--------------------------------|---------------------|--------------|------------|--------------|
| Male | 39.83 | 46.73 | 49.22 | 44 |
| Female | 60.17 | 54.27 | 50.73 | 56 |
| Living arrangements | | | | |
| Live alone | 78.45 | 72.22 | 56.62 | 72.40 |
| Live in couple only | 21.53 | 27.76 | 43.34 | 27.58 |
| Live with other family members | 0.02 | 0.02 | 0.04 | 0.02 |
| Current situation | | | | |
| Retired | 22.85 | 87 | 92.88 | 58.61 |
| Employed or self-employed | 58.90 | 6.89 | 1.41 | 29.78 |
| Unemployed | 4.84 | 0.25 | - | 2.31 |
| Permanently sick or disabled | 4.48 | 0.55 | 0.25 | 2.30 |
| Homemaker | 7.15 | 4.05 | 4.78 | 5.60 |
| Other | 1.77 | 1.26 | 0.68 | 1.40 |
| Household income | | | | |
| Higher than national average | 23.27 | 18.45 | 85.81 | 19.92 |
| Lower than national average | 76.73 | 81.55 | 14.19 | 80.08 |
| TOTAL | 6758 | 5497 | 2531 | 14786 |

Source: (Börsch-Supan, 2020, release 7)

Table 5. Characteristics of the older people who have received TT, by age ranges

| | Less than 65 | 65-74 | 75+ | Total |
|--------------------------------|---------------------|--------------|------------|--------------|
| Male | 36.84 | 32.53 | 32.21 | 35.66 |
| Female | 63.16 | 60.47 | 67.79 | 64.34 |
| Living arrangements | | | | |
| Live alone | 69.30 | 60.27 | 37.92 | 52.97 |
| Live in couple only | 30.70 | 39.65 | 61.98 | 46.96 |
| Live with other family members | - | 0.08 | 0.1 | 0.07 |
| Current situation | | | | |
| Retired | 25.26 | 85.87 | 87.07 | 70.15 |
| Employed or self-employed | 51.37 | 5.62 | 0.75 | 15.82 |
| Unemployed | 4.97 | 0.26 | 0.06 | 1.44 |
| Permanently sick or disabled | 9.98 | 1.84 | 1.59 | 3.91 |
| Homemaker | 6.38 | 5.11 | 8.58 | 6.91 |
| Other | 2.04 | 1.30 | 1.95 | 1.77 |
| Household income | | | | |
| Higher than national average | 17.51 | 12.23 | 8.91 | 12.18 |
| Lower than national average | 82.49 | 87.77 | 91.09 | 87.82 |
| TOTAL | 3056 | 3557 | 5042 | 11655 |

Source: (Börsch-Supan, 2020, release 7)

Table 5 of the descriptive series present the main characteristics of the respondents who received time transfers. Regarding the gender of those who received the most time-related resources, in this case too, women register the highest percentages, especially those aged 75+, but also those who are less than 65 years old. Regarding the living arrangements, there are quite large asymmetries. For the age groups less than 65 years old and between 65-74 years old, it's observed that 2 thirds of those who are granted time transfers live alone. A quarter of those who are 75 years old and above live alone, and 2 thirds in a couple. As for the employment situation, we notice that respondents under 65 years old who received time resources are mainly working (51.37%). At the opposite pole are respondents aged between 65-74 and 75 and above, most of them being retirees. Once again, we see that most of those who have been granted time transfers are those who have lower incomes compared to the national average, regardless of age category.

4. CONCLUSION

In our study, we investigated financial and time resources transfers, based on Share survey, from an exploratory perspective. Our first conclusion is that the population over the age of 50 is at the center of a complex network of exchanges within the family. The trajectory of monetary transfers is a descending one, meaning that the older people were more donors than recipients, these transfers being provided especially to their children.

Intensity of time transfers doesn't differ much between the two types of time resources. At European level the highest percentages are recorded by those who provided/received a time transfer quiet rarely in the last 12 months; the next category is that of granting/ receiving the time resources almost weekly.

We also identify some particularities of donors and recipients. For both time and money transfers, women are the ones who grant but also benefit from, regardless of their type. Among the respondents who are donors of financial transfers, those who grant the most transfers are under 65 years old, live alone, are employed or self-employed and have lower incomes than the national average. The seniors who received the most financial aid fall into the age category 75+, live in a couple, are retired and have a low-income level.

As with money transfers, most donors are under the age of 65, live alone, work and have low incomes. Regarding the time resources received, the same pattern is followed as in the case of monetary transfers. That is, most beneficiaries are over 75 years old, have a partner, are retirees, and their income is below the national average.

NOTES

[1] FT and TT stand, respectively, for financial transfers above 250 euros and time transfers.

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ONLINE SHOPPING EXPERIENCE DURING CORONAVIRUS PANDEMIC

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ABSTRACT

Online shopping represents a constantly evolving field that continued to grow substantially during the coronavirus pandemic. The number of Romanians willing to choose online retail over traditional retail, increased in 2020, due to the restrictions imposed by the authorities. The aim of this study is to identify the motivation that determined a reorientation towards online and how consumers evaluated their first online shopping experience. The data was collected by conducting ten in-depth interviews with customers who performed their first online purchase during pandemic. Results show that the respondents were convinced to try online shopping by both extrinsic (social pressure, legislative restrictions) and intrinsic (the desire to learn something new, the desire to be in trend) factors. Results also show that traditional retail is still important when making an online shopping decision, as respondents chose to buy from brands they had previously interacted with in brick and mortar stores. Other findings refer to weaknesses and strengths of online shopping experience that would encourage or discourage future purchases. The biggest weakness of online shopping is considered the lack of human contact while the most important strengths refer to fast delivery and constant communication between the time of placing the order and the time of delivery.

Keywords: online shopping; customer experience; motivations for online shopping; blockers for online shopping; strengths and weakness of online shopping.

JEL Classification: L20, L81, M30, M31

1. INTRODUCTION

Coronavirus pandemic changed people's lifestyles in many ways. Social life was reduced to intimate friends and family, workplace and home became the same for most of the Romanian employees and the online environment was increasingly used in the field of education but also in the field of retail. During pandemic, the authorities imposed many restrictions to limit the spread of the virus among the population. For two months Romania was in lockdown and the restrictions

imposed included the closure of shopping centers (except supermarkets), bars, gyms and restaurants. In these conditions, the number of Romanians who preferred shopping in physical stores decreased by 9 %. According to a study conducted in May 2020 by iSense Solutions, “if before the pandemic, 66% of Romanians shopped exclusively in physical stores, during the lockdown the percentage of those who shopped only in physical stores decreased to 57%” (Tudor, 2020). The same study shows that the number of consumers interested to buy online increased from 33% to 38% after the lockdown ended: “the percentage of those who say they will buy both online and offline increased by 5 percentages to 38% (compared to 33% before the pandemic)”. Also, Romanians were more oriented towards online payments. For example, Ghiseul.ro, a website that allow Romanians to pay taxes and fees, registered 166 000 new users during pandemic (Ion, 2020). Currently the platform has 660,000 accounts, 25% of them being created on the first six months of 2020. Also, statistics revealed by Revolut show that “the number of transactions made by Revolut users to utility providers increased by 25%” (Iacob, 2020).

In this paper we investigate how consumers who shopped online for the first time, evaluated their first online shopping experience. Every year are conducted studies about the evolution of e-commerce in Romania (Iacob, 2018; Pavel, 2019; Paunescu, 2020). According to the study conducted in 2019, “buyers choose to purchase from online shops that are popular in the market, that have the lowest prices and the fastest delivery” (Paunescu, 2020). Also, recommendations from friends (word of mouth) and user experience are another two factors that will influence the purchase decision (Paunescu, 2020). GPeC also reported the top reasons why Romanians don’t shop online: “mistrust that the products on the website correspond to reality; inability to see, feel and test the products; mistrust with online shops / fear of fraud; delivery charges in addition to product price” (Pavel, 2019).

Our data was collected by conducting 10 semi-structured in-depth interviews. The interviews were structured, based on an interview guide that focused on three major topics: pre-purchase behavior (fears and blockers), motivations to engage in the purchase process and post-purchase evaluation (strengths and weaknesses that would encourage or discourage future online purchases). Results show that respondents were motivated to buy for the first time online by both extrinsic and intrinsic factors. The most important blockers for online shopping are related to delivery and lack of trust about product quality and website security.

First experiences are very important in deciding the future use/purchase of a product or service. An unpleasant first experience will confirm existing fears and will determine consumer to stop shopping in that location or from the same brand, while a pleasant experience will eliminate the fears and will encourage repurchase. Understanding the blockers as well as the factors that would help overcome these

blockers helps online stores to create a pleasant experience and a safe environment for the consumers that are not convinced by the benefits of online shopping.

In the literature we can find multiple information about people who buy online but few data about people who prefer not to buy through this environment. In this paper we want to understand how people that normally prefer to buy from brick and mortar stores evaluated their first online shopping experience. The main purpose of this study is to identify the aspects that have impacted the decision of buying online and how they evaluated this first experience in terms of strengths and weakness. This paper is primarily descriptive, aiming to identify qualitative information (fears, motivations) about customer experience during online shopping.

2. LITERATURE REVIEW

Online shopping represents one of the most investigated issue in the last years, due to its spectacular growth and the numerous areas of development. Most of the studies focused on: exploring the role of trust in the online environment (Hofmann *et al.*, 1999; McKnight *et al.*, 2002; Bart *et al.*, 2005; Urban *et al.*, 2009); comparing experiences between online stores and physical stores (Burke, 2002; Stir, 2018; Bridges and Goldsmith, 2000); identifying motivations and measuring customer satisfaction during online shopping (Close and Kukar-Kinney, 2010; Dholakia and Zhao, 2010; Vakulenko *et al.*, 2019) or measuring customer experience (Novak *et al.*, 2000; Constantinides, 2004; Klaus and Nguyen, 2013; McLean and Wilson, 2016). Another important topic addressed in the literature is related to comparisons between the behavior of buyers and non-buyers (Karayanni, 2003; Teo, 2006; Swinyard and Smith, 2003). Teo (2006) compared the expectations of consumers who have already adopted online shopping (adopters) with those who are reluctant to shop online and who prefer traditional stores (non-adopters). They found that adopters have higher expectations compared with non-adopters in terms of communication, brand tradition or reputation: “adopters generally expect online stores to be easy to contact, and provide sufficient information about services and choices available. Of lesser importance is the duration online stores have been in business. This is perhaps expected since online stores generally do not have a long history and tend to be relatively new” (Teo, 2006, p. 501).

The main advantages associated with online shopping are “shopping abroad, shopping any time of the day, having a wide selection, and saves time searching” (Teo, 2006, p. 503). In terms of disadvantages, the author divided them into three categories: problems related to products, problems related to post-purchase and problems related to the dependability of online stores (Teo, 2006). The problems related to products mainly concern the quality of the products bought online. The lack of direct interaction with the product before purchase increases the difficulty of evaluating them in terms of quality or performance (Grabner-Kraeuter, 2002).

Consumers will prefer to buy online products whose quality don't vary between the environments (books, CDs) but will have difficulties in buying products for which the quality is subjective. In a previous study we showed that, in the online environment, the product quality is evaluated mainly based on other consumer's reviews who touched and used the product (Stir, 2018). Therefore, consumers will prefer to spend more time searching for websites that allow ratings and to buy products already rated by other consumers. The problems related to post-purchase refers to the risks associated with the absence of a physical store where consumers can return the product or ask for service. The absence of a physical presence increases the uncertainty degree because "consumers worry is that online stores could dismiss their enquiries or request for help and offer poor after-sales service" (Teo, 2006, p. 504). The last category of problems refers to the lack of consumer confidence in the promises made by online merchants. According to Teo (2006, p. 505), "non-adopters tend to believe that online stores make more promises than keep them, make false claims and are unreliable".

Swinyard and Smith (2003) studied the differences in terms of lifestyle characteristics between adopters and non-adopters of online shopping and showed that "compared with online non-shoppers, online shoppers are younger, wealthier, better educated, have higher computer literacy, spend more time on their computer, spend more time on the Internet, find online shopping to be easier and more entertaining, and are less fearful of financial loss from online shopping" (p. 567). During their study, Swinyard and Smith (2003) identified four online shopper segments and four online non-shopper segments. Among online shoppers we find segments as:

- shopping lovers, characterized as "competent computer users, are familiar with online shopping methods, and will likely continue to be enthusiastic online buyers" (Swinyard and Smith, 2003, p. 588);
- adventuresome explorers known for their intensive use of computers "for checking or sending e-mail messages; in looking at financial information (stocks, trends); reading on-line news or magazines; visiting Internet sites related to [their] hobbies; visiting sites looking for tickets or reservations; looking for job opportunities; finding and viewing photographs, clipart, or images; searching for or download software; chatting on-line; and in visiting message news-groups" (Swinyard and Smith, 2003, p. 588);
- suspicious learners who are not very familiarized with the internet and "will not easily convert to online buying, but much of their reluctance appears to hinge on lack of training" (Swinyard and Smith, 2003, p. 590);
- business users who use the internet mainly for its utility - "although they use the Internet frequently for shopping, this, nor other online activities for that matter, appears to have little novelty for them" (Swinyard and Smith, 2003, p.590).

The non-shoppers segments are: fearful browsers who are mainly “lookers, not buyers. Along with other non-shoppers, this segment is fearful of several online risks: having their credit card number stolen, shipping charges, and wishing they could see products in person before they buy” (Swinyard and Smith, 2003, p. 591); shopping avoiders is the segment of those who “do not want to wait for products to arrive in the mail, want to see things in person before they buy, their friends do not shop on the Internet, do not understand the Internet ordering process, and do not know how to evaluate the quality of Internet merchandise” (p. 592); technology muddlers include individuals who “not only face a large computer-literacy obstacle, they also show little excitement about increasing their computer and online comfort level” (Swinyard and Smith, 2003, p. 593); fun seekers are the people “look to the Internet for its entertainment value” (Swinyard and Smith, 2003, p. 594) but not for shopping.

Michaud-Trevinal and Stenger (2012) studied online shopping experiences by investigating three dimensions: physical, ideological and pragmatic. The results of their study show that participants evaluated the physical dimension in terms of “design influence and visual aspects of the websites, the uses of customer reviews and opinions shared by the customers and the time pressure” (Michaud-Trevinal and Stenger, 2012, p.11). Participants affirmed that time passes faster when they are online searching or shopping and that recommendations from friends has a great importance when they choose to buy on a specific website. The second dimensions, the ideological one, was related to the hedonic or utilitarian value of shopping. Individuals can engage in a shopping behavior for hedonic reasons (for fun, to compensate a deception or as a reward) or for utilitarian reason (buy products based on necessity, buy a product at the best price-quality ratio). Referring to the pragmatic dimension, the authors found that “shoppers may place items in an online shopping cart in order to secure online price promotions, to put aside items they really like, or to have fun – and not necessary to buy the product” (Michaud-Trevinal and Stenger, 2012, p. 12). Therefore, consumer visit online stores and simulate the shopping experience even without an intention to buy the product.

3. METHODOLOGY

The sample consisted in 10 individuals that shopped online for the first time during coronavirus pandemic (March – July 2020). We used a selection questionnaire to filter only the participants who recently performed their first online purchase. The sample was a convenient one and included 6 women and 4 men, aged between 39 and 52 years. Respondents were familiar with the online environment, most of them affirming that, when they are online, they usually check their e-mails or social media accounts, read online newspapers or magazines, search for recipes or watch YouTube videos. The products purchased by the respondents during the pandemic were: electronics and household

appliances (toasters, mixers, laptops, printers), books, clothes, bed sheets and sports equipment (treadmill).

We conducted in-depth interviews based on an interview guide that included questions about the most important fears related to online shopping, the motivation to buy online; how respondents evaluated their first online shopping experience; the intentions to repeat online shopping and the factors that would encourage or discourage future online shopping. Each individual discussion lasted on average 40 minutes.

4. RESULTS

The most important blockers that prevented respondents to buy online before the pandemics were: blockers related to delivery, lack of trust about the product quality and lack of trust about online store security. The blockers related to delivery focused on two main issues: first, respondents were afraid of not being home when the carrier would deliver their orders and will have to do extra actions in order to receive the products (for example go to the carrier warehouse); second, the respondents were concerned that the products will arrive with defects due to transport conditions and the store will not accept it as a return. In reference to the second category of blockers, the one related with the product quality, respondents mentioned that the images and product descriptions from website doesn't always reflect the real product. They related stories of friends that received lower quality products or even different products than the one their ordered (products with lower technical specifications that were cheaper than the one they paid for). The last category of blockers is related to the website security. Respondents are reluctant to create accounts and provide personal information because are afraid of cybernetic attacks. Asked about the strategies to overcome these blockers, the respondents mentioned: visual inspection of packages before receiving them from carriers; buying products from popular stores, known for their fairness in relation to the customer; not saving sensitive data on websites. For example, for the delivery blockers, the respondents mentioned that, due to the pandemic restrictions, one of the family members was constantly home (working from home or online schooling), so they could receive the products; they visually inspect the boxes received from carriers before opening them; in case the products present defects, they immediately fill in a return form (within the next 3-4 hours after receiving the package). For ensuring product quality, respondents bought products only from online store that have a good reputation or from brands they are familiar with (brands that also have physical stores) and they read the reviews from other customers. The issues related to website security were overcome by choosing online stores with high notoriety or online stores recommended by friends; by having passwords on online store accounts different than the one from personal e-mail or by choosing to pay on delivery or by not saving credit card data on the website.

The motivations to perform the first online purchase included many factors that were grouped into two categories as follows:

Extrinsic factors

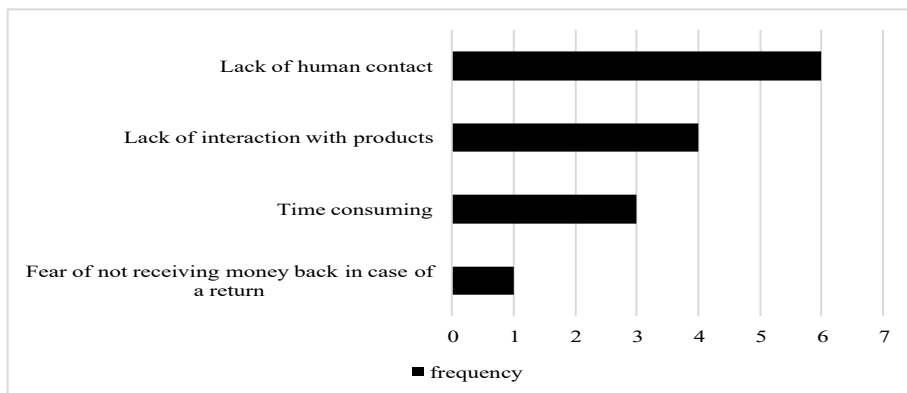
- legislative restrictions (“most of the physical stores were closed during lockdown”)
- workplace changes (“I’m working from home and the malls/shopping centers are far from my location”; “due to lockdown I had to supervise my children during home schooling and I had less time to spend on other activities, like shopping”)
- social pressure („my colleagues/friends encourage me to shop online by presenting its advantages and sharing their experiences”).
- the elimination of risks associated with online shopping, like free return: „if I don’t like the products, I can return them for free”.

Intrinsic factors

- fear of not getting infected („the physical stores are crowded and I’m trying to avoid contact with strangers”, „I isolated myself and my family but I needed to buy things”; „I think it’s safer not to touch objects that were previously touched by several people”, „It’s safer to stay home and get my products at my door”).
- the desire to be in trend with colleagues or friends (“I feel excluded, most of my colleagues/friends shop online and exchange impressions about their experiences”)
- the desire to learn something new, that might represent the future of shopping (“the online seems to be the future and the pandemic has been a good opportunity to try online shopping”; “my children teach me every day something new about smart devices or about online. Online shopping is something new to me and I wanted to try it”).

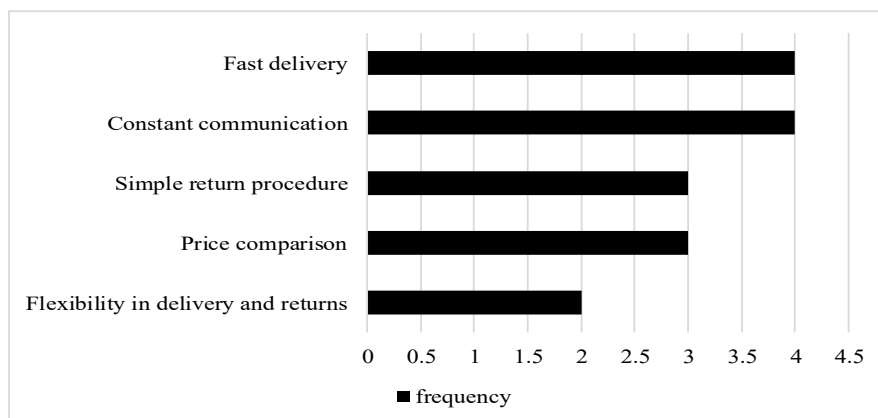
The most important weaknesses of online shopping experience, that would prevent future online purchases, are the lack of human contact and the lack of interaction with the products (Figure 1). Human contact is perceived as a benefit from two perspectives: first, respondents need human contact because some purchases require professional advice due to the technical specifications that the product implies (“I had to inform myself and understand the technical specifications”; “If I was in the physical store, I would have asked a professional in order to choose the right product”). Second, respondents needed human contact for the authenticity of the shopping experience (“the shopping experience was not authentic”; “The shopping experience was impersonal”). The second most important weakness of online shopping was the lack of interaction with the products before buying. Respondents declared that they would like to see and touch the product before making a buying decision because this would help them evaluate the quality of the product or the consistence with one's own style. Other

weaknesses mentioned were: online shopping is time consuming for technical products; fear of not getting the money back for the products they could return.



Source: own representation

Figure 1. Weaknesses of online shopping experience



Source: own representation

Figure 2. Strengths of online shopping experience

One of the strengths that encourages respondents to continue shopping online is the permanent communication from the moment of placing the order until the moment of delivery (Figure 2). The respondents were satisfied by the communication and the tracking they were able to perform for their orders. The possibility of free return, without having to explain it, is another thing that consumers appreciated and that would encourage further purchases. The respondents also appreciated the flexibility in terms of delivering and returning products. Two respondents affirmed that they saved time by paying the products

with the credit card and send them to different addresses (most often to parents) or by returning the products from a different address than the delivery address.

The main criteria used to choose an online store were the notoriety of the store, recommendations from friends and colleagues, the ratio between effort and benefits (time spent for searching or time/money spent before having the product). Also, respondents chose to buy from brands that also have a physical store. They affirmed that the previous experience gained in the physical stores was an important factor that determined them to also buy online from the same brand.

5. CONCLUSION AND IMPLICATIONS

In the literature we find comparisons between buyers and non-buyers in terms of expectations, lifestyle or buying behavior. This study helps online stores managers to understand better the reasons behind the decision not to buy online and to adopt strategies that mitigate these reasons. Adopting strategies that will help non-buyers to gain trust in online stores will lead to a win-win situation as non-buyers are aware of the benefits associated with online shopping but have fears that block the buying action.

The main blockers identified in this study are consistent with the one previously identified in the literature. Previous studies showed that one of the reasons Romanians don't buy online is represented by delivery charges. Our results showed that there are also other concerns related to delivery: not knowing when the order will be delivered or the fear that the products will be delivered with defects. The most important online stores started considering these concerns and display an estimated delivery date before adding the product to the shopping cart. This strategy should be adopted by all online stores to eliminate the stress associated with the delivery issues. On the other hand, the fast delivery and constant communication during delivery were mentioned as strengths for online shopping. The biggest online stores implemented strategies that allow consumers to have their orders within 48 hours from placing the order. This strategy offers consumers flexibility and allows them to manage better their time.

The most important weakness of online shopping experience is associated with the lack of human contact. People need contact for utilitarian reasons, as some products are very technical and need the advice of a professional or for hedonic reasons as some customers enjoy interacting with the sales staff before the actual purchase. To compensate this gap, online stores should add chat boxes that allow consumers to discuss with professionals, ask for advice or for clarifications about technical specifications. Also, people need to know there is someone they can contact in case of any problem with the product. Current policies related to warranty involve sending the product back to the seller and wait for a resolution, but there is no direct contact where consumers can call and ask for advice post purchase. In order to mitigate another important weakness, the lack of trust regarding the product quality, online stores should encourage consumers to review

and rate the products, as this is a very important aspect that inexperienced consumers will consider before making a purchase decision. People rely on other consumer's opinion and will prefer to buy products that were already tested by other consumers.

In conclusion, this study describes how consumers that performed their first online purchase perceived the shopping experience. We identified blockers, motivations and the factors that respondents appreciated as strengths or weaknesses during their shopping experience. Online store managers should consider these factors and should develop strategies that enhance customer experience and reduce the risks or fears associated with online shopping.

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TOOLS FOR SUSTAINABLE TERRITORIAL DEVELOPMENT: THE EXPERIENCE OF THE UKRAINIAN CITY

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ABSTRACT

The article presents a practical innovative experience for Ukraine in Vinnytsia, as one of the most successful in the development and practical application of tools to ensure sustainable development. The essence of practices in promoting the development of small and medium-sized businesses is revealed. The specifics of working with foreign investors and the creation of industrial parks, which may be relevant not only in Ukraine but also abroad, are presented. The prospect of creating a municipal innovation park as an investment in the prospects of innovation and the city's economy is revealed.

Keywords: sustainable development; tools of territorial development; development of small and medium business; municipal technopark; industrial park.

JEL Classification: O18

1. INTRODUCTION

The need to ensure the sustainable development of territories, especially cities, is common to many countries. The development of management mechanisms and the use of innovative tools, as well as the practical implementation of best practices is extremely important. The global pandemic has clearly revealed the weakness of urban economies, their vulnerability to stochastic factors and instability. The most vulnerable link was small and medium-sized businesses, the weakening of which significantly affected the formation of local budgets and further prospects for the development of territories. That is why the

study of the prospects of implementing the practices of ensuring sustainable development of territories tested by the experience of local authorities is on time.

Problems in the economic development of territories that hinder their sustainable development are quite typical for Ukrainian cities. Such problems include:

- cumbersome and insufficiently clear system of regulatory acts of the local regulatory environment in the field of economic activity;
- low level of capacity of small and medium business;
- the need for support of small and medium-sized businesses by local authorities and the lack of a platform for their full dialogue;
- lack of systematic information, "shadowing" of business;
- difficulties in promoting goods and services in new markets;
- lack of internal resources for successful competition;
- outdated approaches to doing business, developing education and science, maintaining infrastructure.

Lack of a new generation place in the community, where opportunities are created and business develops, where startups and research centers are concentrated, where quality education and advanced training are obtained, where business, community and government interact and cooperate for city development.

2. METHODS

The research is based on a systematic approach based on the concept of sustainable development.

The system approach in public administration is based on the theory of systems, the founder of which is Bogdanov (1989). It is fundamentally important that systemicity presupposes the predominance of the internal connections of the components with each other over the external influence on them. In the process of formation, the system causes the appearance of integral properties of its components, the organic connection between which determines the unity in the interaction with the environment. In fact, the territory should be considered as a system, and managed in view of the interconnectedness of its development.

Based on the work of Bertalanffy (1969), in terms of classification of systems by the criterion of ways to deepen their organization:

- those based on the dynamic interaction of parts (equifinal systems);
- based on a feedback scheme;
- Ashby homeostat (the system reaches a steady state by trial and error).

The territory is quite difficult to attribute to any of the types defined in the outlined classification, but the key features by which the groups are reflected to some extent in individual subsystems and are inherent in the whole system at different stages of its operation.

The need for a systems approach follows from the goals of general systems theory proposed by Bertalanffy (1969):

- study of isomorphisms (similarities) of concepts, laws and models in different branches of science for their transfer from one discipline to another;
- promoting the construction of adequate theoretical models for those areas of science in which they are absent;
- minimization of duplication of theoretical research in various scientific fields;
- stimulating the discovery of the unity of science by establishing links between specialists in different sciences.

In fact, the achievement of these goals will contribute to the application of the achievements of some sciences in the development of others. This indicates the need to apply a systems approach and developments in general systems theory to study the development of territories, as it requires the construction of an integrated construct that combines the achievements of different sciences. It should be noted that the general theory of systems is designed to identify generalized laws, patterns, principles that will be universal and objectively valid in various fields of scientific knowledge, including in the management of territories.

In fact, when it comes to the development of territories from the standpoint of a systems approach, it should be borne in mind that any system has three levels of organization:

- conceptual (level of system-forming property);
- structural (level of system-forming relationship);
- substrate (level of system elements).

The construction of the system itself begins with the construction of the upper level, i.e. the concept and structure, and only then is their implementation on the substrate (i.e. functional structure). That is, it is necessary to understand the vectors of development, what is important to do based on the existing practices of local governments of successful communities and territories, on the basis of which to build structures that are filled directly with elements.

Speaking of sustainable development, we have updated the approach adapted by Stenberg (2001) to the prism of sustainable development, the structure of which includes:

- economic dimension (artificial capital);
- ecological dimension (natural capital);
- social dimension (human capital);
- institutional dimension (social capital).

Of particular importance here is social capital, the core of which is the administrative apparatus of local governments, which can initiate the necessary transformations and provide expert support for their implementation.

Thus, combining a systems approach with the concept of sustainable development, the territory can be represented as a set of subsystems. The social subsystem - the primary system-forming component - is a form of human life based on social interactions, the essential feature of which is that the achievement of any common goals is achieved through the achievement of individual goals, and the achievement of individual goals through the promotion and achievement of common goals. The social subsystem is the most dynamic, exposed to external and internal factors. The state of equilibrium is maintained with the help of social institutions that, on the basis of common patterns, norms and values, organize a regional community that self-preserved and self-reproduces integrity.

Economic subsystem - the integral unity of producers and consumers, who are interconnected and interact in a single space. The main functional task of the economic subsystem is adaptation to changing internal and external conditions. The main purpose of the economic system - to meet economic needs as part of the needs of society, necessary for the preservation of life and development of economic entities. Satisfaction of economic needs is carried out with the help of material, spiritual or other goods.

Spatial subsystem - the space created by the regional community for the sustainable existence and development of social, economic, environmental subsystems. Space is an integrating subsystem that determines the affiliation of each of the subsystems to a given place. The structural basis of the spatial system of the region is its planning framework. One of the main functions of the planning framework and functional zones is distribution. They distribute energy, matter and information throughout the territory.

Ecological subsystem - the habitat of the regional community. In this case, it is necessary to distinguish between an urbanized ecosystem (environment within settlements and industrial complexes) and a natural ecosystem for the use of natural resources by urban systems.

3. DATA

As practice shows, on the way to balanced, planned development of territories, the role of focusing on decentralization of power and partnership between its various levels and branches, as well as the private and non-governmental sectors is growing. Summarizing the experience of European countries and the results of regional development policy in Ukraine, we can classify the institutions that are directly involved in the development of territories (except for public authorities and local governments at various levels): 1) associations of municipalities; 2) national development agencies; 3) chambers of commerce and industry; 4) technopolises; 5) business and innovation centers; 6) regional financial companies; 7) private consultants and experts; 8) trade unions; 9) organizations engaged in employment; 10) organizations that specialize in the dissemination of new technologies; 11) business incubators; 12) venture funds;

13) guarantee funds; 14) charitable foundations; 15) local development agencies; 16) communal foundations; 17) institutions of higher education and regional research centers; 18) technological research laboratories (Research & Development); 19) regional development agencies.

Local governments, together with representatives of the public and business sectors, should take an active position on the development of their territory, promoting the creation of such institutions, simplifying the regulatory environment, building a real foundation for the well-being of future generations. One of the most successful in such activities in Ukraine is Vinnytsia. Let's analyze what is special in the practices of the authorities, which brought the city to the forefront in Ukraine.

3.1. Introduction of tools to support small and medium enterprises

As stated in the Program for strengthening the competitiveness of small and medium enterprises of Vinnytsia City OTG for 2017-2020: "Vinnytsia is a modern, developed city with significant industrial, medical, tourist and cultural potential." It is this powerful, diverse set of potentials that is the basis for increasing the number of self-employed people and the sustainable development of small and medium enterprises in the community, as evidenced by the data in Tables 1 and 2.

Table 1. The number of employees in small and medium enterprises

| as of | Number of employees in small businesses, individuals | | | Number of employees in medium-sized enterprises, persons |
|------------|------------------------------------------------------|-------------------|----------------|----------------------------------------------------------|
| | Total | in legal entities | in individuals | |
| 01.01.2018 | 33468 | 21836 | 11632 | 25129 |
| 01.07.2018 | 25648 | 22554 | 13094 | 25442 |
| 01.10.2018 | 26077 | 22554 | 13523 | 25442 |
| 01.01.2019 | 35906 | 22664 | 13242 | 26622 |
| 01.04.2019 | 37829 | 23840 | 13989 | 26135 |
| 01.07.2019 | 37817 | 23840 | 13977 | 26135 |
| 01.10.2019 | 37613 | 23840 | 13773 | 26135 |
| 01.01.2020 | 37685 | 23840 | 13845 | 26135 |

Source: (Vinnytsia City Council, 2020)

The SME sector is an effective tool for reducing unemployment and a source of budget for the Vinnytsia City Territorial Community, however, small and medium enterprises are more sensitive to environmental influences than large businesses, and therefore need a well-designed systemic partnership support from local authorities. With this in mind, Vinnytsia City Council has done a lot of work to implement tools to support small and medium enterprises in the city's territorial

community, and the correct sequence of actions and decisions has made it possible to achieve real results. Therefore, in this section we will get acquainted in more detail with the Vinnytsia practice of supporting SMEs, which is rightly considered one of the best in Ukraine.

Table 2. The main indicators of small and medium business development

| as of | Number of registered small business entities, units | | | Number of operating small business entities, units | | | Number of registered medium-sized businesses, units | Number of operating medium-sized businesses, units |
|------------|-----------------------------------------------------|-------------------|----------------|----------------------------------------------------|-------------------|----------------|-----------------------------------------------------|----------------------------------------------------|
| | Total | in legal entities | in individuals | Total | in legal entities | in individuals | | |
| 01.01.2018 | 35881 | 9571 | 26310 | 30316 | 4674 | 25642 | 152 | 152 |
| 01.07.2018 | 38293 | 11854 | 26439 | 30709 | 4968 | 25741 | 168 | 168 |
| 01.10.2018 | 39055 | 12104 | 26951 | 31261 | 4999 | 26262 | 168 | 168 |
| 01.01.2019 | 39076 | 12416 | 26660 | 31182 | 5244 | 25938 | 168 | 168 |
| 01.04.2019 | 39116 | 12413 | 26703 | 31158 | 5251 | 25907 | 174 | 174 |
| 01.07.2019 | 39462 | 12698 | 26764 | 31574 | 5536 | 26038 | 174 | 174 |
| 01.10.2019 | 39906 | 12814 | 27092 | 31986 | 5652 | 26334 | 174 | 174 |
| 01.01.2020 | 39900 | 12716 | 27184 | 32061 | 5632 | 26429 | 174 | 174 |

Source: (Vinnytsia City Council, 2020)

As part of the Partnership for Urban Development international technical assistance project, which is being implemented from April 2015 to December 2020 by the Federation of Canadian Municipalities with the financial support of the Ministry of International Affairs of Canada, a focus group study was conducted in Vinnytsia. in order to determine the level of competitiveness of priority areas of small and medium enterprises in the community and develop recommendations for their development.

The survey of small and medium enterprises in Vinnytsia was conducted in order to clarify the current state of competitiveness of SMEs, i.e., to establish a baseline for the formation of the Program to strengthen the competitiveness of SMEs. The results showed that in general, respondents positively assess the business climate of 54%, considering the city a very good place to do business, and positively assess the activities of the government at the same time.

SMEs are focused on the domestic market and are insufficiently involved in foreign trade. Only 14% of respondents carry out export activities, 7% - plan to carry out. Most of the surveyed companies have been operating in the market for more than 10 years, mainly in the service sector (36%) and the industrial sector (21%), are SMEs according to the criteria of income and number of employees.

About 30% of respondents did not answer the questions about the tools of competitiveness development, export prospects, which indicates a lack of awareness, lack of interest and needs to be stimulated through the implementation of appropriate educational projects. Therefore, among the services necessary for

the development of competitiveness, the most popular are: access to finance, access to B2B databases, adaptation of sites, use of other resources to promote e-commerce, training on effective contracts, negotiation, foreign trade management, product quality management and services, assistance in business promotion (creation of a company profile, participation in exhibitions, business events, etc.), consulting on certification of goods and services.

The express analysis of the local business climate in Vinnytsia was carried out within the framework of the Partnership for Urban Development project in order to identify local business problems and develop specific recommendations (roadmap) for local governments to improve the local business climate. Thus, the analysis showed that 8 documents of the city council, its executive committee regulating business activities in 4 areas of regulation (land relations, urban planning and architecture / construction, trade, communal property, outdoor advertising, improvement of settlements), 25 decisions of the Executive Committee of the Vinnytsia City Council on the approval of standards of administrative services (starting and running a business). All of them contain unfavorable conditions and norms for business; 12 negative established practices that create barriers to business and relate to five areas of regulation (starting and running a business (administrative services), land relations, urban planning and architecture / construction, communal property, trade); 6 services / opportunities that business lacks, which was discussed during the consultation with representatives of the city business community.

Recommendations (road map) for specific actions in the areas of regulation in accordance with the powers have been developed for the local self-government bodies of the city of Vinnytsia. Therefore, the obtained results became the basis for the implementation of changes in local regulations and practices, as well as the deepening of cooperation between business and government in order to improve the business climate in general.

The main program document that defines the list of initiatives in the direction of support and development of local small and medium enterprises is the Program to strengthen the competitiveness of small and medium enterprises of Vinnytsia City OTG for 2017-2020 (The decision of Vinnytsia City Council no. 690 from 28.04.2017).

The main initiatives that have been implemented and are being implemented during the period of the Program since April 2017. is the City4Business Project (City4Business, 2020), which is a communication platform for business and government, contains information on support organizations and business associations, as well as tools to simplify the receipt of administrative services. Yes, the Telegram-channel City4Business has been created and is functioning - for entrepreneurs of Vinnytsia with information about current news, events, grants, seminars, trainings (Telegram, 2020).

30 public events "Business Opportunities Marathon in Vinnytsia" were held, almost 3,000 visits of entrepreneurs were provided.

The marathon of opportunities helped attract Vinnytsia City Council to work on the development of entrepreneurship 64 new partners, including the Union of Ukrainian Entrepreneurs, Oschadbank, Ukragzbank, Kredobank, BRDO.

In addition, among the events should be noted: the forum "START BUSINESS.CHALLENGE!"; Export Day in Vinnytsia, which included an educational seminar "Export Marketing, Sales and Tools for Export Development"; round table "Favorable business climate at the local level - joint responsibility of government, business and community"; seminars "Intellectual property - intangible assets of your business", "Low-budget marketing for Vinnytsia business", "Export: Opportunities and prospects for your business", training "Business Communications"; meeting "Business Support and Development Tools", information conference "Key Mistakes of Business in Employment" and a series of events "MeetUP for Business".

Regarding the review of the local regulatory environment, the first step was to organize a round table "Favorable business climate at the local level - joint responsibility of government, business and community." The event was attended by local business associations, university representatives and leading experts on the implementation of state regulatory policy. During the discussion, representatives of each party made proposals to define a common vision for removing unnecessary local regulations and simplifying the work of small and medium enterprises in Vinnytsia. As a result, all parties supported the proposal to create a common platform for the quality implementation of regulatory policy.

In order to determine the action plan for the review of the local regulatory environment together with the experts of the Center for Public Expertise within the UNDP project "Strengthening Business Associations of Small and Medium Enterprises" was developed "Action Plan for the review of the local regulatory environment in business ", which was approved by order of the mayor from 07.05.2018. no. 57-r (The Order of the Vinnytsia mayor no. 57 from 07.05.2018).

The plan provided for concrete steps to create favorable regulatory conditions for the development of small and medium-sized businesses in Vinnytsia, namely: determining the composition of the Commission for the Review of the Local Regulatory Environment; training of members of the Commission and employees of executive bodies of the city council; formation of concepts for improving the regulatory environment of the city; providing information and expert support to the work of the Commission; formation of an optimized list of regulatory acts based on the results of the review.

As part of the phased implementation of the Action Plan, by order of the Mayor dated 13.06.2018 (The Order of the Vinnytsia mayor no. 87 from 13.06.2018). In 87, the composition and provisions of the Local Regulatory Review Commission were approved.

In June 2018, in order to ensure the proper professional level of review participants, training was provided on the basic principles of state regulatory policy, as well as the principles and tools for reviewing and improving the local regulatory environment. The training was attended by 12 departments, 1 department and 2 utilities of Vinnytsia City Council and members of the Review Commission. The participants of the trainings considered in detail the stages of reviewing the regulatory environment, namely:

- first level of review: screening of the regulatory environment;
- second level of revision: anti-corruption examination and examination for compliance with antitrust law.

During 2018-2019, six meetings of the Review Commission were held, as a result of which 27 normative legal acts were developed, which have regulatory features and were revealed during the review of more than 400 normative legal acts of Vinnytsia City Council and its executive committee, 17 regulations were recommended. to cancel.

In 2017, within the framework of the Program for Strengthening the Competitiveness of Small and Medium-Sized Enterprises of the Vinnytsia City United Territorial Community for 2017-2020 (The procedure for partial compensation of interest on loans to SMEs, 2017), the Procedure for Partial Compensation of Interest on Loans to SMEs from the Budget of the Vinnytsia City United Territorial Community. Three banks were involved in the work of the Procedure - Oschadbank, Ukrgasbank and Kredobank. The procedure is designed to de-shadow the city's economy, create new jobs, reduce the cost of borrowed funds and, as a result, the development of small and medium enterprises in the city. This document provides a mechanism for compensation of interest for the use of credit funds raised in state-owned banks for the development of entrepreneurial activity in areas identified as priorities in the Program. In 2018-2019, Oschadbank issued 9 loans totaling UAH 9.1 million. The total amount of compensation for 2018-2019 to all participants in the compensation procedure amounted to UAH 954 thousand. For some borrowers, the compensation covers from 80% to 100% of payments for the use of loans (interest on the loan). During the period of using the loan, the participants of the compensation procedure created 154 new jobs.

Within the framework of the Program for Strengthening the Competitiveness of Small and Medium-Sized Enterprises of Vinnytsia City OTG for 2017-2020, measures aimed at information-consulting and financial support, development of new forms of effective interaction between the government and entrepreneurs are being carried out.

The information resources created for entrepreneurs are constantly maintained in the current state (section "Entrepreneur" of City4business, 2020; and, in particular, the questionnaire "Criticize-offer" on the official website of Vinnytsia City Council, 2020).

In the framework of the project "Quick start of business" in cooperation with the "Office of Effective Regulation" (BRDO) on the Platform of effective regulation PRO (2020) algorithms for opening 118 types of business activities in Vinnytsia were presented (How to become an entrepreneur, 2018). Currently, business activities are combined into 15 clusters that connect cases that help each other's development. The Roadmap "How to become an entrepreneur. 7 steps to FOP in Vinnytsia." and infographic of registration of a natural person-entrepreneur (City4business, 2020). Monthly Monitoring of Business Opportunities (trainings, seminars, training programs, export opportunities, etc.) is conducted and distributed (Department of Economy and Investments of Vinnytsia City Council, 2020).

Within the framework of the Criticize-Propose project, a survey of small and medium-sized businesses is conducted on the required educational programs for entrepreneurs, problematic issues and proposals. The results of the survey are published on the official website of the city council, in the section "Entrepreneur" (Vinnytsia City Council, 2020).

In addition, in order to ensure communication to create comfortable conditions for doing business, which is necessary for economic growth of the city, on December 26, 2018, a Memorandum of Cooperation was re-signed between the city's regulatory authorities and the Council of Entrepreneurs under Vinnytsia Mayor. The document aims, in particular, to minimize the mistakes of entrepreneurs and compliance with the law, to form a basis for dialogue between business, government and regulators and, in general, to create comfortable conditions for doing business, which is necessary for economic growth. The first Memorandum of Cooperation between the supervisory authorities and the Council of Entrepreneurs under the Mayor was signed in 2009. So far, it has been updated in accordance with changes in legislation and restructuring of territorial bodies, which is extremely important from the standpoint of promoting the development of SMEs in the Vinnytsia community.

Given the large-scale SME support policy developed by the Vinnytsia City Council, local government representatives should keep in mind that local business does not operate separately from the processes of community functioning, but is a full participant in its development. That is why local authorities should be ready for dialogue and maximally involved in the processes of promoting business development, based on their own capabilities, local characteristics and taking into account best practices.

3.2. Industrial parks: practices of building a dialogue with business

Despite the fact that in Ukraine as of 01.05.2020 the Register of Industrial Parks includes 43 industrial parks (Minister for Development of Economy, Trade and Agriculture of Ukraine, 2020), and since 2012 the Law "On Industrial Parks" (IP) has been in force, in practice they are almost non-existent. A positive

exception is the Vinnytsia City United Territorial Community, on the territory of which, as of the beginning of 2020, there are already three industrial parks.

It is no secret that Vinnytsia managers are qualitatively distinguished by progressive views and orientation and long-term results in decision-making on community development. That is why the creation of Vinnytsia Industrial Park was envisaged at the stage of adoption of the Development Strategy "Vinnytsia 2020" in 2013 (strategic priority 2 "Economic development aimed at high and quality employment") (The decision of Vinnytsia City Council from 26.12.2014). The decision was made in order to attract investment into the city's economy, provide favorable conditions for the operation and development of industrial enterprises, improve the investment image of the city, ensure economic development and competitiveness, create new jobs, increase revenues to all budget levels, develop modern production and market infrastructure.

The functional purpose of the industrial park includes the construction of the allotted land plot with the arrangement of modern engineering and transport infrastructure for the placement of production, storage and administrative premises. Therefore, its creation (for a period of 30 years) will allow to concentrate industrial production in limited areas outside residential, historical, cultural and recreational areas.

Up to 16 plots are planned on the territory of the industrial park. Priority areas for placement are companies with the latest technologies for the production of food, beverages, clothing, engineering, as well as logistics, service and more.

The key task of this stage is to find the city authorities and the management company, potential participants to ensure the development of the industrial park. To achieve this goal it is planned to implement the following tasks:

- conducting a promotional campaign among potential participants and meetings with interested participants, preparation of information on their requests, decision-making and signing agreements on participation in the industrial park;
- preparation of design and estimate documentation for the construction of production facilities by participants of the industrial park;
- construction of productions and their commissioning.
- It should be noted that the authorities in the Vinnytsia community focus on the fact that the speed of filling the park largely depends on 2 groups of factors:
 - objective, which are not influenced by the initiator and the management campaign: the political situation in the country; the economic situation in the world, and in the country in particular; investment climate in the country;
 - subjective factors that the initiator has the opportunity to influence: the effectiveness of the management of the management company in the context of a promotional campaign to attract participants; effective interaction with government officials in terms of obtaining permits; providing participants

with consulting assistance during the decision-making period; assistance in the selection and recruitment of labor for participants in the industrial park.

For a clear understanding of the strengths and weaknesses, threats and opportunities for the creation of an industrial park, a SWOT analysis of the creation of the Vinnytsia Industrial Park was carried out, on the basis of which a decision was made in 2014 to create it.

According to the Law "On Industrial Parks", the land for the future park must be free from construction, i.e. it must be a field. There were problems with this in Vinnytsia, because since the 1960s the city has been cramped with the surrounding villages. The situation was not resolved until 2015, when the Verkhovna Rada decided to establish new borders in Vinnytsia.

At the same time, the city council approved a new master plan of the city and the territory (about 80 hectares), near the old airport and near the existing one, received a special purpose as an industrial zone. At the same time a preferential fee for its use is set - UAH 12 per sq.m.

In 2016, the city approves the concept of an industrial park, and given that by law the industrial park must find a management company within three years, if not - close, the industrial park gets its management company - KP "Vinnytsia Municipal Innovation Center" (The decision of Vinnytsia City Council from 24.04.2015), which is accountable to the Vinnytsia City Council, subordinated to the Department of Economy and Investment, belongs to the communal property of the territorial community of Vinnytsia. It is worth noting that in Vinnytsia, thanks to its own KP, they bypassed the formality of the need for a management company and significantly saved the city budget baskets. As the former director of the Vinnytsia Municipal Innovation Center Vasyl Hoshovsky noted: "We paid UAH 7.2 million every year. the city for the use of the industrial park, and then the city allocated us the same funds and received again. This is a formality. But that's what the law required." (Vinnytsia Industrial Revolution, 2015)

The functional purpose of the industrial park is to build a modern industrial complex with developed engineering and transport infrastructure, storage and administrative premises in Vinnytsia. Therefore, the case did not end with the creation of a municipal management company. The city has laid all the necessary communications in the field, including bus stops and the launch of transport, and has begun construction of a cement-concrete road, which is planned to lead to a new airport nearby. The road is designed for 400 trucks. The project also provides paving, sidewalks on both sides, bike paths and modern lighting with LED lights.

Another advantage of the management company is that all networks are its property. According to the Energy Systems Code, a company can receive funds for transit plus taxes. Thus, the construction of networks cost UAH 13 million. Completed, by the way, in 4 months. The funds invested by the city in the infrastructure will pay off in 4-5 years only at the expense of taxes.

To equip Vinnytsia Industrial Park, 6.9 km of water supply and sewerage networks to Vinnytsia Industrial Park were built in 2019, a transformer substation, a 10 kV substation and power lines were built, an Internet cable was laid, and access roads were started.

On July 4, 2019, Ukro-Expertpostach LLC acquired the status of a participant in the Vinnytsia Industrial Park (a 1.5-hectare plot was leased). The participant started preparatory works for the construction of a plant for the production of lecithin with a capacity of 30 tons / day. The cost of the project is UAH 100 million, it is planned to create 65 jobs.

On December 20, 2019, a Memorandum of Understanding was signed with TISIES UKRAINIAN INVESTMENTS LLC. The Portuguese company intends to invest 28 million euros in the construction of a plant for the production of TCS blocks in Vinnytsia in the Vinnytsia Industrial Park, which will create more than 200 new jobs over three years.

As noted on the page of Vinnytsia Industrial Park, posted on the website of Vinnytsia City Council, enterprises-participants of Vinnytsia Industrial Park will receive the following benefits:

- exemption from equity participation;
- exemption from customs duties (on equipment and components);
- exemption from customs duties (on the import of property for investment purposes);
- benefits for imports from WTO members;
- exemption from customs duties (for equipment on renewable energy sources);
- land tax benefits;
- minimum rental rate;
- assistance in obtaining permits;
- organization of training of FE participants (at the expense of the initiator of creation and the managing company);
- a free trade agreement with Canada and the EU.

In fact, the first participant in the park was the holding UBC Group from Kharkov. This company is one of the world leaders in the production of refrigeration equipment.

In order to ensure the economic development of the city, intensification of investment activities, creation of new jobs, development of modern production infrastructure, in accordance with the Law of Ukraine of 21.06.2012 no. 5018-VI "On Industrial Parks", the Cabinet of Ministers of Ukraine of 16.01.2013. no. 216 "On approval of the Procedure for deciding on the inclusion of industrial (industrial) park in the Register of industrial (industrial) parks", taking into account the memorandum of cooperation between Vinnytsia City Council and PJSC "Ukrainian Beer Company", pursuant to Article 26 and Part 1 of Article 59

of the Law of Ukraine "On local self-government in Ukraine", in April 2017 the city council decided to create a joint industrial park "Vinnytsia Refrigeration Engineering Cluster" for a period of 30 (thirty) years and approved the relevant Concept (The decision of VMR no. 693 from 28.04.2017).

Thus, a second industrial park called the Vinnytsia Refrigeration Cluster appeared in Vinnytsia. The total size of the land plot is 19.2676 ha (a plot with an area of 8.4176 ha is communal property; a plot with an area of 10.85 ha is private property). In August 2018, the management company of the park - Industrial and Investment Company LLC was selected at an open tender. In the same year, the first stage of the new plant for the production of refrigeration equipment of UBS Group (Ukrainian Beer Company) was put into operation - LLC "Green Cool". Kharkiv residents built the plant in 14 months. Vinnytsia is not the nearest and even conditionally the closest city to Kharkiv, but the choice of this city clearly demonstrates the true value of the conditions created here. Currently, the company employs more than 500 people.

When filling the territory of the industrial park, it is projected to create about 2,000 jobs.

Thus, the Vinnytsia Refrigeration Engineering Cluster Industrial Park will be a constant source of filling the state budget, with a tendency to constant growth, in terms of value added tax, income tax, single social contribution and the city budget in terms of land lease. In addition, filling the budgets of all levels in terms of personal income tax.

In parallel with the already built and operating UBC plant, the construction of a plant for the production of equipment for winter sports by the Austrian company Head International Holding GMBH is to begin. We established cooperation with the company through a forum in Davos a few years ago. The Austrians chose from almost a hundred cities around the world and chose Vinnytsia.

For this purpose, a third industrial park was created - "Winter Sport", where the management company was LLC "HED Vinnytsia" - an Austrian subsidiary. The Austrians aim to build the world's largest plant for the production of ski bindings, boots and skis in Vinnytsia. The construction cost will reach 80 million euros.

"We were provided with professional support in Vinnytsia. In addition, there is a good location and there is no shortage of manpower. We evaluated six cities, and Vinnytsia turned out to be the best", said Gerald Skrobanek, Executive Vice President and Production Manager of HEAD.

In the future, the Austrians plan to build more factories supplying materials. To do this, they bought a total of 25 hectares of land.

Vinnytsia practice can be useful for cities and territories that seek to develop their industrial potential. Therefore, we can distinguish certain features.

1. It is very important to let the investor know what he will get if he chooses your city. The specific advantages of the infrastructure should be emphasized. For example, in Vinnytsia, next to the park, there is a functioning airport, to which a road is being built. This will increase the congestion of the resort and is an advantage for the investor.

2. You need to carefully choose an investor, because not everyone in your area has benefits. For example, the availability of a number of resources, materials for production or market for the goods it produces.

3. The city or territory must have a skilled workforce, so it is necessary to understand who graduates from local schools and which of these professions are a competitive advantage and, accordingly, to identify promising areas of industrial development

4. The Vinnytsia authorities acted as a deterrent between service monopolies (energy company and Vodokanal) and investors, laying all communications on their own and, in fact, preventing corruption risks and the risk of abuse of their position on these issues.

5. The main "trump card" of Vinnytsia managers in the functioning of industrial parks on their territory is declaring the need to use such a tool for community development in their own Strategy (demonstrates the principle of interest and mutual benefit, as well as long-term intentions, which is very important for investors) and friendly policy. for investments in the city, which is manifested in service and protection if necessary.

3.3. The first municipal technopark in Ukraine: the formation of a creative center in the community

Vinnytsia City United Territorial Community has chosen the path of being innovative and open to new technologies and international partnership, development of entrepreneurship according to modern approaches, inflow of investments. Vinnytsia City Council seeks to develop talents, create conditions for self-realization of young people in high-tech industries, without leaving the city.

In the world, innovation and technology parks have shown their importance both for settlements and for countries in general. Concentration of strong players in one place affects the level of development of universities, research centers, industrial clusters, small and medium-sized businesses, the general welfare of the population. The presence of an innovation park allows you to create new jobs, develop municipal infrastructure and attract investment for the city, increase the competitiveness of the city through the development of competencies of citizens. For young people, this means the opportunity to realize their potential, build a career, implement innovative ideas, and be a highly skilled worker in the city. Most innovation and technology parks in the world are created on the initiative of the state or municipality, as society directly benefits from their operation.

Crystal Innovation and Technology Park is called to become such a place - it is the first municipal innovation park in Ukraine, aimed at strengthening existing and creating new high-tech and creative industries in the city of Vinnytsia and Podil region. It is created to provide favorable conditions for the creation, operation and development of knowledge-intensive enterprises, support small and medium-sized businesses, improve the investment image of Vinnytsia and attract additional investment, international grants and other external resources to ensure economic development and competitiveness.

Therefore, the objectives of the innovation and technology park are to establish effective cooperation between educational institutions, institutions, business, government and the city community in order to accelerate:

- development of new technological solutions
- technology transfer
- reengineering and creating your own innovative solutions
- incubation and scaling of startups
- creation of new jobs
- modernization and transformation of educational services, due to the creation of a platform and facilities for research and joint projects.

The decision of the Vinnytsia City Council dated 04.10.2019 no. 1940 approved the Concept of development of innovation and technology park "Crystal" (The decision of Vinnytsia City Council no. 1940 from 04.10.2019). The launch of services in ITP "Crystal" should take place in stages. The forecast of realistic terms of ensuring the functioning of key programs provided by the concept is designed for 2020 - 2027. It is projected that more than 500 jobs will be created.

International experience confirms that the successful implementation of all key functions of the park requires expertise and experience, which can be gained through the creation of a team of professionals. With expertise in the management and development of similar facilities, a wide range of international contacts, developed development programs, a professional team will help create an innovative ecosystem, establish strategic cooperation with partners, promote environmental synergies.

It should be noted that the representatives of Vinnytsia City Council did not limit themselves to a purely theoretical study of the world experience of functioning of technoparks. Vinnytsia cooperates with the Kielce Technology Park in the field of entrepreneurship development, promotion of innovations and raising the technological level of enterprises. The cooperation agreement was signed on August 31, 2018 by Vinnytsia Mayor Serhiy Morgunov and the President of the City of Kielce Wojciech Lubavsky during the visit of the Vinnytsia delegation to Poland.

In particular, this agreement provides for knowledge exchange projects, projects and startups with Polish partners, so given that the Vinnytsia community is

working to create Ukraine's first municipal Innovation and Technology Park, successful more than 10 years of experience of Polish partners will be very relevant.

In Vinnytsia, 10 focus group discussions were held with representatives of small and medium enterprises (including IT companies) of Vinnytsia, representatives of the executive committee of the city council, journalists, representatives of banks, representatives of a number of associations of entrepreneurs and other public organizations. The analysis of key strategic documents of Vinnytsia City OTG, which will influence the creation and development of ITP "Crystal" and which, in the end, were the basis of the Concept of creation of innovation and technology park "Crystal", was also carried out, namely:

- Development Strategy "Vinnytsia 2020";
- The concept of integrated development of the city "Vinnytsia-2030";
- Decision of the Vinnytsia City Council dated June 27, 2018 no. 1222 "On approval of the Marketing Strategy of the city of Vinnytsia 2020";
- Decision of the Vinnytsia City Council dated 28.04.2017 no. 690 "On approval of the Program to strengthen the competitiveness of small and medium enterprises of the Vinnytsia City OTG for 2017-2020" (as amended);
- Decision of the Vinnytsia City Council dated 24.11.2017 no. 930 "On approval of the Program to promote investment in the Vinnytsia City OTG for 2018-2020" (as amended);
- Decision of the Vinnytsia City Council dated 24.04.2015 no. 2120 "On approval of the Concept of the Vinnytsia Industrial Park" (as amended);
- Decision of the Vinnytsia City Council dated 28.04.2017 no. 693 "On the establishment of the industrial park" Vinnytsia Refrigeration Cluster "and approval of the Concept of the Industrial Park" Vinnytsia Refrigeration Cluster".

On May 19, 2019, a Memorandum of Cooperation was signed between Vinnytsia Municipal Innovation Center and Keletsk Technopark, which is a continuation of the agreement concluded with Keletsk Technology Park in 2018.

In 2019, a grant was won for the implementation of a project to create the Vinnytsia Innovation and Technology Park, which was co-financed under the competition "Polish Development Assistance 2019" of the Ministry of Foreign Affairs of the Republic of Poland.

As a result of the project implementation was carried out:

1. Preparatory work: contact persons have been identified, communications have been established, and deadlines for the implementation of key project activities have been set.
2. Preparation for the study visit to Kielce: programs have been developed, the composition of the delegation has been formed, logistics has been provided.
3. Study visit to Kielce Technology Park (Kielce).

4. Preparation for public consultations: interested entrepreneurs were invited, places for consultations were provided, logistics of the Polish delegation (3 experts) were provided.

5. Conducting public consultations (about 100 representatives of the business environment).

6. Organization of work of experts within the project (development of strategic documents).

7. Preparation for trainings: carrying out logistic works, formation of training topics and curriculum.

8. Carrying out of trainings (3 trainings on 2 days everyone), on a subject:

- Basic principles of formation of technology parks in Europe. Marketing, communication strategy, proposals for the Park.
- Innovation centers - the role of the ecosystem. Process design - thinking.
- Incubation and acceleration services. Working with startups.

9. Holding a final conference.

On December 16, 2019, the final Conference of the above-mentioned grant took place, at which Polish experts presented "Conceptual bases of Innovation and Technology Park in Vinnytsia taking into account the activities of the Center for Entrepreneurship Development" and signed Memoranda of Cooperation between Vinnytsia City Council, Vinnytsia Center. innovations" and six leading Vinnytsia higher education institutions. The goal is to create conditions for young people who will be able to realize their talents, ideas, startups in cooperation with scientists, entrepreneurs and investors on the basis of the Innovation and Technology Park "Crystal".

On December 20, 2019, a Memorandum of Cooperation was signed between the Vinnytsia Municipal Innovation Center and the Bydgoszcz Industrial and Technological Park (Poland). The purpose of the Memorandum is to establish partnerships and coordinate the efforts of the parties to fill, maintain a friendly environment for local citizens and the functioning of economic entities by meeting their needs, providing high quality services to entrepreneurs, promoting innovation and improving the technological level of enterprises. also pooling the potentials of the parties.

Based on the model of The Metro Program Framework, a general algorithm for developing the concept of the innovation and technology park "Crystal" was built. The algorithm is based on a systemic relationship between fleet filling decisions and user value. Therefore, it will help to turn it into a multifunctional place with access to opportunities in many industries. The activities of the innovation and technology park will be aimed at a wide range of stakeholders: startups and innovative companies, representatives of small and medium-sized businesses, children, students, public and business associations. An important role

for the ecosystem will be played by R&D centers that create science-intensive and high-tech developments.

The Innovation and Technology Park will work with the industrial cluster to establish long-term partnerships. Around the ITP "Crystal" will be concentrated creative class of citizens who adhere to fundamentally new high standards of doing business, have an active life position, and create new opportunities for economic development of the city. ITP "Crystal" will provide quality infrastructure and modern content for residents and visitors.

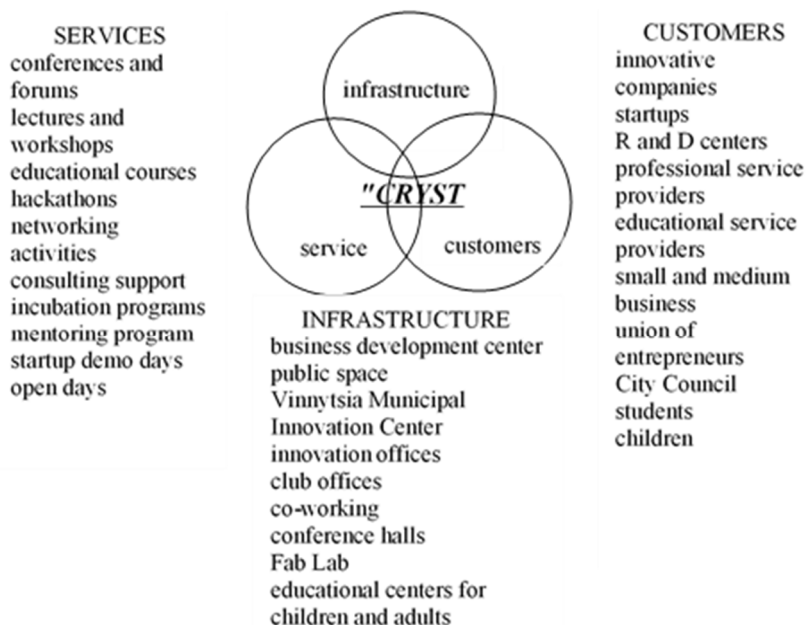
According to the concept of Crystal Technopark development, the park will have classic and club offices, public spaces, coworking, a conference hall, Fab Lab (a small workshop that offers participants the opportunity to make the necessary parts on machines), laboratories, training centers for children and adults, the Center for Entrepreneurship Development, which can be accessed by anyone interested in information and consulting services on starting and developing a business, KP Vinnytsia Municipal Innovation Center, bank branch.

The program of the Education Center will be aimed at developing business culture and IT skills. The Children's Technocenter will hold modern technological classes for children. Significant efforts will be made to build the ecosystem by strengthening contacts and establishing new relationships. Around the buildings will be created conditions for quality recreation, cultural events, festivals and city holidays.

The innovation ecosystem will be built on the principle of integrity, where each entity influences the success of the environment. Creating a quality infrastructure, forming a community of proactive people and companies that are ready to take responsibility and develop the ecosystem, expanding partnerships - is the key to the functioning of the innovation park. Within the ecosystem there will be an exchange of experience and knowledge, constant research and search for new solutions, synergy and added value will be created, which will directly have a positive impact on community development.

Given the peculiarities of the functioning of innovation parks in the world, Vinnytsia community plans to get a significant socio-economic effect. It is projected that the Crystal Innovation and Technology Park will become the center of innovation development of Vinnytsia City OTG and the region. Innovation will also help increase the competitiveness of the community in the international arena. According to preliminary calculations, the training programs and IT courses offered by ITP "Crystal" will train 600-800 people annually. Children will receive a modern developmental education that will allow them to quickly adapt to the technological world and lay the foundation for further successful lifelong learning. Students will be able to receive a progressive education that meets global trends and expectations of employers. In addition, students will have opportunities for employment in innovative companies or doing business in Vinnytsia. Students and children will be in an innovative environment and will constantly interact with

role models, which will create general inspiring and favorable conditions for self-improvement. This will create a cumulatively more than 5,000 highly skilled workers, with the skills to work with innovations and as many new high-paying jobs. The implementation of the project will help Vinnytsia City OTG to develop the IT industry and actually double the number of IT specialists working in the city for 7 years of activity (Figure 1).



Source: (Vinnytsia City Council, 2020)

Figure 1. Ecosystem of the Innovation and Technology Park "Crystal"

Businesses will have the opportunity to apply for information and consulting services to the Center for Entrepreneurship Development, which will contribute to the expansion and growth of business. Consulting support will also help people who are just thinking about their own business to start a successful business. The growth of entrepreneurial activity means the creation of new jobs, increased revenues to the budget of Vinnytsia City OTG, increasing the overall welfare of citizens. The partnership will strengthen interregional and international cooperation. Particularly high growth is expected in the IT industry

The amount of income of IT specialists-graduates of educational programs on the basis of ITP Crystal will be more than UAH 100 million. in 2026. Cumulative income for 7 years will amount to more than UAH 375 million. This in turn will increase tax revenues to the budget of Vinnytsia City OTG. In addition,

the development of the IT industry will have a positive effect on the development of other sectors of the economy through the introduction of new technologies

The inflow of investment will be due to an increase in the number of companies for investment, including startups and innovative companies, and improved conditions for foreign and Ukrainian investors. Close cooperation with the city's industrial parks and the presence of a demonstration room on the territory of the Crystal Innovation and Technology Park will open new opportunities for partnership, create favorable conditions for the inflow of Ukrainian and foreign investments and launch of investment-attractive projects.

The operation of R&D companies will promote research, give impetus to the development of science in universities, create a culture of research aimed at creating added value for society and finding business solutions. R&D centers will also create opportunities to attract funding for research through international programs and grants. In addition, a material base for scientific research will be created (Fab Lab, laboratories)

4. RESULTS AND DISCUSSION

Based on the results of the presented experience, it is necessary to update for other territories such aspects as:

- establishing an effective dialogue between government and business,
- the mechanism of partial compensation of interests on the involved credits to subjects of small and average business at the expense of means of the city budget is worked out,
- development of local SMEs,
- reduction of business regulation, corruption,
- increasing the range and quality of online services, business consulting.

It is expected that the Vinnytsia community will get a modern place to start and develop business, establish contacts, learn and get inspiration, and the operation of the technology park will contribute to community development and the formation of a positive image in the international arena.

The main results that will testify to the effectiveness of the project to create the first municipal Innovation and Technology Park will be as follows:

- Development of IT and other industries with high added value;
- Growth of local business; strengthening interregional and international cooperation;
- Increasing investment attractiveness;
- Popularization of scientific activity;
- Providing favorable conditions for the functioning and development of industrial enterprises; attracting investment in the city's economy;
- Increasing the number of jobs with wages higher than the average in the labor market;
- Reducing the outflow of labor abroad;

- Increasing the amount of tax revenues to the local budget;
- Strengthening the investment attractiveness of the Vinnytsia city community, including at the international level;
- Development of modern production and market infrastructure of the city and the creation and development, in the long run, of a modern ecosystem around industrial parks, as a consequence of their activities;
- Ensuring economic development and increasing the competitiveness of the Vinnytsia city community.

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THE INFLUENCE OF CLIMATE CHANGE ON LABOR MIGRATION

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ABSTRACT

Labor migration has many economic effects. Through this paper, we analyze the relationship between migration and climate change. We construct a balanced panel data set composed of six countries from European Union (EU) i.e. Denmark, Germany, Italy, Greece, Finland, Sweden as destination countries and Romania, also part of EU, as an origin country. We choose the six destination countries because all of them receive a large number of immigrants annually. We choose as origin country Romania as from Romania there are a lot of immigrants all over the world, especially to the selected destination countries. Based on data availability, the period chosen for analysis is between 1994 and 2017. We apply Dynamic Ordinary Least Squares Estimator and we obtain a negative relation between labor migration and climate change. Moreover, if we use an instrumental variable approach as a robustness check, our negative coefficient remains significant.

Keywords: labor migration; climate change; Romania.

JEL Classification: J01, Q59, C10

1. INTRODUCTION

Labor migration is a global trend. It can be determined by economical, political or climate changes reasons (Wesselbaum and Aburn, 2019). In 1985 was firstly introduced the term “environmental refugee” and this phenomenon is more and more in the attention of the researchers. One reason is the big number of people forced to moved because of the catastrophic events (floods, droughts, violent storms). For example during 2009-2014, 27 million of people were compelled annually by the climatic and environmental disasters to migrate. And

it is forecasted to be one billion of people until 2050 that will be constrained to change their location due to climate changes (Held, 2016).

Less developed and developing countries are more exposed to climate changes than developed countries. Therefore, in recent years researchers linked this problem with labor migration. This analysis intends firstly to understand the migration phenomenon in less developed and developing countries. In the literature there are highlighted three models of migration. First model of migration is based on the salary differences from two areas (Lewis, 1954). Migration from rural to urban takes place when there are high wages differences. The second model of migration was initiated by Todaro (1969). He claims that migration is not determined by salary differences but rather because of the expected wages differences between urban and rural. The third model of migration is The New Economics of Labor Migration (NELM) (Mincer, 1978). It distinguishes itself from the models above mentioned by the fact the rural zones are considered a risk factor in the decision of migration and, besides this, in the analysis it is taken into consideration the entire migrant generating household welfare and not the individual migrant (Lilleor and Van den Broeck, 2011).

In this study, we will focus on the impact of climate change on labor migration from Romania to six destination countries members of the European Union (EU). We choose the destination countries (Denmark, Germany, Italy, Greece, Sweden) because these countries are among the most important destination locations for the EU migrants. We include Romania as origin country in the study especially for the well-known fact that it is the country with the greatest rate of emigration from EU. In this regard we construct a panel database with annual flows from the period of time 1994-2017. We try to fill in a gap in the literature since as far as we know this type of analysis for Romania has not been covered before.

According to the literature when the net migration is taken as dependent variable then the results should show a negative relationship with climate change (Poston *et al.*, 2009; Qin and Liao, 2016; Pajaron and Vasquez, 2020). Going further, we expect to obtain a positive effect of gross domestic product on net migration (Tolmacheva, 2020) and a negative sign for the coefficient of unemployment variable (Franc *et al.*, 2019). When it comes to the way foreign direct investments inflows may affect the labor migration we should obtain a positive effect (Gheasi *et al.*, 2013; Bui, 2019).

This paper is organized in five sections, including this one. It is followed by Section 2, which comprises the review of some relevant papers from the literature. In Section 3 we describe data and the methodology that we use in the study. Then, it comes the discussions of the results in Section 4. The final section (Section 5) comprises the conclusions of the present study.

2. LITERATURE REVIEW

In the literature, an increased attention is given recently to the study of the relationship between climate change and labor migration. Most studies focus on areas affected by extreme weather events like floods, droughts, or unusual precipitations. Anglewicz and Myroniuk (2018) study the effects of smaller shocks (floods, droughts, starvation, fluctuation of agricultural products prices or death of an important member of the household) for rural zone of Malawi. The logistic regression was used on panel data from 2008 and 2010 and the results indicate that women are more likely to migrate due to a shock and men are determined to emigrate because of economic reasons.

One country which is considered to be the most vulnerable to climatic changes is Bangladesh. In the research was included data for 64 districts from the following periods of time: 1974-1980, 1981-1990 and 1991-2000. The methodology consisted in applying a regressional panel model. Based on the obtained results migration is influenced by the climate because the temperature continues to grow rapidly and agriculture is very affected. Implicitly the wages of people will be affected, especially wages of rural population (Iqbal and Roy, 2015).

Jha *et al.* (2018) bring their attention in the same geographical area as the previous country. Bihar is among the first generator of migrants from India and there are various reasons, such as social, economic and natural, which contribute on the decision to leave the origin location. Due to the fact that the majority of population is rural, the study focused on the migrational farmer's behaviour. Both socioeconomic and climate factors were analyzed. The first one through binary logistic regression model and the second one by descriptive statistics. To sum up briefly, farmers choose to migrate because of the climate changes. But, many others characteristics influence the migrant decision: age, number of males in the household, education, ownership.

Even though it is more obvious that rural population can be affected by climate change rather than urban population, Africa is an exception from this rule. Mueller *et al.* (2020) tested on four countries from East Africa (Ethiopia, Malawi, Tanzania, and Uganda) the implication of temperature and precipitations variabilities on temporary migration. The data were collected with a questionnaire and by applying a linear probability model was obtained that climatic variabilities has a high impact on migration from urban areas. Africa is considered to be one of the most vulnerable continent to climate change and Europe is the destination preferred by african people (Werz and Hoffman, 2016). We must mention that people will not be so mobile due to their high level of poverty. Many scenarios show that people from Africa are very affected by different climate events, but they will leave their country only if have already a socioeconomic stability. (Borderon *et al.*, 2019).

Another country on which it was tested this assumption is Khuzestan based on a questionnaire applied in November-December 2015. The sample was formed

by 69% men and 31% women. Khavarian-Garmsir *et al.* (2019) confirmed the hypothesis tested that migration of population is influenced by climate changes, such as storms and air pollution and, moreover, by political factors.

Wesselbaum and Aburn (2019) started from the idea that climatic changes have a positive effect on labour migration from affected countries. They applied a panel model on 16 countries of destination and 198 countries of origin. The data used was from the period of time 1980-2015. According to the obtained results, the conclusion was that high changes of temperatures and an increasing of climatic disasters are important factors in taking the decision to migrate.

China is vulnerable at increases of precipitations and temperatures. The internal migration was studied and the results of a Poisson Pseudo Maximum Likelihood model (PPML) implemented on an unbalanced panel with data from 1987-2015 confirmed that (Barassi *et al.*, 2018).

We think that a less explored area remains the study of the relationship between migration and air pollution, which is another proxy for climate change.

A study which has linked the migration with air pollution was made by Liu and Yu (2020). They took into consideration China because it is one of the most polluted country. Through a questionnaire applied on 94282 temporary migrants from 31 Chinese provinces, the researchers reached the following conclusion: an increase with 100 units of air pollution index will determine a decrease by 15.1% of the probability of temporary migrants to settle down permanently in that city. Moreover, the age plays an important role in studying the relationship between air pollution and migration. Researchers found that elderly people are more willing to move from a polluted zone rather than young people, because for them the health is on the first place and not having a work place is a reason they migrate. Another important factor is education which contributes to the decision of migration caused by climate change. People with less education level don't take into consideration that they are exposed to dangers by settle down in polluted areas.

Also, European Union is an area threatened by climate change. Forecasts show that this region will face by 2050 with extreme anomalies of temperatures. The main cause is the greenhouse gases emission (Larsen *et al.*, 2020). Some countries from this region were in the attention of the researchers. A systematic review was made on UK and it is assumed that people will not be displaced by environmental reasons, because they tend to adapt quickly (Fielding, 2011). Glaser *et al.* (2017) studied the influence of climate on migration from Germany to North America in the 19th century. Through a linear modelling approach was obtained that climatic hazards are indirect factors that influenced the migratory behaviour in the period analyzed. Therefore, our study is relevant for the literature by the fact that are included more countries from European Union. And, moreover that add empirical results.

3. DATA AND METHODOLOGY

In this paper we construct the labor migration (net migration) as a function of gross domestic product, unemployment, foreign direct investments inflow (FDI) and climate change (proxied by greenhouse gases) with a focus on climate change. We choose these variables based on the basic climate economic model developed by Bretschger and Karydas (2019). This model is constructed with macroeconomic variables and variables related to climate change. Also, this combination of variables is supported by the German Council of Economic Experts which claims that any attempt of studying anything related to climate without including some economic factors it will be a failure (Agliardi *et al.*, 2019). Eurostat is the main source for almost all the data, with the exception of FDI which was extracted from UNCTAD and greenhouse gases from OECD. Net migration is calculated as the difference between immigration and emigration divided by the number of population registered on 1st January of each year.

So, the tested equation will be as it follows:

$$Net_mig_i = \beta_0 \ln climate_change + \beta_1 \ln GDP + \beta_2 \ln unemployment + \beta_3 FDI + u_t \quad (1)$$

Where:

Net_mig_i – rate of net migration in Romania with Denmark, Germany, Italy, Greece, Finland, Sweden;

Lnclimate_change – greenhouse gases registered in destination country;

LnGDP – total gross domestic product of destination country;

Lnunemployment – total number of people from destination country registered as not having a place to work;

FDI – total inflows of foreign direct investments in destination country, calculated as percent from GDP.

We construct a balanced panel data for seven countries from European Union (Denmark, Germany, Italy, Greece, Finland, Sweden and Romania). Based on data availability the period is between 1994-2017, yearly data.

The purpose of this research is to test the relationship between labor migration in some countries from European Union and climate change. Before deciding what estimation method we will use there must be established some properties of the time series included in the study. Some unit root tests like Augmented Dickey-Fuller (ADF), Phillips-Perron (PP), and Im, Pesaran, Shin(IPS) are applied to see the order of integration of every series taken into consideration. It involves testing the null hypothesis $H_0: \alpha=0$ against the alternative one $H_1: \alpha<0$. Based on the results from these tests we will decide which panel method fits our data. Therefore, if all the time series are stationary (integrated of order “0”) than Ordinary Least Square is the most suitable method to be used. On the other hand, if they are non-stationary (integrated of first order) the Dynamic Ordinary Least Square (DOLS) procedure is proper to be implemented.

We must check for the long-run cointegration of the variables. For panel data Pedroni's cointegration test can be employed. This supposes to verify the following hypothesis: the null one (H_0) says that doesn't exist a cointegration relation and the alternative one (H_1) that exists a long-run relation between the variables. Seven test statistics are employed: Panel v-statistic, Panel rho-statistic, Panel PP-statistic, Panel ADF-statistic (these are panel cointegration tests) and Group rho-statistic, Group PP-statistic, Group ADF-statistic (these are group-mean panel cointegration tests).

Then, if the series are cointegrated we can apply DOLS model:

$$Y_t = \beta_0 + \vec{\beta}X + \sum_{j=-q}^p \vec{d}_j \Delta X_{t-j} + u_t \quad (2)$$

Where:

Y_t is the dependent variable;

X is the matrix of explanatory variables;

$\vec{\beta}$ is the cointegrating vector, which shows the long-run effect of a change in X on Y ;

p is the lag length;

q is the lead length.

4. EMPIRICAL RESULTS

Firstly, we employ the unit root tests (ADF and IPS). As we can observe in Table 1 for all variables tested in level, we can not reject the null hypothesis. This means the series are not stationary (they have unit root). But, after the 1st differenciation the p-value for all series doesn't exceed the significance value of 1% and we can reject the null hypothesis. We obtain that all variables are integrated of 1st order.

Table 8. Results of unit root tests

| | | Net_mig | Lnclimate_change | Lnunemployment | lnGDP | FDI_inflow |
|--------------------------|----------------------------|----------------------|-------------------------|-----------------------|----------------------|----------------------|
| ADF individual intercept | Level | 21.1503 (0.0978) | 3.97398 (0.9956) | 18.9830 (0.1668) | 13.5210 (0.4860) | 25.7394 (0.0279) |
| | 1 st difference | 73.0417 (0.0000) | 86.1063 (0.0000) | 37.8272 (0.0006) | 70.7312 (0.0000) | 84.5526 (0.0000) |
| IPS individual intercept | Level | -1.08997 (0.1379) | 2.35779 (0.9908) | -0.40343 (0.3433) | -0.21222 (0.4160) | -2.05460 (0.0200) |
| | 1 st difference | -6.97867 (0.0000) | -7.98876 (0.0000) | -3.69812 (0.0001) | -6.64309 (0.0000) | -8.04395 (0.0000) |

Source: authors own calculation in EViews

Secondly, we apply Pedroni cointegration tests. In Table 2 there are presented the results. Four tests out of seven are significant at 1% level and that show we cannot accept null hypothesis. Our variables are cointegrated.

Table 9. Pedroni's cointegration tests

| | Statistic | Prob. | Weighted Statistic | Prob. |
|-------------------------------------------------------------------|-----------|--------|--------------------|--------|
| Panel v-Statistic | -0.239567 | 0.5947 | -1.64599 | 0.9501 |
| Panel rho-Statistic | 1.4154 | 0.9215 | 1.576243 | 0.9425 |
| Panel PP-Statistic | -5.118497 | 0 | -2.95939 | 0.0015 |
| Panel ADF-Statistic | -3.866413 | 0.0001 | -3.84816 | 0.0001 |
| Alternative hypothesis: individual AR coeffs. (between-dimension) | | | | |
| | Statistic | Prob. | | |
| Group rho-Statistic | 2.531974 | 0.9943 | | |
| Group PP-Statistic | -18.09518 | 0 | | |
| Group ADF-Statistic | -3.259629 | 0.0006 | | |

Source: authors' own calculation in EViews

Since all variables are integrated of 1st order and there exists a long-run relationship thionship cointegration we can run Dynamic Ordinary Least Square model (DOLS). All the results obtained are significant at 1% level of significance. As we expected the values from Table 3 climate change show a negative influence on labor migration. More precisely an increase by one percentage of greenhouse gases will lead to a decrease by 0.07 percentage of net migration. In concordance with economic theory if a country have a higher value of gross domestic product is a more attractive destination country to migrate. So, an increase in GDP with one percentage will lead to an increase by 0.011 percentage of net migration. Moreover, if unemployment registers high values in a country, then it won't be on the list of choices for emigrants. In this respect we obtained that an increase by one percent of unemployment will determine a decrease by 0.01% of net migration. Also, if FDI inflows increases by 1% then net migration increases by 0.00755%.

Table 10. Dynamic Ordinary Least Square results

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|------------------|-------------|------------|-------------|--------|
| LNGDP | 0.011824 | 0.00374 | 3.161632 | 0.0024 |
| LNUNEMPLOYMENT | -0.010438 | 0.000944 | -11.0613 | 0.0000 |
| LNCLIMATE CHANGE | -0.074606 | 0.003591 | -20.7763 | 0.0000 |
| FDI INFLOW | 0.000755 | 196E-05 | 38.47933 | 0.0000 |

Source: authors' own calculation in EViews

For the consistency of the estimator used on processing the data, a robustness check is compulsory to be performed. In this regard we will use an instrumental variable estimator (Marchiori *et al.*, 2012). We introduce in the equation of net migration a new control variable: fertility rate (child per woman), because it is, also, important to include demographic factors in a climate migration analysis (Hugo, 2011). OECD was the source database. We run again all the steps performed above and the signs of the final results are unchanged and statistically significant at 1% level of significance.

Table 11. DOLS results with instrumental variable approach

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|-----------------------|-------------|------------|-------------|--------|
| LNCLIMATE CHANGE | -0.007096 | 0.000307 | -23.12519 | 0.0000 |
| LNNGDP | 0.008531 | 0.000277 | 30.74624 | 0.0000 |
| LNUNEMPLOYMENT | -0.004533 | 0.000520 | -8.718217 | 0.0000 |
| FDI INFLOW | 0.000545 | 1.02E-05 | 53.40774 | 0.0000 |
| FERTILITY CHILD WOMAN | -0.020358 | 0.002241 | -9.082715 | 0.0000 |

Source: authors own calculation in EViews

5. CONCLUSIONS

In this paper we were interested in studying the relationship between net migration and climate change for a set of 7 countries, with Romania as origin country and Denmark, Germany, Italy, Greece, Finland, Sweden as destination countries.

However, when it comes about European Union the literature on this subject is very scarce. In this paper we investigate if climate change have an impact on labor migration in some European countries. To reveal this we followed the basic climate economic model, which also involve to include economic factors. By performing a dynamic ordinary least square model and, also, an instrumental variable estimator we obtained the expected results. More concrete, a negative relationship between climate change and labor migration was found.

For future research it will be interesting to take into consideration the age of the migrant to have more specific results about which category of people is affected by climatic reasons. In this sense, will be easier for the governments to establish law and rules for migrants.

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IMPLICATIONS OF SOCIAL DISTANCING AMONG OLDER ADULTS – A LITERATURE REVIEW

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ABSTRACT

Since the outbreak in December 2019 of the novel coronavirus disease (COVID-19) in Wuhan, governments have tried to encourage and, in some cases, to force people to keep the physical and social distancing, so they can keep the virus from spreading. In most of the countries, the world took a break and schools, workplaces, social events and all these gathering have been closed. All these recommendations have ranged from isolating those with the disease to quarantining those suspected of being exposed to the infection. Concerns about increased age-based risks have led to additional recommendations for social distancing for people aged 60 and over, who have been encouraged not to leave their homes at all and to avoid social contact where possible. We all know that positive connections and social relationships are fundamental to our well-being; we are social beings after all, and all these recommendations can have some negative effects on us. With this review we discovered that some of the implications can be physical or mental. Old adults are especially predisposed to loneliness since before the pandemic and lockdowns. In addition to the physical or mental effects that the coronavirus pandemic has on the elderly, they are also affected by the economic problems caused. Many older adults lost their jobs due to the economic recession caused by the coronavirus pandemic and they started to feel economic anxiety.

Keywords: older adults; social distancing; coronavirus; mental implications; physical implications; economic implications.

JEL Classification: I12, D91, G41

1. INTRODUCTION

From the Spanish flu of 1918 to Ebola, to severe acute respiratory syndrome (SARS) and now the coronavirus pandemic, contagious diseases continue to threaten and disrupt human populations.

The epidemics are finally resolved, either by giving in to social action or by discovering a vaccine. Charles E. Rosenberg wrote that “epidemics start at a moment in time, proceed on a stage limited in space and duration, follow a plot line of increasing and revelatory tension, move to a crisis of individual and collective character, then drift toward closure” (Rosenberg, 1989). The same thing is happening today with the coronavirus pandemic which is probably the biggest social experiment in our lives. We do not know when or how it will end, even if we have a vaccine, but we know that these exceptional times give us a unique opportunity to learn more about the effects of a pandemic and how it changes people's behavior.

To study the implications of the coronavirus disease among older adults we started by creating a literature review for some of the papers that study the impact or implications of social isolation and loneliness on people and specific on old adults. Once the novel coronavirus outbreaks in China, governments have tried to encourage and, in some cases, to force people to keep the physical and social distancing, so they can keep the virus from spreading. In most of the countries, the world took a break and schools, workplaces, social events and all these gatherings have been closed.

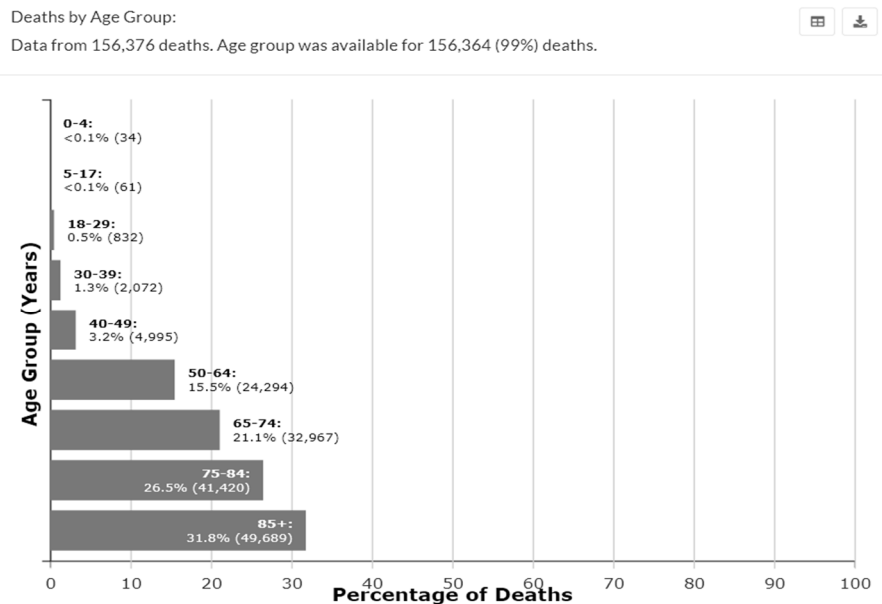
All these restrictions have been shown to reduce the number of new infections and deaths. It is estimated that if the social distance and quarantine measures implemented in Wuhan on January 23, 2020 were imposed later than they were, then 347 cities outside Hubei Province would have had 64.81% more cases (Fang *et al.*, 2020).

All these changes in economy, jobs, education, relationships and others, have mental and physical effects on us. Since this pandemic started, and even before, studies have been publishing about the effect of loneliness and sudden changes on people. Therefore, we all have to face this big challenge and we need to find out how to cope with this new lifestyle without affecting us on long term.

We choose to study the effect of this pandemic among old people because they are the most vulnerable in this time and they must face a lot more risks and additional measures have been implemented for their safety.

Although infection with the new coronavirus was obvious in all age groups, older adults are the demographic group with the highest risk of death from the virus. The risk of coronavirus infection is higher for adults over the age of 60, who have an increased risk of severe illness, hospitalization, intensive care unit hospitalization, and death (Centers for Disease Control and Prevention, 2020). According to the Center for Evidence-Based Medicine, the case fatality rate (CFR) is approximately 4% for patients over 60 years of age, 8% for patients over 70

years of age, and about 15% for patients over 80 years of age (Oxford COVID-19 Evidence Service, 2020). This compares with CFR of 0.0026% – 0.3% in those under 45 years of age.



Source: CDC COVID Data Tracker (Centers for Disease Control and Prevention, 2020)

Figure 1. Deaths by Age Group

As you can see in this graphic (Figure 1) the data provided by the CDC COVID Data Tracker shows that the percentages of deaths are significantly higher for people starting age 50 and above. Given that this segment is the most affected by the virus, we think is important to study the impact of social distancing and isolation among the people with the age starting 50 years of age and older who need special attention during the coronavirus crisis, and their voices, opinions and concerns need to be heard. This paper is divided in two parts. First part is about the economic implications that the social isolation and the pandemic has on old adults and the second one it is about the mental or physical implications.

2. ECONOMIC IMPLICATIONS OF SOCIAL DISTANCING AMONG OLDER ADULTS

The pandemic clearly impacted the economy all over the world. A lot of people lost their jobs, businesses were closed, stock market was affected, and more other economic impacts were felt by all of us. For example, Keogh-Brown estimated that the closing of schools for 13 weeks can cost UK up to £27 billion

(Keogh-Brown *et al.*, 2010). All these measures are for our own protection because in these times everything we do can lead to a quick spread of the virus and Jérôme found that a lot of economic activities can have unintended effects on the spread of the viruses or infections (Jérôme *et al.*, 2016).

In addition to the health risks that the old adults are exposed because of this pandemic, they are also affected by the economic problems.

Fetzer, using the global data from internet searches, found that economic anxiety appeared during and after the arrival of the pandemic. He also discovered that fear of the coronavirus disease amplifies the economic anxiety (Fetzer, *et al.*, 2020). During this period, a lot of people have concerns about the effects of coronavirus on the national economy and personal finances (Binder, 2020).

A big economic problem during this period is the job loss. According to Jacobson, 1.1 million people, 65 years and above have lost their jobs in U.S. during the pandemic (Jacobson *et al.*, 2020). Schwartz Center for Economic Policy Analysis (2016) found that older workers who lose their jobs take almost twice as long to find a new job compared to young workers and even if unemployed seniors find a new job, they can expect their new salary to be 23-41% lower than previous earnings (Johnson and Butrica, 2012).

Papadopoulos wrote about the health risks that are likely to discourage many able working elderly people to look for a job (Papadopoulos *et al.*, 2020). The risks associated with coronavirus infection increase with age, and Centers for Disease Control and Prevention reports that over 90% of hospitalizations and deaths caused by coronavirus come from people over the age of 50.

Maybe some of the old adults can choose to stay out of the workforce for a while, but some of them choose to retire earlier. Angelini studied the “early retirement trap” and found that people that retire early are more likely to struggle financially on the long run and, they believe early retirement should not be encouraged and governments should make it easier for retired people to take up paid work (Angelini *et al.*, 2009). Given the current situation and the lack of jobs this is not an option for a lot of old adults, and they should try to find other ways to ensure their economic safety.

Another economic impact, the pandemic has on old people, is that such events can change attitudes toward financial risks. Banks studied how the role of health and other life events changes the risk attitude and they concluded that older people are less open to take financial risks and that the main reasons of this is the health changes (Banks *et al.*, 2020). Other study found that old adults from developing countries are less willing to take any kind of risk, if they suffered an economic shock, during their lifetime, or if they have been through a natural disaster that had an impact on their income. On the other hand, in developed countries the risk decreases with unemployment, parenthood, health shocks or war exposure (Ayton *et al.*, 2020 and Bellucci *et al.*, 2020). Atella found that portfolio choices are influenced by the health perceived by the individual. If the health risk

is high, then people tend to cut the risk exposure or financial risk (Atella *et al.*, 2012).

During this pandemic, old adults can be overwhelmed with financial problems and a lot of these problems can have an impact on the long term. In the next part we will see that these economic problems can create more negative effects.

3. MENTAL AND PHYSICAL IMPLICATIONS OF SOCIAL DISTANCING AMONG OLDER ADULTS

We know that we are meant to have social interactions and it is a big part of our life. Being private of these fundamental needs can affect us in many ways but studies show that we can suffer a lot of mental and physical effects.

Concerns about increased age-based risks have led to additional recommendations for social distancing for older adults and, in some cases, they have been told to stay in the house as much as possible and avoid social interactions (Cash, 2020). One study shows that life satisfaction increases when time is spent with one's spouse and decreases when alone or when we spent time sleeping or watching TV (Hamermesh, 2020). In general, "Social isolation is a major health problem for older adults living in the community" (Nicholson, 2012). There are major concerns that all restrictions imposed by governments to control the spread of the virus will disproportionately affect the elderly especially those living alone (Armitage and Nellums, 2020). Arseneault writes about the expected response to this current distressing situation to be an increase in anxiety and depression symptoms (Arseneault, 2020). Given that a lot of old adults are living alone due to the loss of their life partner, they might start to feel a decrease in life satisfaction during the social isolation policies.

While these recommendations are intended for protection, according to Hwang "there is a high cost associated with the essential quarantine and social distancing interventions for COVID-19, especially in older adults, who have experienced an acute, severe sense of social isolation and loneliness with potentially serious mental and physical health consequences" (Hwang *et al.*, 2020).

Between mental health and physical health is a strong connection and mental health has a strong influence on physical health, but also Past physical health has an impact on future mental health (Ohrnberger *et al.*, 2017). This means that present health issues can lead to mental health in the future.

Yu found that social isolation is often associated with higher mortality among patients with cardiovascular disease (Yu *et al.*, 2020), and Heffner wrote about the risk for heart disease coronary (CHD) and mortality due to this disease is increased due to social isolation for the middle-age adults (Heffner *et al.*, 2011). Leigh-Hunt prove that in addition to cardiovascular diseases loneliness can also associated with mental health issues (Leigh-Hunt *et al.*, 2017).

In their review, Brooks found that among the most common and strong effects of quarantine are low mood, depression, stress, sleep disorders, irritability and anger (Brooks *et al.*, 2020).

Brodeur proved that mental health is affected by the pandemic using data from Google Trends. He studied searches between January 1st 2019 and April 10th 2020, to compare the data from before the pandemic with searches from after the total lockdown of the countries, and discovered that searches for loneliness, worry and sadness are increased but a decrease was observed for stress, suicide and divorce (Brodeur *et al.*, 2021).

According to Cacioppo and Fässberg, being alone or isolated can especially have a negative effect on sleep, reducing the efficiency of sleep by 7% and the time spent in the waking state becomes longer (Cacioppo *et al.*, 2002 and Fässberg *et al.*, 2012). Poor health, poor vision and a negative general condition can also be causes of loneliness and isolation of people. (Lee *et al.*, 2019). Not having a good sleep, smoking and lack of exercises are associated with a bad health (Contoyannis and Jones, 2004)

Going back to the first part where we talked about the economic implications, and old adults struggling financially, all those implications can also have a negative effect on health, mental or physical. Lenhart found that people with low income can have a bad health due to the stress and dealing with financial problems can cause health issues (Lenhart 2019). Easterlin talked about a direct correlation between income and happiness which means those with higher income are happier during the life comparing with people with lower income (Easterlin, 2001).

4. CONCLUSIONS

Looking back in our history we learned that epidemics and pandemics ravage humanity. The times we are living now during the coronavirus pandemic can help us to learn and prepare ourselves for the future pandemics. Due to digitalization and existing technologies, now it is easier than ever to collect data and study the implications of social isolation among people.

The existing studies show us that loneliness and social isolation can have mental and physical effect on older adults, especially. This age group has always been predisposed to loneliness due to the loss of a partner, spouse or close friends. During pandemics, recommendations of physical distance can often lead to social isolation and less interaction with others. These measures may help with the spread of the disease but even on a short period of time can affect health or economy of elderly.

In literature we can find many economic implications due to social isolation during the pandemic or loneliness. All these financial problems older adults confront can have a major effect on their quality of life from the present, but this might affect the future as well.

Studying the response of older adult during coronavirus pandemic can help finding solution, for the future pandemics and even during this ongoing pandemic, on how to avoid negative implications of these situation and how to cope with these harsh times.

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HEALTH CARE FINANCING IN THE REPUBLIC OF MOLDOVA UNDER THE PRESSURE OF COVID-19 PANDEMIC

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ABSTRACT

The study highlights the issue of attracting migrant workers in the financial contribution scheme to the health system in the Republic of Moldova. The right to healthcare of migrant workers is becoming a topical issue for an interconnected world in which hundreds of millions of workers are employed outside their countries of origin. The COVID-19 pandemic has revived interest in medical services for migrant workers, but academic interest is predominant from the perspective of migrant host states, not countries of origin. The research on the financing of the healthcare system through the attracting of migrant workers contributes to the completion of the health economy with theses related to the attracting of migrants in the health systems of the countries of origin and, simultaneously, aims to formulate recommendations for financing the medical system in Moldova and ensuring social justice.

Keywords: migrant workers; healthcare systems; health production function; public finances; health insurance.

JEL Classification: H12, H51, I13, I18

1. INTRODUCTION

The COVID-19 pandemic updates the relationship between public finances and economic and social rights, including the right to work and the right to health, as outlined in national legislation and the International Covenant on Economic, Social and Cultural Rights [1]. The wide spreading international labor mobility in the conditions of globalization is increasingly perceived in terms of health insurance for migrant workers in host countries and their right to healthcare. Since migrant workers have been one of the mechanisms of transmitting the new type

of coronavirus worldwide, generating the most virulent pandemic since the "Spanish flu" a century ago, and the massive return home of seasonal and circulating workers has put more pressure to national health care systems, the right to healthcare of these social categories also becomes crucial for countries of origin.

Deficient concern in the academic literature for the health of migrant workers in countries of origin has resulted in the development and implementation of public health policies that ignore the coverage of a large number of citizens in many parts of the world. The COVID-19 pandemic has for the first time seriously raised the issue of health insurance for seasonal workers and workers in Eastern Europe, who are employed (legally or illegally) in Western European economies and who came during the crisis to receive treatment (free of charge, in case of infection with the new coronavirus) in the countries of origin.

The Republic of Moldova has become one of the countries that imported COVID-19 through citizens returning home during the pandemic and it is also one of the countries that is experiencing additional pressure on the healthcare system due to the return home of some migrant workers. Thus, the health of migrant workers and the financing of the healthcare system has become a topic that has strained the public agenda in the Republic of Moldova, becoming not only a financial issue, but also an ethical, social and political one.

The efforts of public authorities, initiated by the country's president and taken over by the Commission for Exceptional Situations, which tried to force Moldovan citizens returning home to buy compulsory health insurance policy, proved to be illegal and ineffective.

Provision no. 10 of March 31, 2020 of the Commission for Exceptional Situations of the Republic of Moldova, provides: Starting with April 1, 2020, during the state of emergency, citizens of the Republic of Moldova and foreigners with a residence permit on the territory of the Republic of Moldova, who intend to cross the state border to enter the Republic of Moldova and do not have the status of insured person compulsory health care, will pay the compulsory health insurance in a fixed amount. Persons intending to cross the state border by air on the way to enter the Republic of Moldova will pay the compulsory health insurance, in a fixed amount, through the governmental Mpay system. Persons crossing the state border by land on the way to enter the Republic of Moldova, will complete and sign, mandatorily, the Statement of Own Responsibility regarding the obligation to pay within 72 hours the compulsory health insurance for 2020.

Mainly representing fortuitous and delayed reactions to a latent social problem, these approaches violate the constitutional norms [2] and are contrary to the existing legal framework in the context of compulsory health insurance, which exempts from compulsory payment for certain social categories and which Provision no. 10 of March 31, 2020 of the Commission for Exceptional Situations of the Republic of Moldova does not provide for them. Moreover, the provision

and related measures failed to cause all returning workers to purchase the compulsory health insurance policy, in the absence of effective mechanisms for monitoring and controlling the purchase of policies. Consequently, this controversial provision further antagonized society, generated a dispute on social networks between residents and the diaspora, further fueled the political conflict between power and opposition, implicitly by addressing the courts through which one of the parties in the parliamentary opposition demanded that the provision be declared unconstitutional.

Considering the reality that the healthcare system in the Republic of Moldova is inveterately underfunded and from the conviction that mandatory health care payments are important for public finances but crucial for social cohesion, the study develops a series of relevant recommendations for contouring efficiently the financing of the local healthcare system and tries to extend the research area of health economy.

The basic hypothesis - the attracting of migrant and circulating workers in the system of compulsory health insurance is *a priori* an approach of social justice and only *a posteriori* an approach of financial sustainability of the medical system in the Republic of Moldova.

2. LITERATURE REVIEW AND METHODS APPLIED

The economic theory has developed over time a distinct branch that studies the functioning of health systems, along with the factors and behaviors that affect health - the health economics. The emphasis of the health economy is a dynamic process that begins with the Fifth World Health Assembly in 1951, at which the WHO discussed the "economic importance of preventive medicine", a process that is academically expressed in an article signed by Kenneth Arrow in 1963 (Arrow, 1963). Although Arrow, one of the greatest economists of the twentieth century and Nobel Laureate in 1972 mentioned in that article in the *American Economic Review* that the study was about the "medical industry" and not "health," the article is often credited with giving birth to the health economics as a discipline.

Health economics has acquired the methodology of neoclassical micro-economics and has been concerned with efficiency, effectiveness, value and behavior in the production and consumption of medical services. Thus, from a conceptual perspective, the health economics is its branch that investigates how limited resources are allocated with alternative uses, designed to monitor diseases and improve and maintain health. Among the peculiarities that distinguish health economics from other fields are extensive government intervention, uncertainty and instability of information, recognized by almost all schools of economic thinking, and the presence of a third agent - the doctor (Culyer, 2005; Simon *et al.*, 2015).

Relevant to the respective study, healthcare economists have focused on the efficiency of different health systems from the perspective of financing these

systems, evaluating the different types of health systems starting from the neoclassical function of production (Figure 1).



Source: developed based on Anton and Onofrei (2012)

Figure 1. Structure of a health production-function

According to this context, the causal relationship between inputs and outputs/outcomes in health systems is increasingly studied in the literature, but the conclusions are often different. On the one hand, it is the authors who find a weak or insignificant link between health expenditure and the results measured by the three indicators mentioned in Figure 1 (Filmer *et al.*, 2000; Filmer and Pritchett, 1999; Joumard, 2011). On the other hand, there are more and more empirical studies that find a positive causal relationship between the financing of health systems and the results in different states, expressed by life expectancy, infant mortality and mortality in children under 5 years (Anyanwu and Erhijakpor, 2009; Baldacci *et al.*, 2002; Berger and Messer, 2002; Bokhari *et al.*, 2007; Evans *et al.*, 2000; Gani, 2009).

Although it expands its categorical apparatus and research area, implicitly different aspects of financial analysis and the relationship with the labor market, the health economy is still methodologically limited by the decoupling of "national health systems" from broader categories such as "global health" or "regional / continental health". These theoretical limits are relevant not only for the globalization / regionalization that the world economy is going through cyclically, but they are becoming even more important in the context of global pandemics, such as the COVID-19 case. In particular, the relationship between health systems, their financing and international labor mobility, in the conditions of globalization and / or regional / continental integration projects, is insufficiently researched. The few existing studies examine the access to health services of migrant workers mainly from the perspective of host states, not of the countries of origin of these workers and are less focused on labor mobility in the process of European integration (Khonggthanachayopit and Laohasiriwong, 2017; Mcpake and Normand, 2008; Vlădescu, 2000).

In the Republic of Moldova, the health economy is still a less researched field, while most of the research is more in the field of medicine, which tries to manage the medical system under market conditions, and less in the view of economists. Thus, a series of researches are focused on the conceptualization of the health economy and on health management, and when researching the

compulsory health insurance system, it does not provide enough space for the several hundred thousand workers who emigrated from the country (Ețco, 2006; Ețco *et al.*, 2011; Goma, 2011).

By reporting the financing of the health system in the Republic of Moldova to citizens employed abroad who returned home during the COVID-19 pandemic, this study seeks not only to address a challenge in the domestic healthcare system, but also to cover an existing theoretical gap in health economy. For this, the following research stages are carried out: the factors that led to the increase of costs with global health systems are defined; the causal relationship between funding (input) and outcomes (output) in the field of health, namely life expectancy at birth, is elucidated; the different models of health systems and related funding mechanisms are highlighted; the incomes and expenses of the medical system from the Republic of Moldova are analyzed; the potential income collected from migrant workers is calculated and complementary income measures are discussed.

The study involved using the paradigm of mixed research methodology, which involves the combination of quantitative and qualitative methods. Thus, the following were used:

The quantitative analysis of documents - research of existing studies and documents, collection of relevant statistical data;

The comparative method was used for comparing different health systems in terms of funding and data on different statistical indicators;

The diachronic method was used in describing the evolution of data on insured persons and financial indicators of the compulsory health insurance system in the Republic of Moldova.

3. RESULTS AND DISCUSSIONS

Health has become one of the fundamental values of contemporary civilization, while the right to health has become part of international and national jurisprudence. The quality of healthcare services is essential for the health of citizens and, as a consequence, for increasing life expectancy worldwide, which has reached 72 years globally (World Bank, 2020). The major challenge for national health systems at the beginning of the 21st century is that limited resources, the traditional concern of the economy, are combined with the exponential increase in healthcare costs.

The specialized economic literature defines seven factors that underlie the increases of costs in the field of health care: Information (Educated consumer); Price (Intensity of skills / qualifications); Innovation (Technology); Structure (Incentives); Lifestyle (Abuse); Living standards (High quality claims); Demography (Aging population).

Increasing costs, along with ensuring economic and social rights in welfare states with "powerful governments", have led to increased health spending

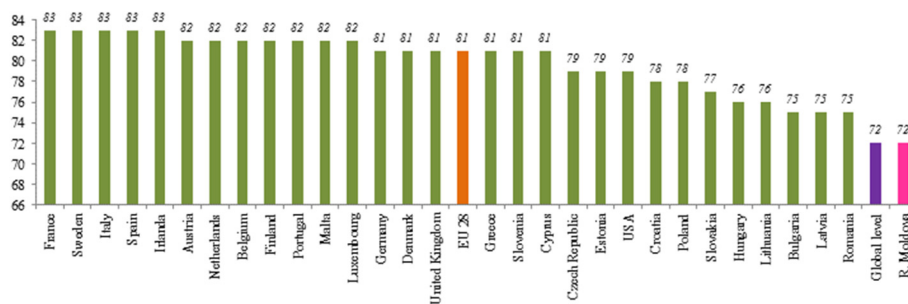
compared to GDP and in absolute values, initially in developed economies and gradually in the rest of the world. Statistical data for 2017 show that global healthcare expenditures amounted to USD 7.8 trillion (World Health Organization, 2020, p.11). At the same time, GDP-related expenditures, which accounted for 5.8% of GDP in 1970 in OECD countries, reached about 17% in the US and over 11% in France, while the average for the European Union was 9.6%. Simultaneously, there are substantial divergences in different countries of the world depending on the expenditure on health care compared to GDP, including within the European Union, although the differences are even greater in absolute values, which measure health expenditure per capita. Thus, France or Germany have more than double expenditures compared to Romania or the Republic of Moldova, where they constitute 5.2% and, respectively 4.4% of GDP (Figure 2).



Source: developed based on OECD Health Statistics (2018); Eurostat Database; WHO Global Health Expenditure Database

Figure 2. Healthcare Expenditure, 2017 (% of GDP)

The increase in health expenditures in the whole world has also meant an increase in global life expectancy, according to the data in Figure 3. Thus, the report of national and global health expenditures to outcome indicators, in terms of the structure of the production function of the world expresses the positive causal relationship between health funding and the results expressed in indicators such as infant mortality and life expectancy. Even if the positive causal relationship is much more obvious in the case of per capita health expenditures, the fact that Romania and the Republic of Moldova have the lowest expenditures compared to GDP among European countries included in the comparative analysis, and are also the countries with the lowest life expectancy- can be explained by this causality.



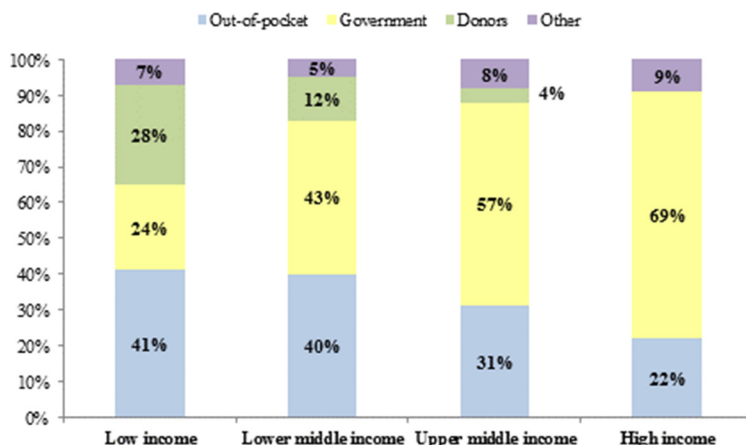
Source: developed based on World Bank (2020)

Figure 3. Life expectancy at birth, 2019

Healthcare funding around the world has also generated different models of national healthcare systems. Consequently, four basic models of national healthcare were established over time, which developed different funding mechanisms: the Beveridge model, introduced in Great Britain in 1948 and later taken over by Spain, the Scandinavian countries, New Zealand, Hong Kong; the Bismark model, introduced in Germany at the end of the XIX century and later taken over by France, Belgium, the Netherlands, Japan, Switzerland, and to some extent by Latin American countries; the national insurance model, mainly practiced in Canada, Taiwan, South Korea; the private insurance model, existing in the USA. Each of the models has different funding mechanisms.

Beyond the value of healthcare expenditures and models of healthcare systems, but in interdependent correlation with them, the sources of health funding in different countries of the world are equally relevant to the efficiency and sustainability of the system. Sources of health financing differ significantly depending on the socio-economic development of the states. In low-income countries, the main source of funding comes from the incomes of beneficiaries, with a significant share of 28% of external donations, while only 24% of the government's share. As revenues increase, the share of beneficiary payments and external donations decreases and, proportionally, the share of government increases, reaching 69% in high-income states (Figure 4).

The transition to a market economy in the Republic of Moldova was also associated with the reform of the healthcare system, from the planned national health system to the Bismark model. The complexity of the problems existing in the healthcare system of the Republic of Moldova, associated with incoherent reforms, poor technical equipment, lack of qualified medical staff and acute corruption, go beyond the research object of this study. Relevant for the present research are only the financial sustainability, which largely determines the other problems of the local healthcare system, correlated with the right to health of migrant workers.



Source: elaborated based on Xu (2019, p.9)

Figure 4. Source of health funding depending on the income of the countries

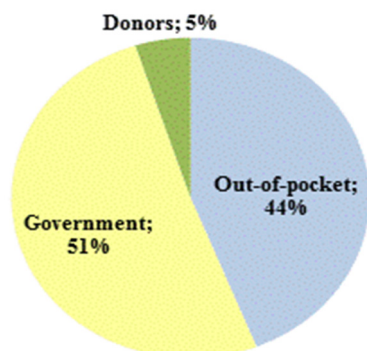
The Bismark model is one that is mainly financed by compulsory health insurance premiums. The legal framework in the Republic of Moldova establishes the operating conditions of this model and provides for its financing mechanisms. Thus, Law no. 411/1995 on health care provides that the financial means of public health institutions come from the funds of compulsory health insurance, from budgetary sources, from services provided against payment, from donations, grants and sponsorships, from other financial resources allowed by law.

Law no. 1585/1998 on compulsory health insurance, defines this insurance as an autonomous system of financial protection of the population guaranteed by the state in the field of healthcare by setting up, on the basis of solidarity, from the insurance premiums, money funds intended to cover the costs of treatment conditioned by the occurrence of insured situations (illness or disease). Compulsory insurance premiums represent a fixed amount or a percentage contribution to the salary and other rewards, which the insured person is obliged to pay to the insurer - the National Health Insurance Company. At the same time, Law no. 1585/1998 specifies that the Compulsory Health Insurance Funds are an integral part of the national public budget and are administered independently of other component budgets of the national public budget.

Law no. 1593/2002 on the size, order and terms of payment of compulsory health insurance premiums, establishes the legal framework for determining the size, order and terms of payment of compulsory health insurance premiums in the funds established and managed by the National Health Insurance Company. In this context, the Law specifies the categories of persons insured by the Government and contains two Annexes with different categories of payers: Annex 1 - Categories of payers of compulsory health insurance premiums in the form of a percentage

contribution to salary and other rewards; Annex 2 - Categories of payers of compulsory health insurance premiums, which are insured individually. Eventually, the Parliament adopts the Compulsory Health Insurance Funds Act annually.

According to WHO presented data, the sources of healthcare financing in the Republic of Moldova are represented by two major categories of payers and it is between the category of countries with below-middle and above-middle incomes. Thus, 51% represents the Government's share and 44% of the financial sources are paid out by the beneficiaries' contributions, while 5% are provided by external donations (Figure 5).



Source: developed based on Xu (2019)

Figure 5. Source of health funding in the Republic of Moldova

The number of insured persons has constantly increased in the Republic of Moldova, simultaneously with the degree of the compulsory insurance of the population. Whereas in 2014, there were 2,475,659 people insured and an insurance degree of 85% established, then in 2018 more than 2,642,969 are insured, which means an insurance degree of 88.2% (Table 1). Though about 12% of the population remains uninsured, the increase of almost 200 thousand insured persons is impressive when compared to the demographic dynamics and mass emigration of the population.

Table 1. Insured Persons, Years 2014-2018

| | 2014 | 2015 | 2016 | 2017 | 2018 |
|-------------------------------------------|-----------|-----------|-----------|-------------|-----------|
| Insured Persons, total, no. | 2,475,659 | 2,571,960 | 2,575,586 | 2,608,426 | 2,642,969 |
| Degree of Insurance, % | 85.0 | 85.6 | 85.8 | 86.9 | 88.2 |
| Persons Employed, no. | 846,790 | 850,107 | 852,124 | 860,261 | 874,643 |
| Persons Insured Individually, no. | 48,925 | 48,307 | 40,113 | 53,684 | 55,451 |
| Persons Insured by Government, no. | 1,579,944 | 1,673,546 | 1,683,349 | 1,694,481,1 | 1,712,875 |

Source: elaborated according NHIC data

Although the size of the insurance premium as a percentage and the size of the amount were not increased between 2015-2020, the revenues and expenditures of the compulsory health insurance funds (CHIF) increased during this period. Revenues increased to MDL 7,636.3 million in 2019, while expenditures to MDL 7,489.7 million. The draft amendment to the Law on Compulsory Health Insurance Funds (CHIF) for 2020, adopted in the Parliament of the Republic of Moldova on April 23, provides for total revenues amounting to 8 billion 151 million 392 thousand lei, of which revenues from compulsory health insurance premiums in the form of a percentage contribution from salary and other rewards - 4 billion 972 million 862 thousand lei. At the same time, the expenditures in CHIF constitute 8 billion 383 million 392 thousand lei, while the deficit is to be covered from the account of the balance established on January 1, 2020 in the amount of 549 million 696 thousand 500 lei (Table 2).

Table 2. Financial indicators of the compulsory health insurance system, years 2015-2020

| | 2015 | 2016 | 2017 | 2018 | 2019e | 2020p |
|------------------------------------------|---------|---------|-----------|---------|----------|---------|
| CHIF Income, mil. MDL | 5,062.9 | 5,764.2 | 6,256.6 | 6,877.4 | 7,636.3 | 8,151.4 |
| CHIF Expenditure, mil. MDL | 5,152.5 | 5,673.4 | 6,260.8,6 | 6,714.1 | 7,489.,7 | 8,383.4 |
| GDP Expenditure Share, % | 3.5 | 3.5 | 3.5 | 3.5 | - | - |
| Size of Premium, % | 9 | 9 | 9 | 9 | 9 | 9 |
| Size of Fixed Amount Premium, MDL | 4,056.0 | 4,056.0 | 4,056.0 | 4,056.0 | 4,056.0 | 4,056.0 |

Source: elaborated according to NHIC data

The increase in the number of insured persons in recent years and, respectively, the increases established to the CHIF budget, does not fundamentally change the healthcare system in the Republic of Moldova. The financing of the local health system remains insufficient, both as a share in GDP and in absolute values per capita. This acute underfunding of the healthcare system, which has become the main problem of the healthcare system in the Republic of Moldova, largely raises widespread corruption in healthcare, poor technical and drug endowment of public health institutions, lack of medical staff, etc. The COVID-19 pandemic has elucidated the vulnerabilities of the domestic healthcare system, in particular by the fact that the highest rate of infections among medical workers has been attested due to the shortage of appropriate equipment.

Compulsory fixed-term health insurance premiums, which are intended to attract migrant workers in the national health insurance system, have a small share in CHIF. These are just over 100 million MDL in recent years, exceeding 113 million in 2020. Since no public institution in the Republic of Moldova has accurate data on the number of emigrants from the Republic of Moldova, implicitly data on the number of seasonal and circulating workers in order to calculate the fundraising potential of migrant workers, we resorted to a simulation

using existing public data. For this, we differentiated between the number of the population with habitual residence, reported by the National Bureau of Statistics, and the number of insured persons, reported by the NHIC. After that, the difference was multiplied by the size of the fixed amount premium, initially by 100%, then by 50% of it, since the legal framework provides for this reduction for those who purchase it until March 31 (Table 3).

Table 3. The collection potential of amounts from circulating and seasonal workers

| | No. | CHIF Income | | Collection Potential, millions MDL | | Collection potential, % compared CHIF | |
|-------------------------------------------|-----------|-------------|-----|------------------------------------|---------------|---------------------------------------|---------------|
| | | mil. MDL | % | Full Cost | Discount Cost | Full Cost | Discount Cost |
| Insured Persons | 2,642,969 | 6,877.4 | 100 | 7,034.6 | 6,956.0 | 102.3 | 101.1 |
| <i>Individually</i> | 55,451 | 110.4 | 1.6 | 267.6 | 189.0 | 3.4 | 2.7 |
| Population with habitual residence | 2,681,734 | 6,877.4 | 100 | 7,034.6 | 6,956.0 | 102.3 | 101.1 |
| <i>Difference/ Migrants</i> | 38,765 | - | - | 157.2 | 78.6 | 2.3 | 1.1 |

Source: calculated according to National Bureau of Statistics and NHIC

The collection potential of income from migrant and seasonal workers, according to the simulation, is relatively modest. The maximum collection capacity varies between 78.6 and 157.2 million MDL, based on the premise that a degree of coverage with 100% health insurance premiums can be provided. At the same time, the percentage increase in CHIF revenues varies between 1-2%, which is important for every public budget, but not significant. Finally, the share of CHI premiums in the fixed amount of the total compulsory health insurance funds can increase from 1.6%, as it is now, to about 3%.

Therefore, the attracting of migrant workers (especially circulating and seasonal workers, who are not exempted from the legal framework from the procurement of health insurance premiums) in the compulsory health insurance system will not solve the financial sustainability of the health care system in the Republic of Moldova, which requires structural reforms and complex interventions.

The implementation of feasible mechanisms for collecting compulsory premiums from migrant workers is rather an approach to social justice, especially when the existing legal framework expressly provides for the principle of universality and equality. The fact that migrant workers returning to the country in the context of the pandemic, were not insured persons in the national system but received free treatment in the medical system, clearly elucidated for the first time this social injustice. In this context, requiring migrant workers to obtain compulsory health insurance premiums must be associated with a set of related measures, making it constitutional, feasible and part of a reform of the entire

healthcare system aimed at ensuring its financial sustainability. The measures are as follows:

- The reform of justice and modernization of public institutions, in order to improve governance and reduce corruption.
- Introduction of new formal co-payment mechanisms to reduce informal payments and increase the budgets of healthcare institutions.
- Streamlining the collection mechanism of policies in order to identify and attract people who are not insured.
- Streamlining the mechanism for paying the health insurance premium by circulating and seasonal workers.
- The rejection of the anti-constitutional mechanisms imposed by Provision no. 10 of March 31, 2020 of the Commission for Exceptional Situations of the Republic of Moldova.
- Establishing 14 working day deadline, in order to pay the compulsory insurance premiums.
- Correlation of mandatory payments with Law no. 105/2018 on the promotion of employment and unemployment insurance.
- Correlation of health insurance for retired persons by the Government, with the individual contribution of migrant workers to CHIF
- Initiation of negotiations with the states of the European Union and the CIS to sign Agreements for migrant workers' healthcare, following the model of the Social Security Agreements.
- Attracting the diaspora (Moldovan citizens living and working abroad on a permanent basis, at least 183 days a year) to finance the healthcare system in the Republic of Moldova.
- Attracting diaspora can only be voluntary, by establishing special purpose funds. (e.g.: A fund to finance the technical endowment / hospital equipment and drugs for district hospitals or for the elder-care, which the diaspora has in custody).
- Development of Voluntary Health Insurance.

4. CONCLUSIONS

- The health economy will become an important branch of contemporary economics, as the COVID-19 pandemic put pressure on national systems of public health and led to the one of the most serious global economic crises, after which it called for large budget deficit in most of the world's economies.
- The right to health of migrant workers becomes important for both the public finances of host and home/origin states, that is why it must be a distinct subject of the health economy in the face of increased international labor mobility in the 21st century.

- In the Republic of Moldova, the health economy is still a less researched field, while most research is focused on the management of the healthcare system in market conditions or general issues of compulsory health care, less on financing the health system from the perspective of migrant workers.
- There is a long-term causal relationship between health care funding and outcomes of life expectancy at birth.
- The different financing mechanisms that exist in the contemporary world are determined by the various health models and, in particular, by the degree of development of the states.
- The Bismark model is gradually confirmed in the Republic of Moldova, based on compulsory health insurance premiums, which is associated with a chronic underfunding of the healthcare system.
- Insufficient funding of the health system largely raises the issue of widespread corruption in healthcare, poor technical and drug equipment of public health institutions, lack of medical staff, while the COVID-19 pandemic has elucidated the vulnerabilities of the local healthcare system.
- The attracting of migrant workers in the system of compulsory payments is above all an approach of social justice and can only partially solve the financial sustainability of the healthcare system in the Republic of Moldova.
- The decisions imposed by Provision no. 10 of March 31, 2020 of the Commission for Exceptional Situations of the Republic of Moldova, that set the condition of purchasing health insurance policy by migrant workers, are unconstitutional and inefficient.
- The simulations and calculations carried out reveal the fact that the establishment of legal and efficient mechanisms for collecting mandatory fixed payments from migrant workers, could increase CHIF revenues by about 78.6-157.2 million MDL.
- The efficiency of the mechanism of payment of the health insurance premium by the circulating and seasonal workers must be associated with a series of related structural and sectorial reforms, which will ensure the proper functioning and financial sustainability of the healthcare system in the Republic of Moldova.

NOTES

- [1] International Covenant on Economic, Social and Cultural Rights. Adopted and opened for signature by the United Nations General Assembly on 16 December 1966 by Resolution 2200 A (XXI). Entered into effect on January 3, 1976. Ratified by Decision of the Parliament of the Republic of Moldova no. 217-XII of 28.07.1990.
- [2] Art. 27 (2) of the Constitution of the Republic of Moldova, which states that: "Every citizen of the Republic of Moldova is guaranteed the right to establish his domicile or habitual residence anywhere in the country, to leave, emigrate and return to the country".

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ERP SYSTEMS AND THE PERFORMANCE OF THE COMPANIES

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ABSTRACT

The development of the new technologies and the evolution of automated processes in recent decades have made increasingly intensive the use of ERP (Enterprise Resource Planning) systems by the companies. If at the beginning, they were used only by large corporations, they are nowadays used by more and more companies of different sizes. The migration of the companies to the digital environment is increasingly significant in all the industries, and if the information is digital, it can be automated by ERP systems. The main effects and advantages of using the ERP systems are supposed to be: saving time, increasing the productivity, increasing the incomes, diminishing the expenses, redefining the business model, redefining the relationship with the customers, increasing the internal resources available in the company or increasing the competitive advantages, and many others. Taking into consideration the link between the use of ERP systems and the expected positive effects, many researchers have studied different assumptions. The purpose of this paperwork is to analyse the existent literature regarding the economic benefits of using the ERP systems and also to analyse the perception of Romanian companies on the benefits that an ERP implementation can bring.

Keywords: ERP; financial performance; organizational performance; accounting and finances; efficiency.

JEL Classification: M29

1. INTRODUCTION

1.1. Background information

The ERP systems date back to 1970s, and they were firstly used in the assistance of the manufacturing process (MRP - Material Requirement Planning), and afterwards, since the 1990s, their use has been extended to all the processes of a company and got close to the form of the actual application. Nowadays, the ERP systems have made a new step in their development by using the internet,

through their integration with WEB pages, and through cloud computing, so as they can be remotely maintained or accessed.

The ERP tools are IT systems that ensure support for the companies in carrying out their activity, and they facilitate the globalization. They are increasingly used by most of the companies, and their benefits can be seen in all the areas, at the level of financial management, operational management, strategic management, human resources management.

1.2. ERP Systems

The ERP systems (Enterprise Resources Planning) represents the software tools, which integrates more flows and processes within a company, processing a shared database, and which operates independently. It generates digital data in a unique manner so as they can be easily managed, centralised and interpreted. The purpose of ERP systems is to ensure a data transparency within an organisation and to facilitate the access to them.

An ERP system facilitates the information flow between all the internal functions of a business, and manages the link with the external parts (Aldossari and Mukhtar, 2018). The different functionalities of the ERP systems allow the companies to plan their activities (Aburub, 2015). The ERP systems can integrate more functionalities (accounting, acquisitions, marketing and sales, human resources, finances and manufacture, business intelligence, but also specific functionalities, developed based on the needs of the companies).

Through the implementation of some ERP systems, the companies expect to reduce the costs and to improve the effectiveness of total expenses through the creation of more efficient business processes.

The ERP system is an integrated, multidimensional system which is based on the business model, and that supposes planning, control and optimisation, producing added value for all the involved parties (Slooten and Yap, 1999).

There are different ERP providers on the market, as for example SAP, Oracle, Microsoft and many others, the position of the ERP system on the market being established by its execution capacity and complexity, and by the diversity of its functionalities (Gartner Group, 1995). Therefore, ERP providers always try to improve the solutions they offer through their integration with the most recent technologies.

The companies can better exploit the business data by using the ERP that integrates a unique database (Altamony *et al.*, 2016).

Because the resources planning has a very important role, the systems standardization and processing are objectives to be achieved when the companies decide to implement an ERP system (Koch, 2011).

2. ERP SYSTEMS AND THE PERFORMANCE OF THE COMPANIES

2.1. Performance measurement

From the financial point of view, the performance of a company can be measured either through its capacity to generate and to increase profit by increasing the revenues or by reducing the expenses, or through increasing the productivity.

The potential benefits of the implementation of an ERP system can be the increase of the productivity, of the revenues, the decrease of some types of expenses, obtaining a competitive advantage, increase of the market value of the company or the increase of the performance of the company through efficiency.

In the analysed studies, in relation to the gained performance or not, upon the implementation of an ERP system, it is analysed through the following indicators: return on assets (ROA) (Hunton *et al.*, 2003; Barber and Lyon 1996; Bharadwaj, 2000), return on investment (ROI), asset turnover (ATO), return on sales (ROS) (Hunton *et al.*, 2003), value of shares (Hayes *et al.*, 2001), productivity, ratio of employees to revenues, ratio of cost of goods sold to revenues, ratio of selling, general and administrative expense to revenues, residual income (Poston and Grabski, 2001), non-profitability measures as inventory turnover (IT), fixed assets turnover (FAT), accounts payable (AP), sales day outstanding (SDO), current ratio (CR) (Matolcsy *et al.*, 2005).

2.2. Positive effects of ERP implementation on the performance

The productivity growth can be the effect of the processes' standardization and the decision-making improvement by accessing the data in real time. The perfect connection of the functional entities within a company through an ERP leads to the productivity growth (Legare, 2002).

It is assumed that when the companies implement an ERP system, they shall have a financial performance improved by the generation and fast delivery of financial report. The studies show that the output of own capitals, the profit margin, ROA will also be improved.

The ERP implementations have as a result the decrease of the salary expenses (direct salary expenses or indirect salary expenses), the decrease of the expenses with the acquisitions and the administrative expenses (Legare, 2002).

In a study from 2001, Poston and Grabski do not find a significant improvement of the revenues, but three years after the implementation of an ERP system, an improvement of the performance is ascertained, resulting from the decrease of the cost of goods sold. Furthermore, it is also ascertained a productivity growth (Poston and Grabski, 2001).

Hendricks finds an improved of the return of assets (ROA) for the ERP users (Hendricks *et al.*, 2007) and in a study from 2003, Hunton (Hunton *et al.*, 2003) finds an improvement of the ROA, ROI, ATO indicators for the companies who

implemented an ERP system, compared to those that did not implement such a system. In this study, there are reported results somehow similar to the ones obtained by Poston and Grabski (2001), meaning that there cannot be found an improvement of the financial performance immediately after the implementation of an ERP system, but by comparing the performance of the companies that adopted an ERP system with the performance of the companies that did not implemented one, it results that the financial performance of the latter decreases in time, and the performance of the companies that implemented an ERP system remains the same.

A study that follows the reaction of the capital market at the announcement of the implementation of an ERP system, demonstrates that the investors' reaction to those announcements is a positive one, in the sense of the increase of the shares price for those companies (Hayes *et al.*, 2001). Furthermore, the forecasts of the companies' revenues that announced their intention to implement an ERP system, were reviewed upwards, the Hunton's behaviour study revealing the fact that those announcements had a positive impact on the behaviour of the financial analysts (Hunton *et al.*, 2002). Therefore, those announcements are connected to upcoming presumed revenues and increase of the performance.

In the study carried out by Matolcsy *et al.* on a group of companies that adopted ERP systems versus companies that did not adopt ERP systems, for a period of time of two years after the system implementation, it is revealed an improvement of global liquidity and an improvement of the debts management for the companies that implemented an ERP system (Matolcsy *et al.*, 2005).

2.3. Adverse effects of ERP implementation on the performance

In order for the ERP implementations to have the expected effects, they are always accompanied by a redesign of the business process. An inefficient reconfiguration of the business process can be the cause of a loss of performance (Davenport, 2000).

Adverse effects can also be produced by eliminating the roles within the company, roles automated upon the implementation of an ERP system. The employees' redistribution to other processes can generate a productivity decrease (Arnold *et al.*, 2000).

The performance of a company can also be measured by the increase of the shares price in the stock exchange for listed companies. If in the study of Hayes (Hayes *et al.*, 2001) the market reaction is a positive one, there are also studies (Hendricks *et al.*, 2007) that show the fact that within a period of five years from the implementation of an ERP system, the performance of listed companies, measured through the shares price in the stock exchange, has no significant variation, produced by the implementations of ERP systems. Therefore, such investments have not always an impact on the investors' decision to buy shares.

In the study carried out in 2001 (Poston and Grabski, 2001), the authors do not find a significant improvement of the residual income (residual income = net operating income - imputed interest for cost of capital) or of the sales in none of the three years from the implementation of the ERP system.

3. ERP SYSTEMS AND THE PERFORMANCE OF THE COMPANIES- ROMANIAN COMPNAIES PERCEPTION

3.1. Tools and data collection

The data to be analysed were obtained using the questionnaire created using the Google docs platform (https://docs.google.com/forms/d/1C_Z3E4Eyw4UdG4zAtlbtzmT5oJeIxdgis8YXC8r-08A/edit#question=572259712&field=1234643115) and was distributed online (LinkedIn, e-mail, other social networks). A number of 446 respondents answered the questionnaire distributed online. I'll analyse the responses of only 435 respondents which are Romanian companies.

3.2. Data selection

The sample was selected by identifying Romanian companies that have or not adopted ERP following the completion of the questionnaire. A number of 12 questionnaires were completed for companies not based in Romania and were excluded from the study. Therefore, there are 436 eligible questionnaires for this study. The questionnaire included questions on respondents' perceptions of the possible effects of implementing an ERP.

3.3. Data analysis

For the data analysis, I proceeded to a qualitative analysis of the data. I analysed the answers of the respondents, Romanian companies, to the questions of the questionnaire (strong disagreement, disagreement, neutral, agreement, strong agreement).

About the statements regarding the company's performance obtained after the ERP implementation, I obtained the following results:

Hypothesis 1: The company / organization experienced an increase in sales revenues following implementation.

Most respondents answered this question with neutral (54.25%, respectively 236 answers out of 435) and only 2.99%, respectively 13 answers out of 435, answered with a strong agreement. More respondents (31.49%, respectively 290 answers out of 435) marked the answer disagreement and strongly disagreement than agreement and strong agreement (14.25%, respectively 62 answers out of 435). Therefore, I conclude that the perception of respondents is neutral to the influence of ERP implementation on sales revenue.

Hypothesis 2: ERP implementation facilitates profit maximization and therefore increases financial performance.

Most respondents answered this question with neutral (52.41%, respectively 228 answers out of 435) and only 4.14%, respectively 18 answers out of 435, answered with a strong agreement. More respondents (27.59%, respectively 120 answers out of 435) marked the answer strongly disagreement and disagreement than agreement and strong agreement (20.00%, respectively 87 answers out of 435). Therefore, I conclude that the perception of respondents is neutral to the influence of ERP implementation on profit maximization and increasing of financial performance.

Hypothesis 3: ERP implementation decreases the organization's expenses.

Most respondents answered this question with neutral (51.72%, respectively 225 answers out of 435) and only 4.14%, respectively 18 answers out of 435, answered with a strong agreement. More respondents (26.67%, respectively 116 answers out of 435) marked the answer disagreement and strongly disagreement than agreement and strong agreement (21.61%, respectively 94 answers out of 435). Therefore, I conclude that the respondents' perception is neutral to the influence of ERP implementation on the decrease of the organization's expenses.

Hypothesis 4: ERP implementation decreases administrative costs.

Most respondents answered this question with neutral (49.20%, respectively 214 answers out of 435) and 5.52%, respectively 24 answers out of 435, answered with strong agreement. More respondents (25.75%, respectively 112 answers out of 435) marked the strong disagreement and disagreement answer than those who marked the strong agreement and agreement answer (25.06%, respectively 109 answers out of 435). Therefore, I conclude that the perception of the respondents is neutral to the influence of ERP implementation on the decrease of administrative expenses.

Hypothesis 5: ERP implementation decreases salary expenses.

Most respondents answered this question with neutral (52.87%, respectively 230 answers out of 435) and 3.68%, respectively 16 answers out of 435, answered with strong agreement. More respondents (29.43%, respectively 128 answers out of 435) marked the disagreement and strong disagreement answer than those who marked the answer agreement and strong agreement (17.70%, respectively 77 answers out of 435). Therefore, I conclude that the respondents' perception is neutral to the influence of ERP implementation on the decrease of salary expenses.

Hypothesis 6: ERP implementation increases productivity.

Most respondents answered this question with neutral (51.95%, respectively 226 answers out of 435) and 6.44%, respectively 28 answers out of 435, answered with strong agreement. Fewer respondents (17.47%, respectively 76 responses out of 435) marked the strong disagreement and disagreement responses than those

who marked the strong agreement and agreement responses (30.57%, respectively 133 responses out of 435). Therefore, I conclude that the perception of respondents is neutral to the influence of ERP implementation on productivity growth.

Hypothesis 7: ERP implementation improves ROI (return on investment) indicator (the indicator is calculated as the ratio between net profit (total revenue - total costs) and total investment costs).

Most respondents answered this question with neutral (63.22%, respectively 275 answers out of 435) and 4.14%, respectively 18 answers out of 435, answered with strong agreement. Fewer respondents (17.70%, respectively 77 responses out of 435) marked the strong disagreement and disagreement response than those who scored the strong agreement and agreement (19.08%, respectively 83 responses out of 435). Therefore, I conclude that the respondents' perception is neutral to the influence of ERP implementation on ROI improvement.

Hypothesis 8: ERP implementation improves ROA (return on asset) indicator (the indicator is calculated as the ratio between a company's annual earnings (usually net profit) and total assets (fixed assets + current assets + upfront expenses)).

Most respondents answered neutral to this question (63.68%, respectively 277 answers out of 435) and 4.60%, respectively 20 answers out of 435, answered with strongly agreement. Fewer respondents (17.93%, respectively 78 responses out of 435) marked the strong disagreement and disagreement response than those who marked the strong agreement and agreement response (18.39%, respectively 80 responses out of 435). Therefore, I conclude that the respondents' perception is neutral to the influence of ERP implementation on ROA improvement.

About the statements regarding the unexpected / adverse effects of the ERP implementation, I obtained the following results:

Hypothesis 1: The expected benefits are not obtained after the implementation of ERP.

Most respondents answered this question with neutral (50.57%, respectively 220 answers out of 435) and 2.30%, respectively 10 answers out of 435, answered with strong agreement and 13.33% answered with strong disagreement, respectively 58 answers out of 435. Fewer respondents (6.90%, respectively 30 responses out of 435) scored the strong agreement and agreement than those who marked the strong disagreement and disagreement response (42.53%, respectively 185 responses out of 435). Therefore, I conclude that the perception of the respondents is neutral to the fact that the implementation of ERP does not obtain the expected benefits. However, more respondents marked the responses with disagreement than those who marked responses with agreement, which means that more respondents expect to obtain benefits after the ERP implementation.

Hypothesis 2: After the ERP implementation, the company's expenses increased.

Most respondents answered neutral to this question (53.56%, respectively 233 answers out of 435) and 1.38%, respectively 6 answers out of 435, answered with strong agreement and 7.13% answered with strong disagreement, respectively 31 answers out of 435. Fewer respondents (16.78%, respectively 73 answers out of 435) marked the answer agreement and strongly agreement than those who marked the answer disagreement and strongly disagreement 29.43%, respectively 128 answers out of 435). Therefore, I conclude that the perception of the respondents is neutral to the fact that after the implementation of ERP, the company's expenses increase. However, more respondents marked the answers with disagreement than those who marked the answers with agreement, which means that more respondents expect the ERP implementation to decrease the company's expenses.

Hypothesis 3: After the ERP implementation, the company's revenues decreased.

Most respondents answered neutral to this question (53.10%, respectively 231 answers out of 435) and 0.92%, respectively 4 answers out of 435, answered with strong agreement and 15.40% answered with strong disagreement, respectively 67 answers out of 435. Fewer respondents (2.30%, respectively 10 answers out of 435) marked the answer agreement and strongly agreement than those who marked the answer disagreement and strongly disagreement (44.37%, respectively 193 answers out of 435). Therefore, I conclude that the perception of the respondents is neutral to the fact that after the ERP implementation, the company's revenues decrease. However, more respondents marked the answers with disagreement than those who marked answers with agreement, which means that more respondents expect the ERP implementation to increase the company's revenues.

Hypothesis 4: After the ERP implementation, productivity decreased.

Most respondents answered neutral to this question (51.03%, respectively 222 answers out of 435), 0.92%, respectively 4 answers out of 435, answered with strong agreement and 17.70% answered with strong disagreement, respectively 77 answers out of 435. Fewer respondents (3.45%, respectively 15 answers out of 435) marked the strong agreement and agreement answer than those who marked the disagreement and strong disagreement answer 45.52%, respectively 198 answers out of 435). Therefore, I conclude that the perception of the respondents is neutral to the fact that after the implementation of ERP the productivity decreases. However, more respondents marked the answers with disagreement than those who marked answers with agreement, which means that more respondents expect that after the implementation of ERP the company's productivity will increase.

4. CONCLUSIONS

The improvement of ERP systems has been and it still is a preoccupation for the IT developers. The radical organizational changes could be helped by the use of some ERP systems (Legare, 2002). The existent literature has proven the positive effect the ERP systems produce on the performance of the companies.

The adverse effects are more related to the lack of short-time positive effects, this aspect being first of all caused by the non-alignment and missing perfect integration of the business with the implemented ERP system. The productivity decrease can be followed by its growth, in time, while the employees get familiar to the new roles (Arnold *et al.*, 2000).

Even if the analysed studies took into consideration periods of up to 3 years for the study of the ERP benefits after their implementation, for more consistency and relevance, the upcoming studies should include longer-term analyses, up to 5 years after the implementation, considering the forecasted efficiency for the ERP system from 4 to 5 years (Wah, 2000; Wortmann, 1998). This way, there could also be registered indirect benefits of the implementation of ERP system.

If in the study from 2001 (Hayes *et al.*, 2001), when those systems were not used by the companies on such a large scale, the investors' reaction at the announcements of the ERP implementations is a positive one, 7 years later (Hendricks *et al.*, 2007), the effect in the stock exchange is not a positive one, maybe also because of the fact that the use of ERP system within the company starts already to be an usual one, a "must have", especially within large companies.

I conclude as a general conclusion about the answers received from respondents regarding the company's performance obtained after the ERP implementation that these implementations do not positively or negatively influence any of the indicators in the respondents' perception. It can also be seen that the question of increasing productivity after the implementation of ERP has received more answers with Agreement and Strong Agreement than the other questions. Also, regarding the answers received from respondents about the unexpected / adverse effects of the ERP implementation, I conclude that in the respondents' perception, these implementations do not positively or negatively influence any of the mentioned indicators. It can also be seen that all the questions received more disagreement answers than agreement answers which reflects the fact that the perception of most respondents is that the ERP implementations do not have adverse effects.

Regarding the analysis of the answers to the questionnaire by the respondents, Romanian companies, a research direction is to correlate the information obtained with the financial results of the companies to conclude if the perception of the respondents (CEO, CFO, Administrators or equivalent) is confirmed by the real numbers and indicators.

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REPORTING INFORMATION ON CORRUPTION AT THE LEVEL OF ROMANIAN PUBLIC COMPANIES

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ABSTRACT

Worldwide, corruption stands for one extremely complex phenomenon that triggers some uncertain situations that should be brought to information users' knowledge and attention. Despite the fact that in recent years, anti-corruption legislation has well developed and one can actually see some progress having been made, Romania is still facing a high level of corruption. Both the private and the public systems are well involved in such phenomenon, which means that avoiding corruption actually requires some well-sustained efforts from both parties, as concerned. Thus, at the level of public interest entities, non-financial reporting has incurred such amendments aimed at providing for higher transparency in terms of supplying information on corruption and bribery. Including such facts in public entities' non-financial reports aims at supporting anti-corruption campaigns. Given the above-described circumstances, what is interesting is the extent as to which the non-financial reports of entities being listed on Bucharest Stock Exchange, as issued subsequent to the due enforcement of the new reporting requirements, include such information on corruption, thus one ensuring a high level of transparency. The present research has been based upon the due reports and non-financial statements of entities that are listed on Bucharest Stock Exchange on a regulated market, as related to years: 2017, 2018 and 2019, in view of duly identifying the degree of such entities' compliance with the required obligation to also include information on corruption in their published reports.

Keywords: corruption; non-financial reporting; information transparency; National Anti-Corruption Strategy; public entities.

JEL Classification: D04, O17, M40

1. INTRODUCTION

Corruption stands for that phenomenon having an impact on competition, lowering the performance level of economic entities, impeding economic development, and triggering unjustified costs. Maintaining one healthy business

environment requires due efforts on the part of both the public and the private sectors, to prevent corruption in all its forms (Transparency International, 2016a).

Given the recent top list drawn up Transparency International organization, as related to corruption levels, Romania holds the 70th position in the top of global governments, with 44 points scoring (Transparency International, 2019). At the same time, one recently conducted study results show that the Romanian business environment is perceived as highly corrupted, the level of corruption actually increasing during the last two years, and the most frequent of all corrupted practices having been identified, have been: bribe, fraud and nepotism (Krastev *et al.*, 2019).

Over the times, corruption has been deemed as one “widely spread issue in Romania”, which fact led to the existence of multiple attempts to prevent or even extinguish the same (European Commission, 2016). Starting with the actual effort in identifying the causes and going on to the drawing up of a series of measures, there have been lost of difficulties in terms of enforcing the laws, and one such impediment has been the political impact on the implementation of such laws regarding the existing phenomenon (Radu and Gyula, 2010). Most polls on the fields one deems as being the most corrupted shows that the top list of such fields includes the sanitary system, the Parliament, the Government, and local authorities. At the business environment level, corruption is deemed as an adverse factor, and in such case, public companies are trying to constantly conduct a relevant assessment which refers to risks from integrity and corruption perspective (OCDE, 2018).

Whereas the actual pursue and legal punishment of the corrupted are difficult, as well as expensive, while at the same time showing some uncertain results, there has been a greater focus on the drawing up and enforcing of some preventive measures for both the public and the private systems, since one finds such measures as capable of bringing better results (Batae and Feleagă, 2020).

In terms of the private field, in order to promote integrity and prove such an attitude of fighting corruption in Romania, in recent years one has duly amended the accounting regulations on the annual financial statements. By such amendments, public entities with more than 500 employees, have been required to submit a non-financial statement in the process. By one such statement, in addition to other information, that information regarding the entities 'attitude to corruption shall also be published and brought to users' knowledge.

Such amendment of the reporting standard has also been sustained by the enforcement of the National Anti-Corruption Strategy 2016 - 2020, which has been duly enacted by virtue of Government Decision no. 583/2016 and by which one has aimed at going on with the previous strategy (Government Decision no. 215/2012) as well as improving any matters that have failed to be efficient.

The potential impact of such presentation of information on corruption, on the communicational value as far as users are concerned, is represented by the promotion of one anti-corruption attitude, as well as the due acknowledgement and display of corruption incidents. In other words, investors are to be influenced

in their investment process, by the degree of corruption tolerance, as the public interest entities may show (Pirvan and Nişulescu, 2017). The target of supplying such information is represented by the promotion of one competitive business environment, that shows integrity and fairness, as well as diminishing any corruption possibilities, and the end goal is represented by the provision for transparency so as to upgrade the communicational value level.

To this end, the present study main goal is represented by the conducting of a review of the degree of compliance with the obligation to supply information on the corruption phenomenon, through the annual reports of entities that are listed on Bucharest Stock Exchange. The goal is to identify certain aspects that may be improved, since there has to be a clear description of the information and a much higher level of transparency, which shall contribute to corruption fighting and extinguishing.

The contribution brought by the present study is represented by the detailed analysis of the annual reports and, in particular, of the non-financial statements of public entities, as related to the period immediately following the obligation requirement. In addition to the introduction and conclusion sections, the present paper also includes other three sections, namely: an overview of specific literature, description of research methodology and issuing the research outcomes.

2. LITERATURE REVIEW

Specific literature defines “corruption as being that abuse of power that has been entrusted for the purpose of getting private benefits”, which means that it stands for a type of conduct that deviates from certain prescriptions in view of getting some personal or group-related benefits. Bribing, nepotism, using rewards for actually doing or not doing something, as well as any illegal, unfair use of public resources for private purposes are only a few of the behaviours that corruption integrates (Dimitrijevic *et al.*, 2015).

Corrupted behaviours are defined by Nye (1961) as such “activities that deviate from formal duties of a public office to the benefit of getting various private, pecuniary or government benefits, to be achieved by individuals or groups of such individuals”.

There are studies that show the facts that are favourable to creating the circumstances for unethical conducts, including for any corruptive deeds. The means by which corruption has an impact on resources allotment efficiency have been studied by Graeff and Svendsen (2013), who reached the conclusion that the business environment stands for a space which is favourable to corruption deeds. The models by which one may keep under control and manage the context triggering and facilitating the actual corruption may be more efficient since the cost is the one reflecting the corruption, just like an unpredictable tax creating uncertainty and which has an impact on economic performance levels. To this end, Klitgaard (1998) believes it is more useful for elements that are favourable to

corruption to be efficiently ruled out, rather than for one to only apply sanction measures for corruption deeds. Also, corruption risks management is an approach belonging to Diaconu (2012), who finds it positive for one to draw up measures aimed at preventing, or even eliminating the circumstances and factors that are enabling corruption deeds.

Although preventive measures are highly important and quite often the most efficient ones for eliminating corruption-related risks and opportunities, Radu and Gulya (2010) have found that in Romania, when it comes to fighting against corruption, special attention has been paid to applying sanctions under the law for any commitment of such deeds.

Nowadays, by a set of anti-corruption strategies, one highlights the huge efforts made for enhancing business environment integrity, by enforcing various preventive measures, such as: issuing integrity plans, substantiating a set of mechanisms aimed at protecting those promoting integrity, enforcing various mechanisms focusing on integrity incidents, as well as the due enlargement and enforcement of the ethical code.

At the domestic level, the National Anti-Corruption Strategy 2016-2020 stipulates on the principle of unrestricted access to public knowledge information, as well as the principle of decisional transparency, and also on the method as to how to approach the targets in terms of sanctioning the corruption deeds. The same is duly applied by both central and local public institutions, and by public interest entities. Given the major impact, corruption has on the economic environment, the National Anti-Corruption Strategy 2016-2020, duly corroborated with the regulations applied at the level of public entities provides for the security of one such framework that enables the creating of a positive culture favourable to business environment integrity.

Transparency International (2016b) claims that the development and introduction of various internal managerial control systems, of a set of methods for the transparentizing of organizations and the development of various internal mechanisms aimed at identifying the employees' and management's moral conduct, shall get to the reaching of one good performance level in terms of integrity and compliance management at the level of all public interest entities, as concerned. Given such circumstances, in the National Anti-Corruption Strategy 2016-2020 one draws the attention on the general target regarding the "enhancement of the degree of implementing the anti-corruption measures by approving the integrity and periodical self-assessment plan at the level of all central and local public institutions, including those under due subordination, coordination, under authority, as well as at the level of public enterprises, as concerned", namely the "enhancement of institutional integrity by including corruption prevention measures as mandatory items of managerial plans and their periodical assessment as part and parcel of administrative performance" (Government Decision no. 583/2016).

In 2016, during the Anticorruption Summit in London, Romania committed itself to meet a set of commitments, having as purpose the intensification of efforts in the field of fighting and preventing corruption in the public as well as in the private sector. From this particular perspective, one has proposed a set of integrity plans of a mandatory character for state enterprises. In terms of public interest entities, Order no. 1938 / 2016 claimed that entities having in average at least 500 employees shall submit, in addition to the annual financial statements, a non-financial report which shall include “information on at least the environmental facts, social and staff-related matters, the compliance with human rights, fighting corruption and bribery” (Public Finance Minister’s Order no. 1938/2016). At present, such report is also mandatory for private entities, since Public Finance Minister’s Order no. 3456/2018 has extended the scope of the obligation to submit the non-financial statement to several other categories of economic entities. As a result, starting with 2017 in terms of public entities and with 2019 in terms of private entities, that meet the number of employees – related criterion, there exists a due obligation to submit information on corruption (Public Finance Minister’s Order no. 3456/2018).

Public entities show a major interest for investors, who wish to get to know any and all information, and that is precisely why there should be an actual transparency in terms of reporting. Over the years, given a lack of transparency and the insufficiency of control systems, there have been many financial scandals (Roussy, 2013). Any entity’s entire personnel, especially the company’s management shall bring their contribution to the building up of one solid internal control system which shall enable the reaching of such entity’s goals and targets (Public Finance Minister’s Order no. 600/2018).

In 2018, OCDE conducted a study on government-controlled entities and it claims that 90 % of the latter carry out an assessment of risks regarding integrity and corruption. Also, the results being displayed have shown that companies assessing their risk on yearly basis, as compared to those that conduct any irregular or no such assessments, find that they have more efficient control and risks management systems and they show less compliance risks (OCDE, 2018).

Therefore, the due assessment and the display of aspects in terms of integrity and corruption are duly required and of quite a real interest for all categories of users, especially for fighting the phenomenon which proves to be omnipresent and erosive.

3. RESEARCH METHODOLOGY

3.1. Object of the study

The main objective of the present research is represented by the observation of how Romanian public entities have complied with the due regulations on corruption. Thus, one shall duly investigate the annual reports of entities that are

listed on the stock exchange, in view of checking if the latter have met the requirements regarding the supply of information on bribery and corruption. It is essential for one to depict facts on the development of anti-corruption policies and procedures, as well as the corruption incidents where public entities have been involved.

Any omission of such information on corruption, the existence of any charges regarding the failure to comply with anticorruption laws, or even the actual statement of the fact that the same have not been complied with stand for factors having impact on the actual results and they have an impact on transparency and, by default, on the qualitative value of such reporting.

3.2. Description of the population and sample under research

The population under research is represented by public interest entities that are listed on the Bucharest Stock Exchange. Of the three Bucharest Stock Exchange segments (Regulated Market, AeRO and SMT-International), our attention shall focus on the first such segment, since it is here where the biggest and most relevant Romanian companies are, as they also meet the criterion regarding the number of employees, as required by accounting regulations.

Consequently, the sample we have chosen shall include the overall companies that are listed on the regulated market, namely 83 such companies, of which one shall rule out 59 companies (the ones from the insurance, bank fields, as well as those failing to meet the criterion on the number of employees). In the end, the sample under research shall consist of 24 listed companies, which shall be studied during the period following the enactment of the Order no. 1938/2016. Whereas 2017 is the first year when the reporting on bribery and corruption has become mandatory, the period one has analyzed is 2017-2019.

3.3. Data collection

Annual reports, alongside non-financial statements, as belonging to the entities which are part of the selected sample, stand for the source of such data. In view of reaching the target of our research, one has used the qualitative research method regarding contents analysis, and the data have been manually collected.

One has focused on the entities' method of presenting the information regarding corruption and on their compliance with the obligation, as required. Also, the depiction of the drawing up of various anti-corruption procedures and policies shall show the entities' availability and willingness in terms of taking due measures in the process of becoming aware of corruption phenomenon omnipresence. Disclosure of corruption incidents and of any actions against the same shall reveal the entities' ability to be transparent while publishing the information duly required, while also playing the part of actually eliminating such phenomenon.

4. RESULTS AND DISCUSSIONS

The significant interest in non-financial reporting, by introducing the obligation to draw up a non-financial statement by entities that are listed on Bucharest Stock Exchange and which have more than 500 employees, has started at the end of 2016. Having reviewed the annual reports of entities that are listed on the Bucharest Stock Exchange, as issued in terms of the years 2017, 2018 and 2019, one has found that the same is more extended. In fact, one has noticed the increase of the companies' transparency level, and this is quite an important element, since there are active concerns regarding the sustainability field.

As related to the detailed description of information, we have selected 4 defining elements in terms of non-financial reporting on corruption, which we have followed in all the annual reports we have analyzed. The 4 elements refer to: the entity's taking part in the fight against corruption, the tolerance degree in terms of such existing phenomenon, any corruption incidents that they have been involved in and the anti-corruption policies and procedures they have adopted to this end. The due mentioning and description of such facts shall show the degree of how corruption-related information is disclosed, as such degree is displayed in every entity's report.

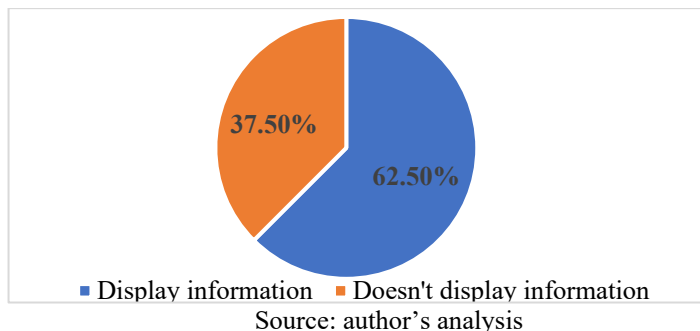


Figure 1. Companies' Status as related to Reporting on Corruption in 2017

Having reviewed the non-financial statements of the entities included in the sample and having tried to see if they display information on corruption and bribery, we have identified the fact that not all such companies fulfil their obligation required under the accounting regulations in force. The situation existing in 2017 is described in Figure 1, and the one relating to the years 2018 and 2019 is described in Figure 2.

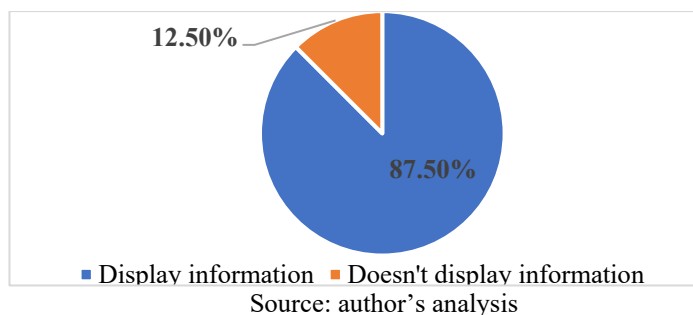


Figure 2. Companies' Status as related to Reporting on Corruption in 2018 and 2019

In 2017, of the 24 public interest entities, only 62.50% of the latter (namely 15 entities) have complied with the new provision, as required under the accounting regulations in force, by including information on corruption in their non-financial statements.

Both in 2018, as well as in 2019, the share of public interest companies fulfilling their obligation to display corruption and bribery – related information is the same, namely 87,50% (which means 21 entities). As compared to 2017, in 2018 and 2019 the number of companies that also display corruption-related information in their reports has increased, which shows an enhancement of the degree of such entities' compliance with the required regulations. Even if the share of companies that fail to show any information on corruption in their reporting is dropping, from 37.50 % to 12.50 %, things are not good, since given the obligation duly required, all companies should have complied with it and should have ensured the disclosure of such information in order to reach a high level of transparency.

The display of several facts on corruption phenomenon stands for the entities' willingness to disclose such information, as well as a high level of information quality given the existing transparency. Having conducted a more detailed analysis of the reports of those entities displaying information on corruption and having aimed at noticing which are the facts the entities displayed, we have identified the cases which are to be duly described below (Table 1).

Table 1. Number of companies displaying aspects on corruption

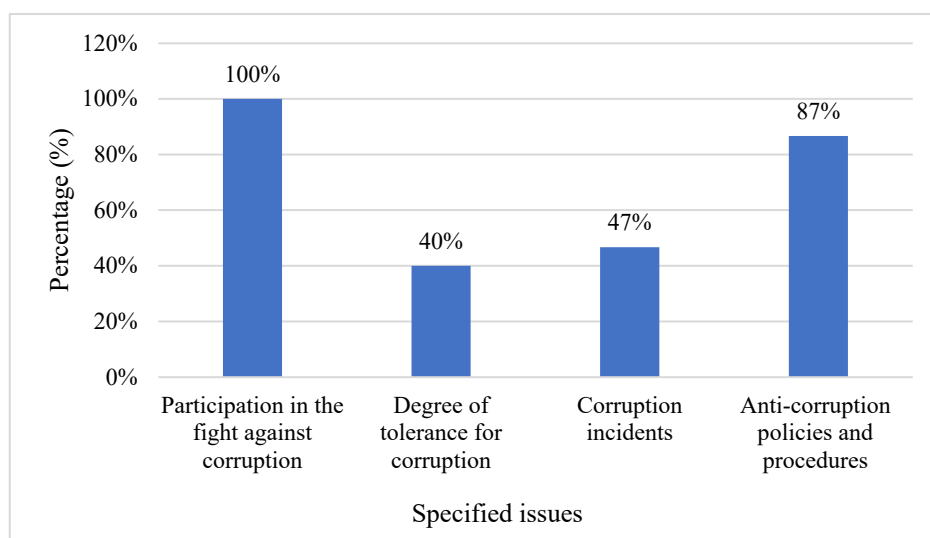
| Aspects stipulated by entities | Year | | |
|--------------------------------------------------------------|-----------|-----------|-----------|
| | 2017 | 2018 | 2019 |
| Taking part in fighting the corruption phenomenon | 15 | 20 | 20 |
| Anticorruption policies and procedures | 13 | 16 | 16 |
| Corruption incidents | 7 | 9 | 9 |
| Tolerance degree for corruption | 6 | 8 | 8 |
| Total entities that display a non-financial statement | 15 | 21 | 21 |
| Total entities that meet the presentation criterion | 24 | | |

Source: author's analysis

In Table no. 1 one may notice the frequency of aspects on corruption, as we have selected and followed in the entities' non-financial reports. Thus, we have noticed that the most frequent fact is the claiming that the entities take part in the fighting corruption process. This has been noticed in 15 non-financial reports in 2017 and in 20 such reports in the years 2018 and 2019. The next most frequently displayed fact regarding the corruption phenomenon refers to anticorruption policies and procedures, as adopted by the entities. In 2017, this fact has been identified in 13 non-financial reports, and in 2018 and 2019 in 16 such reports. Entities have been more reluctant in stating if there have been or not any corruption-related incidents, and such fact could not be found but in 7 non-financial reports in 2017 and in 9 such reports in the years 2018 and 2019. The less frequent aspect that is mentioned refers to the tolerance degree in terms of corruption, and this fact has been found in 6 non-financial reports in 2017 and in 8 such reports in 2018 and 2019. This shows that most entities prefer to only state the fact that they comply with corruption-related provisions, and that they take part in fighting the same, without however providing details as to their own actual situation.

With reference to the details mentioned in terms of the 4 aspects being stipulated, we shall further analyze the current ongoing situation.

In Figure 3 one may notice that in 2017, of the 15 companies submitting non-financial statements, only 40 % mention some aspects on the degree of tolerance to corruption, 47 % refer to corruption-related integrity incidents, 87 % have adopted anti-corruption policies and procedures and all entities state they strongly oppose corruption and that they bring their contribution to fighting the same.

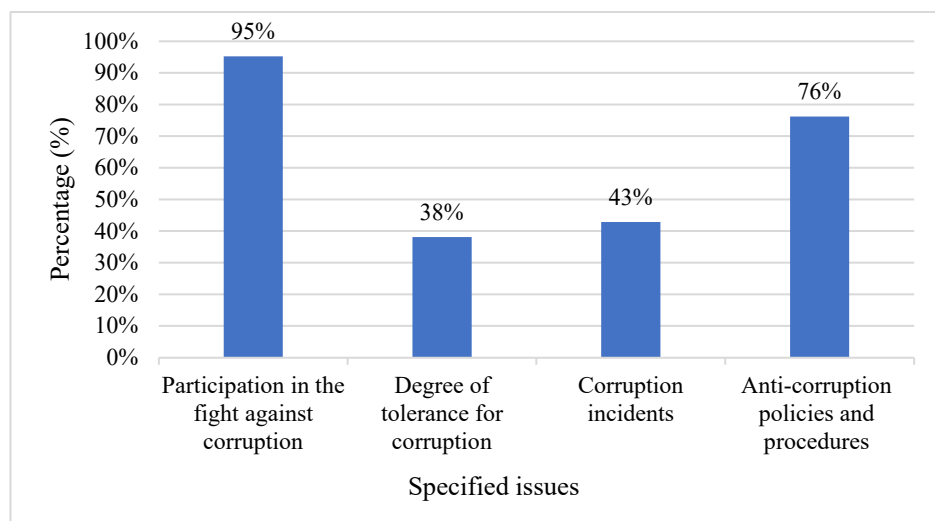


Source: author's analysis

Figure 3. Detailed status on corruption – related information in 2017

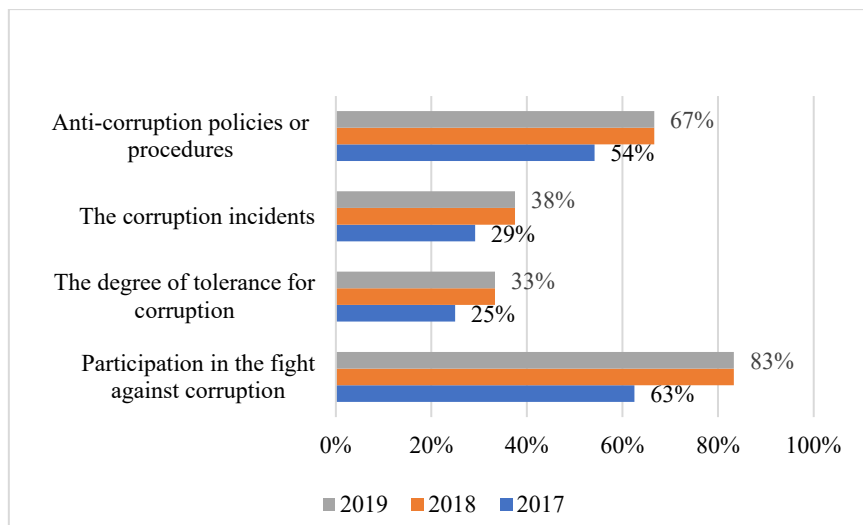
In the case of any and all entities that mention their degree of tolerance to corruption, the same is 0, while also stating their strong objection to corruption. Most entities report 0 integrity incidents, only one such company (Digi) discloses an incident that has been caused by three individuals holding high-rank management positions, who are charged with bribery and money laundry. About anti-corruption policies and procedures, the entities adopt such measures both at the employees' level, and at the level of management members. One strongly forbids any and all types of corruption deeds in exchange of any undue benefit and one lists a set of preventive measures, as well as proper sanctioning measures to this end. The entities' taking part in fighting the corruption phenomenon is achieved by both complying with the anti-corruption laws in force, and by conducting various internal controls in view of identifying any eventual breaches.

Having reviewed the non-financial statements in the following years as well, Figure 4 displays that the status is similar in 2018, as well as in 2019, and that of the 21 companies submitting such non-financial statements, only 38 % of them state something about their corruption tolerance degree, 43 % refer to corruption-related integrity incidents, 76% have adopted anti-corruption policies and procedures and around 95% mention the fact that they strongly oppose corruption and that they take part in fighting the same. The manner of presenting the issues under focus in the non-financial statements in the years 2018 and 2019 is identical to the one in 2017. In terms of corruption-related incidents, Digi company keeps on mentioning its incident started in 2017, which is still pending clarification, and the rest of the entities state they have had no such incident whatsoever.



Source: author's analysis

Figure 4. Detailed status on corruption-related information in 2018 and 2019



Source: author's analysis

Figure 5. Comparative analysis of corruption-related aspects

By comparing the three existing periods, one finds that if we relate to the overall number of 24 entities being under due obligation to submit information on corruption, one finds that the share of entities complying with such obligation is increasing in 2018 and 2019, as compared to 2017 (Figure 5). The increase of the share of contribution to fighting corruption from 63% to 83% acknowledges the companies' harmonization to the strategies and campaigns organized in view of duly preventing, fighting and eliminating corruption. The increase in the share of presentation of anticorruption policies and procedures from 54% to 67% proves that companies wish to involve more and more in drawing up and enforcing anticorruption measures that trigger positive results. One may also notice the upward trend of the capacity to state the tolerance degree in terms of corruption, from 25 % to 33 %, as well as the acknowledgement of corruption incidents, from 29 % to 38 %.

5. CONCLUSIONS

In recent years, Romania has had a high level of corruption, although one has attempted to enforce various measures in order to fight the same. One of such measures aims at public interest entities, having more than 500 employees and it refers to the fact that such entities must submit a non-financial statement, where they shall include information on corruption and bribery. As there is no unitary reporting framework in non-financial reporting, each entity shall select what information to submit, as it may find it fit to do so, without always ensuring a high

transparency level, or even by breaching upon certain obligations, as required under the applicable regulations in force.

In the present research, one has mainly attempted to identify if public interest entities meeting the criterion on the number of employees duly comply with the mention regarding corruption, as introduced by virtue of Order no. 1938/2016. Secondly, one has analyzed to what extent the non-financial reports of entities that are listed on Bucharest Stock Exchange, that have been drawn up following the enforcement of the new reporting requirements, include a set of aspects regarding the corruption phenomenon, in view of enhancing the transparency level.

One has studied 24 non-financial reports of the entities listed on a regulated market for each single year subject to such analysis, namely in terms of the period 2017-2019. One has proceeded with the enforcement of the qualitative analysis of data research method, namely the contents analysis, which has led to getting the described results.

The final situation shows us that not all entities comply with the obligation, as required, although from one period to the next the latter's number is increasing. The fact that entities do not stipulate any information on corruption cannot be justified by the fact that the latter have not faced any such corruption deed, since the new provision aims at supporting anti-corruption strategies and campaigns. Consequently, in order to give their assistance to the matter, all entities should provide general information regarding their attitude towards corruption.

In reference to those entities complying with the present provision, they tend to display facts on corruption in a different manner. Most of them do not provide details, instead they prefer supplying simple mentions, without particularizing the relevant information. This is not exactly positive since corruption is a factor having an impact on the market where entities conduct their business, and things may vary from one such market to another. Thus, although complying with the obligation, as required, these entities prefer having a partial reporting of the information on corruption. However, there are also entities that display several various information on corruption, which means they provide for one high level of transparency.

This distinct trend in terms of displaying the relevant information on corruption shows some freedom that entities have in terms of non-financial reporting, and also a difficulty that information users have to deal with, from this particular perspective. However, one should conduct a more thorough checking of these facts since public entities also stand for an element of interest in terms of supporting the anticorruption strategies.

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COST OPTIMISATION USING TARGET COSTING METHOD AT IASI MILITARY EMERGENCY CLINICAL HOSPITAL

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ABSTRACT

In the decision-making process the cost information system plays a key role in every organization. An important task of management is to ensure control over operations, processes, business sectors and, last but not least, costs. Although several control systems (production control, quality control, etc.) compete to achieve the objectives of an organization, the cost information system is important because it monitors the results of all the others. This article considers the implementation of target costing method for medical analysis in order to establish a fair price. Several financial indicators have been selected for defining a target price according to costs and estimated profit.

Keywords: cost calculation; target costing method; cost-profit correlation; military hospital.

JEL Classification: D24, I10, P46

1. INTRODUCTION

Management accounting is an information system that collects and processes information, in order to assess and manage the performance of the organization's activity (Čater and Čater, 2009). Competitiveness in the current economic

environment is a challenge for every field, because its tools are strongly influenced by contingency factors (historical, cultural, technological). Management accounting is an important part of the tools that ensure the performance management of an organization.

The manager expects from management accounting a permanent assistance, before, during and after the action, in order to be able to define objectives, to understand if the objectives are relevant and to measure the performance. The detailed analysis of the expenses, the calculation of the costs, the quantification of the losses, and the estimation of the efficiency of the submitted activity provide a solid basis for the financial control. Knowing the costs is a decisive factor in making decisions or planning future activities. Managers are concerned about the costs that will arise in the future, their level being the basis of organizational policies (Alsharari, 2019).

Cost-oriented calculation of control and decision-making becomes one of the basic components of the organization's profitable management mechanism. Also, as an informational tool, the calculation "produces" and provides information on costs and profits and as a management tool is a decision technique on maximizing profitability (Bhimani and Bhimani, 2003).

Costing should not be seen as an end in itself, but as an important source of information, having a decisive role in ensuring a modern management of the organization. Thus, within the economic information system, a central place is occupied by the cost information system.

Depending on the methods used, the cost calculation is able to meet these requirements and provide information on past, current and future costs.

2. TARGET COSTING

2.1. Research purpose

We approached this topic in order to analyse the possibility of applying modern methods of cost calculation in order to establish the prices of medical tests, performed in the medical analysis laboratory of the Iasi Military Emergency Clinical Hospital. New trends in the use of advanced technologies impose the need to change the vision of management accounting and its orientation towards supporting managerial decisions.

The purpose of the research is to improve the methodology for calculating the costs of medical tests performed at the Iasi Military Emergency Clinical Hospital, by implementing modern calculation methods.

In this sense, the scientific approach was not limited only to theoretical aspects, but went further with verifying the degree to which these methods can be applied in the studied sector, highlighting the advantages, disadvantages of using classical methods compared to modern ones.

To achieve the purpose of the research, we considered the following:

1. Knowledge of the nature of the information provided by the cost calculation;
2. Substantiation of managerial decisions based on information on costs;
3. The proposal to implement the Target Costing method, aiming at maximizing the profit.

2.2. Research methodology

The research was conducted based on the knowledge acquired as a result of studying the literature and practical experiences in the medical field, using three types of qualitative research, as follows: theorizing, testing and precision.

The paper involved the analysis of the literature, presentation and discussion of the current state of knowledge to understand and explain existing theories, phenomena, and notions, respectively to develop new research, theories, notions, methods and techniques specific to management accounting.

The development of a qualitative research involved the revision of the theoretical basis of the investigated topic, respectively the practical study of the existing behaviour and methods within the profile organizations in Romania.

Qualitative researches are those that allow outlining the main aspects of the problem or topic and diagnosing the situation, identifying hypotheses for future descriptive research. Instead, quantitative research has the role of defining, characterizing and quantifying the relevant aspects identified using qualitative methods, they are used to quantify certain phenomena, to establish statistical data, respectively to verify and test existing or developed theories using specific methods.

Thus, starting from the specifics and features of the research field, the present scientific approach falls into the category of qualitative research combined, at the same time, with quantitative elements.

2.3. Applying Target Costing at Iasi Military Emergency Clinical Hospital

The Target-Costing calculation method represents a formalized approach oriented towards the functional analysis of the value-price-benefit-cost ratio, analysed as a unitary and closed concept of cost management; is characterized by estimating values as functions, selling prices and full costs (Morse and Davis, 2000).

Such management emphasizes the development / design phase of the product / service, is based on and uses market price information and starts from market-oriented cost information; the basis for evaluating the functions of the product / services is the full costs.

Target costs are based on the rule that the market dictates selling prices and not the costs of organizations (Atkinson *et al.*, 1997).

So, in order to build profitability, one must go from price to cost, given that, from the selling price, the desired margin must be cut, in order to reduce a target cost. Because the market is not interested in the structure of costs in their fixed

and variable part, or in individual and common costs, it is necessary to cover in the long run all the costs of the organization. Consequently, the selling prices of the products / services must ensure full cost coverage and a share of profit.

For the purposes of the above requirements, the general equation of the target cost is:

$$\text{Imposed Sales Price} - \text{Desired Margin} = \text{Full Target Cost} \quad (1)$$

The objective of the Target-Costing method was formulated as follows: "improving the situation of the results related to the product / service by reducing the standard costs in the direction of target costs in line with the competitive situation".

In order to implement the cost calculation method - Target Costing - within the medical analysis laboratory of the Iasi Military Emergency Clinical Hospital, the following were established:

1. The ratio in which the common part of inductors is imputed is 1/7 for each analysis;
2. There are no products / materials in stock either at the beginning or at the end of the management period.

The hospital management focuses on establishing medical analysis batteries in order to reach an estimated cost as close as possible to the target cost (see Table 1 in Appendixes).

Considering the need to implement the method of calculating Target Costing costs, as seen in Table 1, a series of economic-financial indicators were established, as follows:

- The average target price for each analysis;
- Target profit;
- Target cost;
- Estimated cost of medical analyses.

Under the conditions of a target price imposed by free competition on the market, the hospital must reach a target profit which is that profit that must be obtained by the hospital in order to cover the expenses.

The target cost is equal to the difference between the target price and the target profit, and the estimated cost is equal to the sum of the indirect costs and the acquisition cost of raw materials and consumables.

Furthermore, we allocated the costs on the activity as a whole, the data being presented in Table 1 and 2 in the Appendixes. Based on the data from Table 1 and 2, the estimated cost was calculated according to Table 3 - Calculation of the estimated cost (see the Appendixes).

Thus, we determined that the estimated profit is lower than the target profit, we proceed to analyse how both direct and indirect expenditures were made, as well as the economy and the opportunity to distribute them by activities and cost drivers.

The first step is to identify the nature of the costs for each battery of analyses performed, in order to establish the allocated indirect costs. We proceeded to establish the cost poles, delimit and identify the indirect costs related to them, activities and costs for each activity and finally the volume of cost inducers, sized according to the conditions of analysis (Table 2).

In Table 3 it is observed that the data obtained for the estimated costs related to the analyses performed are identical to those initially presented in Table 1, the estimated cost and the estimated profit have values very close to the target cost and the target profit.

The process of reducing the estimated cost, until reaching the target cost, goes through a succession of stages; In this sense, a working group is formed in the hospital, which deals with cost reduction, so raw materials and consumables are purchased at a lower price, the activities generating additional costs are eliminated, the structural resizing of human resources is analysed in the sections directly involved in the activity under analysis.

Another stage is that in which the team of specialists analysed the characteristics of the medical equipment involved in the process of analysing the samples (power, energy consumption, weight, wear and noise). Dialogue with beneficiaries identified situations in which a change in these characteristics increases (or decreases) the cost more (or less) than the increase (or decrease) in the price that the beneficiary is willing to pay.

Together with the suppliers, the management adopts a JIT supply system and reorganizes the activity of the medical analysis laboratory, moving from batch orientation to a continuous flow vision. These changes were aimed at eliminating non-value-added costs and improving value-added activities.

3. CONCLUSIONS

Managers must make the appropriate decision and apply the calculation method that is specific to the organization, but must also take into account the specific field of activity, a strategic area where the security given by the quality of services is more important than the profit obtained.

Given the current economic environment, hospitals as public institutions financed entirely from their own revenues, must adopt a series of policies on the activity of calculating the costs of services provided, as follows:

- The volume of services must be based on the demand for medical services, the profitability is determined by the degree of patient satisfaction;
- Organization management must focus on the "key" elements in making a profit, reducing inventory and response time to customer requests;
- Total elimination of waste from all stages of the activity;
- Maintaining a very high level of service quality, the quality of services is given by the raw materials used as well as by the on going process inspection activities in order to detect and eliminate possible deviations;

- The continuous improvement of the workforce must be encouraged, the cultivation of the correctness of the employees; they are considered part of a team;
- Given that the new economic environment has significantly reduced the number of direct working hours and direct labour costs, which are key indicators in setting costs, it is necessary to use different procedures for allocating indirect costs; traditional costing methods are no longer an alternative.

Target-Costing is part of a strategic managerial approach to products/services, in which the cost bearer is analysed throughout its life cycle and especially in its design phase.

The importance of the Target Costing model is that it focuses on the stage of the process. Thus, most costs are "blocked" or encountered in the first part of the process of execution of the activity. Once the "sample taken" is launched, significant cost reductions are much more difficult to achieve, although some of them are possible (for example, through the effects of learning over time).

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APPENDIXES

Table 1. Calculation elements

| Criterion Number | Explanations | 1.25 dihydroxy vitamin D3 | 17 Ketosteroids | Ac. anti beta-2 glycoprotein 1 IgM | Ac. anti Shigella dysenteria | Hypercholesterolemia, APOB-100 (APOB) | Rett syndrome (MECP2) stage 1 | Thrombosis, Factor V-Cambridge (F5) |
|------------------|-------------------------------------------|---------------------------|-----------------|------------------------------------|------------------------------|---------------------------------------|-------------------------------|-------------------------------------|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | Estimated number of tests to be performed | 1,500 | 1,200 | 1,000 | 2,000 | 550 | 318 | 288 |
| 2 | Average target price | 25 | 40 | 65 | 52 | 75 | 120 | 145 |
| 3 | Target profit | 5 | 7 | 10 | 9 | 15 | 20 | 35 |
| 4 | Target cost | 20 | 33 | 55 | 43 | 60 | 100 | 110 |
| 5 | The cost of purchasing raw materials | 5 | 8 | 20 | 12 | 25 | 35 | 36 |
| 6 | The cost of purchasing consumables | 5 | 10 | 15 | 10 | 15 | 25 | 29 |
| 7 | Indirect expences | 10 | 15 | 20 | 21 | 20 | 40 | 45 |
| 8 | Estimated cost | 20 | 33 | 55 | 43 | 60 | 100 | 110 |

Source: authors' own calculations; the data are taken from www.smuis.ro

Table 2. The cost and volume of inductors required for indirect costs

| Activities | Inductor | Cost of inductors | Volume of inductors | | | | | | |
|-------------------------------------|-----------------------------------|-------------------|---------------------------|-----------------|------------------------------------|------------------------------|---------------------------------------|-------------------------------|-------------------------------------|
| | | | 1.25 dihydroxy vitamin D3 | 17 Ketosteroids | Ac. anti beta-2 glycoprotein 1 IgM | Ac. anti Shigella dysenteria | Hypercholesterolemia, APOB-100 (APOB) | Rett syndrome (MECP2) stage 1 | Thrombosis, Factor V-Cambridge (F5) |
| Survey of suppliers | Numbers of suppliers | 62 | 3 | 3 | 3 | 5 | 3 | 3 | 3 |
| Orders of raw materials | Number of orders | 219.00 | 3 | 3 | 3 | 5 | 3 | 3 | 3 |
| Inventory management | Number of raw material references | 85.44 | 3 | 3 | 3 | 5 | 3 | 3 | 3 |
| Preparation and launch in execution | Number of lots | 420.00 | 3 | 3 | 3 | 5 | 3 | 3 | 3 |
| Execution of analyses | Direct labour hours | 142.84 | 115 | 190 | 300 | 490 | 115 | 115 | 115 |
| Product marketing (analyses) | Number of products | 2.99 | 1,500.00 | 1,200.00 | 1,000.00 | 2,000.00 | 550.00 | 318.00 | 288.00 |
| Administration and financial | Added cost | 0.05 | X | X | X | X | X | X | X |

Source: authors' own calculations; the data are taken from www.smu.is.ro

Table 3. Calculation of the estimated cost

| Criterion Number | Explanations | 1,25 dihidroxi vitamina D3 | 17-Cetosteroizi | Ac. anti beta-2 glicoproteina 1 IgM | Ac. anti Shigella dysenteria | Hipercolesterolemie, APOB-100 (APOB) | Sindrom Rett (MECP2) stadiu 1 | Tromboza, Factor V-Cambridge (F5) |
|------------------|-------------------------------------------------------------------|-------------------------------|------------------|----------------------------------------|---------------------------------|-----------------------------------------|----------------------------------|--------------------------------------|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | Sales volume | 1,500.00 | 1,200.00 | 1,000.00 | 2,000.00 | 550.00 | 318.00 | 288.00 |
| 2 | The target price | 25 | 40 | 65 | 52 | 75 | 120 | 145 |
| 3 | Expenditure on raw materials | 5 | 8 | 20 | 12 | 25 | 35 | 36 |
| 4 | Expenditures on consumables | 5 | 10 | 15 | 10 | 15 | 25 | 29 |
| 5 | Indirect expenses determined by: | 29,930.76 | 39,751.73 | 54,888.56 | 86,568.46 | 32,930.42 | 31,736.74 | 31,647.04 |
| | Study of suppliers | 186.00 | 186.00 | 186.00 | 310.00 | 186.00 | 186.00 | 186.00 |
| | Raw material orders | 657.00 | 657.00 | 657.00 | 1,095.00 | 657.00 | 657.00 | 657.00 |
| | Stock management | 256.32 | 256.32 | 256.32 | 427.20 | 256.32 | 256.32 | 256.32 |
| | Preparation and launch in manufacturing | 1,260.00 | 1,260.00 | 1,260.00 | 2,100.00 | 1,260.00 | 1,260.00 | 1,260.00 |
| | Manufacture of products | 16,426.60 | 27,139.60 | 42,852.00 | 69,991.60 | 16,426.60 | 16,426.60 | 16,426.60 |
| | Product marketing | 4,485.00 | 3,588.00 | 2,990.00 | 5,980.00 | 1,644.50 | 950.82 | 861.12 |
| | Administration and finance | 6,659.84 | 6,664.81 | 6,687.24 | 6,664.66 | 12,500.00 | 12,000.00 | 12,000.00 |
| 6 | Estimated total cost | 20 | 33 | 55 | 43 | 60 | 100 | 110 |
| 7 | Estimated profit / loss | 5 | 7 | 10 | 9 | 15 | 20 | 35 |
| 8 | Target profit | 5 | 7 | 10 | 9 | 15 | 20 | 35 |
| 9 | The difference between the estimated profit and the target profit | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | Target cost | 20 | 33 | 55 | 43 | 60 | 100 | 110 |

Source: authors' own calculations; the data are taken from www.smuis.ro

FORMATION OF INFORMATION ENVIRONMENT AND DEVELOPMENT OF THE SERVICE E-GOVERNMENT

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ABSTRACT

The effectiveness of the formation and development of the information technology sphere is largely determined by the need for its practical use. An important component of the application of information technologies at the regional level is the communication of public authorities on data exchange with other institutions, citizens and businesses. Their specificity is determined by the regulations used by the authorities. The study shows that the creation of special information networks is a complex problem, the solution of which is based on a combination of technical resources and the development of PR communications.

Keywords: information environment; e-government; communications of public administration bodies.

JEL Classification: H19, H57, H76, O38

1. INTRODUCTION

The development of the e-government system, the creation of administrative service centers and the widespread introduction of electronic document management puts on the agenda the issue of creating an information environment (hereinafter - IE) at the regional level. It becomes necessary not only to determine, but also to justify the choice of methods by which public administration bodies (hereinafter - PA) will communicate and exchange data with the public, business and other structures.

In order to develop and increase the types of communication with the community, in addition to the creation of e-government services, the authorities should start paying more attention to such components of IE as institutional interaction and communication between government and society.

The communication ability of the PA bodies is realized by sending a message, which should be received by the recipient and which can then follow him. The list of types of messages related to public communication between the bodies of PA and society may include:

- information on public services;
- messages for information;
- promotion of services for the public;
- communication to discuss projects and laws for the community, as well as promoting the development of other forms of information environment.

Normal communication of public institutions occurs in the context of feedback, when the message from the public institution comes to the external environment or an individual citizen. A prerequisite for this is that communications perform three main functions: information, persuasion and reminder (Tascu and Constantin, 2015; Cetină, 2009). To do this, the PA bodies must create an IE that will provide the opportunity for interactive participation of citizens in the decision-making process, receiving public services and feedback in the communication process (Torres, *et al.*, 2005; SIGMA, 1996).

An important role in the formation of IE of the required level is played by the ability of all institutions involved in the communication process. This ability to communicate is usually defined by concepts such as electronic readiness. Its use allows to establish to what extent the existing prerequisites of IE for the implementation of e-government and communication services meet the requirements. But apart from the possible options, e-readiness should also be based on such a common factor as e-engagement. As a result, it will determine the existing level of electronic readiness.

The issue of providing IE with a level sufficient for communications of PA bodies is a mandatory component of a number of public management models. Communications, which are designed to ensure communication in the field of PA become the main tool for building relationships with the audience and institutions (Dagenais, 1999). As a strategic tool of public relations, communication is present in all activities of institutional communication (Ranta, 2011). They are aimed at solving current tasks establishing communication with the target audience and the media (Lamizet and Silem, 1997).

It should be noted that ignoring the problem of communication can threaten the public interest and will hamper the implementation of PR-strategies of PU bodies (SIGMA, 1996). Donald F. Kettl identified certain features of communication efficiency that are part of most reforms in the PA system (Kettl, 2000):

- efficiency. Improving the quality and quantity of public services while reducing the cost of providing them;
- marketing. Provisions in the basis of local development and the system of public administration of market principles;
- acceptance as the main task for the activities of public authorities to provide public services.

When considering the creation of IE, necessary to ensure communication between authorities, it should be noted such a concept as "institutional communication". Usually it is proposed to understand the unity of institutions (public or private) present in IE. The goal of activity and productivity is a must (Daniel, 1993). In this context, the possibility of communication in IE institutions becomes an effective tool used by public institutions to create an appropriate public image and the formation of favorable behavior of people in relation to the services provided by the government services provided by the authority (Rogojanu *et al.*, 2004).

The level of communication of the PA bodies in the IE is determined not only by the level of development of the management system itself, but also by the public field in which public communication in general is carried out. The goal here should be to purposefully establish public relations (Miege, 2000; SIGMA, 1996).

Modern public communication in IE at the national and regional levels is based on three communication cores: administration (PA bodies), media and the public. Using public communication strategies, PA bodies should find out the public's choice and shape their public image. To this end, the PU bodies, using the available IE capabilities, identify and satisfy the public interest on such topics as health care, public safety, and the environment. In general, this suggests that they use such forms of communication as social or behavioral (Rieffel, 2001).

Thus, certain forms of local communication in the IE can be considered as a category of public communication. This applies to PA bodies and state organizations that need to promote their initiatives, achievements and projects in

the eyes of the local community. This will allow them to create a stronger sense of belonging and be recognized by the local community (Rieffel, 2001).

2. METHODS

The key factor that determines the possibility and directions of implementation of e-readiness of public authorities in communication in IE is their motivation to use e-government services. To do this, they must introduce social communication technologies, the components of which are:

- motivational (motives that motivate the authorities to use information technology);
- cognitive (availability of specific professional skills necessary for the implementation of public administration functions).

Their research is a prerequisite for the introduction of any e-government services in IE. But it should be noted that the introduction of communication technologies and e-government services in the practice of PA bodies is largely constrained by the following factors:

- confusion of officials before the ever-increasing flow of information;
- lack of practical information management skills in managing information flows;
- uncertainty of socio-psychological features of communication of officials of public authorities with virtual communities.

Thus, conducting a study to determine the level of electronic readiness of the PA to use the tools of modern communications is relevant and appropriate. The basis for building a methodology for such a study can be used:

- results of comparative analysis of known approaches and methods of assessing the state of IE infrastructure
- electronic readiness of PA bodies to use e-government services, with subsequent transfer of all forms of communications to the virtual environment.

Given the above, the purpose of the study is to identify common factors that are critical for assessing the ability of PA bodies to transfer communications with society in the IE.

3. COMMUNICATION OF PUBLIC ADMINISTRATION BODIES IN THE FIELD OF INFORMATION ENVIRONMENT

Summarizing the above, we can conclude that the current work of the PA on the organization of virtual communications in the field of IE should be based on knowledge of the laws according to which citizens (consumers of services) form their attitude to them. This approach allows government officials to purposefully form a favorable position of the consumer of services (buyer) in relation to this "product" on the basis of actual knowledge of the criteria for assessing the current level of IE and e-readiness in the region. In other words, based on factual

information about the real needs and requirements of the recipient of services, the existing level of motivation of officials to use e-government services makes it possible to determine the strategy for implementing the components of virtual communications. Such a strategy will meet the real prerequisites and needs for communication with society.

Particular attention should be paid to the task of establishing public relations, which is a mandatory element of PR-activities of the bodies of PA and contributes to the solution of such issues as (Thomlison, 2000):

- discussion when PR activities aim to present the results of specific actions and goals, provide information about them and determine how they affect the audience and get the necessary response from it;
- planning the communication process, because the resources of any institution are limited by both human and financial, as well as in terms of equipment and time;
- productivity and efficiency of the PR team, when the results of communications are directly related to the productivity of the PA;
- establishing a process of two-way communication, which will be based on PR information from the environment in which the state institution is located;
- public interest, motivation of PR-activities based on meeting the needs of the audience, because the higher the level of decision-making on PR, the higher their effectiveness.

When establishing a process of two-way communication in IE, two levels of communication should be considered (Newsom *et al.*, 2003):

- communication within the PA body;
- communication with the local community, which are the first consumers of e-government services and other institutions, including the media.

An important component of the development of communications is communication within or between the bodies of the PA. The study further proposes to consider the information flows that are formed in the context of specific features that are characteristic of the environment of public institutions (Wilcox *et.al*, 1992):

- discussion, including information, influence and response;
- planning when the resources of any institutions are limited;
- establishing two-way communication based on the collection of information from the environment in which the institution operates, sending messages and tracking feedback;
- taking into account the level of public interest, which is the main purpose of PR technologies to meet the needs of the audience;
- formation of the necessary management structure, because the effectiveness of PR activities depends on the quality of management of the PA body.

In the work of the body of the PA in the IE can be a useful tool to use a system model of public relations, which, analyzing the process of communication, you can identify and organize its components.

In general, we can focus on three main elements of the PR communication process in IP: the structure of PR, communication strategy and PR-process. Thus, the very structure of PR in IP should include communication channels and groups of individual official institutions or institutions that are involved in relations with citizens and society.

Therefore, the relevant study of the communication process in the IP should begin with a consideration of how the PA bodies organize the communication process itself, including the provision of administrative services. The next step may be to consider the motivation and potential of PA bodies to ensure the development of virtual communications.

The creation of communications and e-government services is always based on appropriate regulations. They determine the level of accessibility and decision-making procedure when communicating or applying to the executive authorities using e-government services.

Thus, the study of the level of IP and assessment of the state of electronic readiness of the PA should answer the following questions:

- determining the mechanism for assessing the level of communication environment by consumers of information services and the possibility of its improvement, for example, through the further introduction of e-government services;
- how the development and implementation of a communication development strategy will contribute to the introduction of an effective policy of communication between the PU bodies and the local community;
- how to assess the state and prospects of development of communications and e-government in the IP of the region;
- determination of regularities according to which the consumer of information and public services forms the relation to activity of officials of local bodies of PA.

To get answers to these questions, first of all it is necessary to define and substantiate the list of indicators, which will be used to assess the current state and trends in the development of regional IE. The proposed indicators should be considered simultaneously as a component of the management of the existing e-government system. To do this, in the study of the proposed indicators should take into account the data that will characterize the level of electronic readiness of the PA to ensure the development of virtual communications.

An important factor to consider when determining the possibility of providing administrative services is the assessment of the compliance of the existing IP infrastructure with the technical requirements of e-government

services. The results of such a study will determine the level of electronic readiness of the PA.

When defining methods for assessing the level of electronic readiness in the first place should give a definition of this concept. The study, in determining the level of e-readiness, it is proposed to proceed from the extent to which society (local community, business or government) is willing to move to activities based on virtual communications. An indicator that can determine this is the level of electronic involvement of local society.

Electronic readiness of local authorities, businesses and citizens to use the components of virtual communications and e-government services is a key condition for the effective implementation of information technology in the field of PA. An additional success factor is the determination of a sufficient ratio of resources and technical support, on the one hand, and the desire, motivation and professional training of decision-makers, on the other.

The results of a review of a number of studies to assess the level of e-readiness show that they are based on an approach based on statistical analysis of indicators that determine the level of IE development in which e-government services are located. Such indicators are defined as e-indicators. But this approach does not take into account a number of qualitative characteristics that will characterize the attitude of consumers to receive electronic services and virtual communication in IE.

Doubts are also caused and the possible combinations so numerous quantitative indicators will unambiguously represent the level evaluate electronic readiness and the ability of PA bodies to provide administrative services. But the most important thing is that received receive using the classical method, the results of statistical evaluation of e-indicators (e-readiness rating), does not allow ability determine the main directions directions improvement improvement level of administrative services in the region. The use of e-indicators does not allow to establish because which criteria are used by consumers when assessing the availability of e-government services.

Given the above, the study proposes to consider the approach to the evaluation of e-government services, which will be based on the analysis of consumer behavior of electronic services. Its application will allow, without excluding the possibility of using methods of statistical evaluation of e-indicators, to supplement them with the results of qualitative analysis.

The theoretical basis of the proposed method is the theory of purchasing behavior, according to which the problem of implementing e-government services is considered in terms of providing PA bodies with demand for this product, services and more. From this point of view, the administrative service or the possibility of virtual communication in the IP is considered as a "product" that is developed and offered by the "manufacturer" - the bodies of the PA.

Thus, we can conclude that conclusion that the current work of local authorities PA should be based on knowledge of the laws according to which the recipient of services forms its attitude to their activities of authorities and opportunities for communication in the IP. In contrast to the methods of statistical evaluation of e-indicators, this approach allows PA bodies ("manufacturer") on the basis of actual knowledge of the criteria for assessing e-readiness in the region ("product") purposefully targeted to form a favorable position of the recipient of services ("buyer") in relation to this "product". In other words, guided by factual information about real needs and the requirements of the recipient of services, to determine a strategy for the implementation of virtual communications and e-government

An additional tool for managing information flows in the IE are indicators for assessing its status, which can also be used to compare different factors of communications and e-government services. Composite ICT indices (e-indexes) based on sets of ICT indicators are usually used as an integrated characteristic of the level of development of IE or its structural elements (Insight Report, 2015). Their choice and method of calculating the e-index largely depends on the chosen priorities. The set of e-indicators determined in the course of research is structured according to the accepted model of IE (United Nations Economic Commission for Africa, 2014). In this case, each element of the structure will correspond to its component index / sub-index, which allows analysis and monitoring of the situation in the relevant area of IE.

Based on the specific purpose of the study, which is to assess the electronic readiness of PU bodies to use virtual communication tools and e-government services, the paper proposes to take as a basis the concept of the Digital Capacity Index (hereinafter - ICS). ICS is a set of e-indicators that are proposed to be considered (Report of the Partnership on Measuring ICT, 2020; United Nations Economic Commission for Africa, 2014). Its peculiarity is that the ICS involves the use of a set of internationally agreed indicators. ICS has three components: capacity, infrastructure and usage, which in turn consist of a set of e-indicators. This technique allows the assessment of different categories of indicators of the state of IP, the list of which includes :

- existence and availability of the regional Internet;
- speed and quality of information transfer during Internet access;
- the current level of use of e-government services in the bodies of PA, business and local citizens;
- compliance with modern requirements of equipment and software used to provide e-government services;
- the level of professional training of PA officials responsible for IP support;
- possibility of remote access to the local society to the existing services in the IS;
- focused content of information resources.

The considered technique can be supplemented by results of expert interrogation. The results of such a survey will form an informal vision of the possibility of solving the problem of implementing e-government services in the practice of interaction of officials with business and citizens, non-governmental organizations, etc.

4. DATA. ASSESSMENT OF THE LEVEL OF DEVELOPMENT OF THE INFORMATION ENVIRONMENT ON THE EXAMPLE OF THE SOUTH OF UKRAINE

The methodology of determining and calculating the indicators of the information society can be based on the methods of marketing communications (Ivanov, 2012; Popescu, 2007).

Taking into account the known approaches, to consider the issue of studying the level of development of the information society, it is proposed to consider the results of the assessment of information development for the south of Ukraine.

The regional development of IE is largely determined by the level of information development at the national level. Unfortunately, the corresponding figures have deteriorated significantly in recent years, see Table 1

Table 1. Ukraine. UN e-participation index

| Indicator | 2016 | 2018 |
|------------------|-------------|-------------|
| E-information | 76.5 | 63.33 |
| E-consultations | 84.2 | 65.22 |
| E-attraction | 42.9 | 81.82 |
| Rating | 32 | 75 |

Source: own representation

A possible reason for this situation could be:

- ineffective government policy;
- inconsistency of the level of development of information technologies at the regional level with modern requirements;
- society's unwillingness to use information technology.

The main emphasis in the work is made on the study of the regional level. The obtained data allow to draw certain conclusions about the electronic readiness of officials of executive bodies to switch to the principles of e-government and the readiness of societies to use them when providing administrative services.

Relevant data are given in the Appendixes.

Each of these areas of assessment can be represented by appropriate indicators.

The generalization of the obtained data will allow to carry out both quantitative and qualitative analysis of the electronic readiness of executive officials to move to the principles of e-government in the provision of administrative services.

5. CONCLUSIONS

The conclusions of the study generally show that in the practical context, the development of virtual communications of PU bodies depends on two main factors: electronic readiness and electronic involvement.

When it comes to e-engagement, it is necessary to keep in mind the construction of the primary foundation on the basis of which the sphere of communications and the information society in general will develop in the future. The world practice of the last decade shows that it is optimal to implement a program of gradual measures based on the use of modern IR technologies in the activities of public authorities, namely:

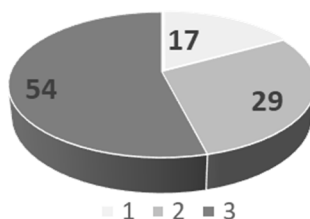
1. Providing conditions for the creation and use of collective access points to public administration resources for the general population and business. This step will lead to the creation of an institution of electronic involvement in society, as every citizen on favorable terms will have the opportunity, firstly, to learn about the current capabilities of the information society, and secondly, directly use a particular information service. As a result, a layer of "electronic citizens" will gradually begin to form in society, who will be able to use modern information technologies as an alternative to traditional methods of communication, formal and informal interactions. This will increase the coefficient of the level of electronic readiness of the population.
2. Creation of specialized communication networks, thus promoting the introduction of information technology in various spheres of society (e-education, e-medicine, e-commerce, etc.) based on the consolidation of resources of all public sectors, as well as their equality.

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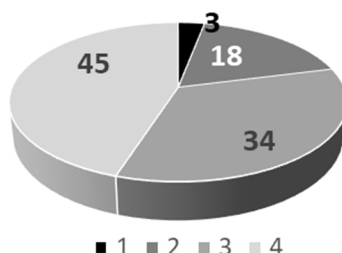
APPENDIXES



Note: Distribution of answers: 1. yes; 2. No; 3. It is difficult to answer

Source: own representation

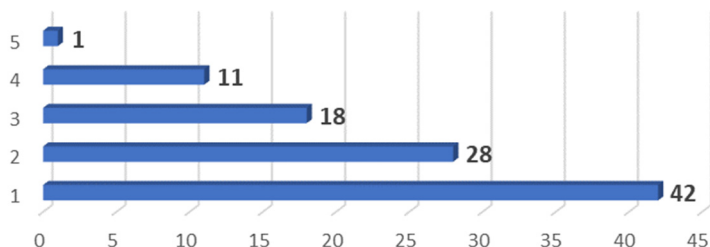
Figure 1. Coordination of the regional informatization program with the concept of administrative reform of Ukraine



Note: Distribution of answers: 1. No, there are no opportunities to work with citizens' appeals and organizations. 2. Yes, online conferences with participation are held on the sites government officials, there are forums. 3. Yes, the sites provide the opportunity for citizens and organizations to participate in discussions (forums, polls). 4. Yes, the site has application forms or provides the opportunity to apply.

Source: own representation

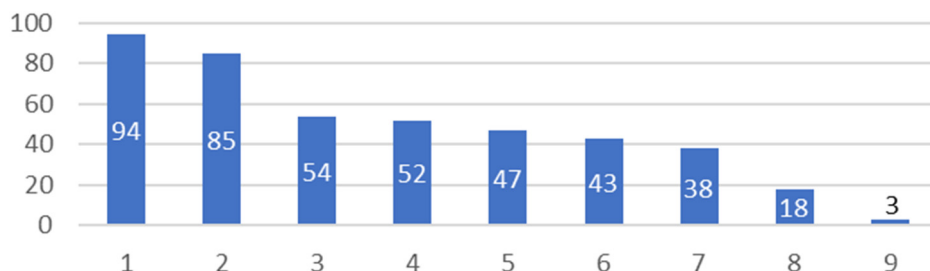
Figure 2. Possibility to apply to the authorities in electronic form. Distribution of answers



Note: Distribution of answers: 1. No, this possibility is missing. 2. Yes, it is possible to fill in electronic forms and make an appointment in person at the department. 3. Yes, it is possible to contact the agency via the Internet and obtain certificates. 4. Yes, it is possible to fill in the form and provide it in printed form or on physical media. 5. Yes, there is a possibility of eyeless visits to the relevant department.

Source: own representation

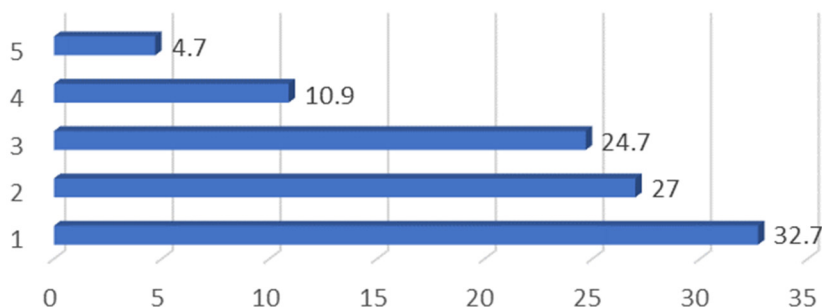
Figure 3. Ability to receive public services in electronic form. Distribution of reports



Note: Distribution of answers: 1. EFA portal (public authority). 2. Public procurement portal. 3. Unified register of citizens and organizations-recipients of public services. 4. Information kiosks. 5. EDS certification center. 6. Multifunctional Centers or services of one window. 7. Unified register of public services. 8. The system of automated identification of citizens and organizations when applying to the EFA through electronic communication channels. 9. Data center.

Source: own representation

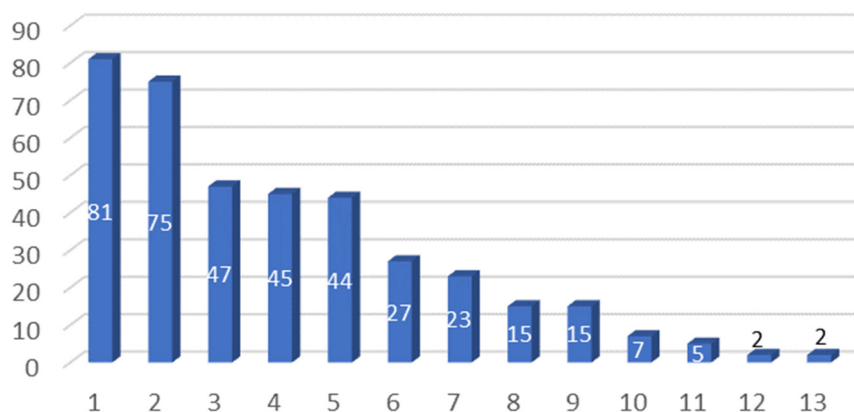
Figure 4. Implementation of e-government components.
Implementation of e-government components



Note: Distribution of answers: 1. Yes, information systems of project and program management of internal activity are implemented. 2. No, there are no information systems that provide planning and project management. 3. Thus, the implemented information systems provide monitoring of project activities according to Key Indicators. 4. Thus, the implemented information systems of project and program management provide coordination and implementation of interdepartmental projects and programs. 5. Yes, a project management standard has been developed, the implementation of which is supported by standard tools - office applications (Word, Excel, etc.)

Source: own representation

Figure 5. Using information systems for strategic planning and program management



Note: Distribution of answers: 1. Increased efficiency of obtaining information. 2. Reduced time for the current collection and processing of information. 3. Reduced paperwork. 4. Increased availability of information, transparency. 5. The cost of providing services has decreased. 6. The waiting time for the recipient of public services in the queue has decreased. 7. Improved the quality of analysis due to the reliability and relevance of primary data. 8. The comfort of receiving public services has increased. 9. The quality of public services provided has improved. 10. There is a possibility of automated analysis of information to identify problem situations. 11. The number of documents provided for obtaining public service has decreased. 12. Decreased government spending. 13. Other?

Source: own representation

Figure 6. Results of the introduction of ICT in the activities of public authorities?

ACADEMIC PUBLISHING – AN ANNOTATED INVENTORY OF CHALLENGES AND CHOSEN PATHWAYS

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ABSTRACT

Context and Purpose: The increased focus of higher education institutions on research and – lately – on societal challenges and real-world problems, the importance of academic rankings for financing and international competitions and the research and publication oriented professional advancement criteria transformed academics into publishing hunters. The world of academic publishing is wild and dangerous, due to the massification of research. Aims and objectives are often confounded with means, quantity and quality (already difficult to assess) don't always walk together, stakeholders have conflicting interests, the old linear models of publishing are replaced with intricate looped and interconnected ones, leading to academics publishing more and achieving less – especially from a societal perspective. The aim of the present study is to summarize the main challenges of the publishing process, together with the pathways chosen by academics to overcome these difficulties.

Design/methodology: A meta-analysis of recent studies on academic publishing was performed, together with a nethnographic exploratory approach on publishing patterns in economics and business; informal talks with academics from business and economics fields from several Eastern EU higher education institutions were used, as well.

Findings: The inventory of challenges includes individual factors (personality and individual morale, goals, knowledge and status, preferences and habits), institutional factors (university and strategy level), social structures and infrastructural level factors (open access, technological disruptive innovations, new social contract for research, preprints), as well as professional culture type of factors (peer-review issues and various biases, alternative research assessment methods, predatory journals, predatory informal rules). Several pathways chosen by academics were observed, leading to hypotheses formulation for future research.

Limitations: The study is exploratory, based on a conventional sample of academics for the empirical part and has an emic, potentially subjective approach.

Originality/value: The study touches a delicate and controversial subject – academic publishing – and brings together both positive and negative aspects for existent pathways, offering a ground for future research.

Keywords: higher education research; publishing models; publishing culture; publishing influence factors; academic publishing pathways.

JEL Classification: I23, M12, M14, D73, D83

1. INTRODUCTION

The “publish or perish” syntagma is old, yet still so vivid and valid that we can’t imagine seeing it vanishing one day. Higher education institutions focus on research more than ever, and just lately consider societal challenges and real-world problems. The importance of academic rankings for financing and international competitions and the research and publication oriented professional advancement criteria transformed academics into real publishing hunters, running for high impact trophies. The world of academic publishing is wild and dangerous, due to the massification of research. Aims and objectives are often confounded with means, quantity and quality (already difficult to assess) don’t always walk together, there are as many conflicting interests as different stakeholders. The old linear models of publishing are replaced with intricate looped and strongly interconnected ones, leading to exhausted academics who publish more and achieve less – not only from a societal perspective.

The context is the one created by the so necessary, yet so far away from perfection evaluation of journals.

Two big mainstream approaches exist for a qualitative classification of journals – one based on stated preferences, the other one on revealed preferences (Harzing and Wal, 2009). The first one is based on sets of criteria established by certain scientific communities, institutions or fields of research, and lead to a considerable amount of various classification lists (British ABS Journal Quality Guide, French CNRS Journal Ranking, Romanian CNCS or UEFISCDI rankings, Polish Journal Ranking etc.) The second one considers the publication patterns and citation analyses. Huge amounts of literature have been written about journal rankings, the dominant approach being still the one suggested in the 70s by Eugene Garfield (Institute for Scientific Information), based on impact factors, to which the more recent approaches are added – Hirsch H-index proposed in 2005, the PageRank algorithm used by Google Scholar, the CiteScore of Scopus, Scimago, etc. All these measures have advantages and disadvantages, and many critiques and abuses were signaled in time: manipulation possibilities, due to different number of pages published yearly, discrimination in favor of older journals, huge differences between disciplines and fields of research, irrelevant international coverage due to the dominant language, the underrepresented developing countries and the limited number of countries represented as a whole, incorrect evaluation of authors versus journals in which they publish, the biases introduced by the absolute and average number of authors for an article in various fields, possible manipulation of citations through peer review practices, scientific

“co-sanguinities” of reviewers, and the list could continue (Cameron, 2005; Moed, 2005; Chapman *et al.*, 2019; Leydesdorff, 2008; Harzing and Wal, 2009; Hirsch, 2020). It is actually quite significant the most recent opinion of the H-index creator (Hirsch, 2020), who bitterly admits that these factors and indices need to be used wisely, because they can have severe, unintended consequences, they influence the publishing behavior of academics, deterring researchers from innovative thinking, making research sensitive or even limited to fashionable subjects, ignoring research outside the mainstream.

Fong and Wilhite (2017) noticed that besides inherent and somehow objective limits of journals and authors’ evaluation, there are increased authorship and citation manipulations in the publishing world: scholars who, from various reasons, add authors to their research papers or grant proposals even when those individuals don’t have any contribution to the research, journal editors or reviewers who indirectly yet strongly nudge authors to add citations not necessarily pertinent to their work, academics artificially increase their references lists with unnecessary citations of articles they did not read. Explained by the more and more intense competition for limited journal space and research funding, these manipulations are encouraged by other factors, as well, pertaining to academic reward systems: the number of publications is quite often the single most influential component of performance reviews, changing sometimes places with the journal impact factor of publications and the order of authorship. Even with the best intentions, peer-review processes have serious limits, besides obvious benefits, and add to the challenges of the academic publishing process (Fong and Wilhite, 2017; Kelly *et al.*, 2014; Padmalochanan, 2019).

Language is a serious barrier for the access to higher ranked journals (Meneghini and Packer, 2007; Sambunjak *et al.*, 2009; Moed *et al.*, 2020). This is a serious obstacle for non-native English speakers, lead sometimes to questionable publishing decisions, due to the inaccessible serious journals. And even more, affiliation matters and alters publishing behaviors (networking, acceptance versus rejection, discrimination, etc. (Smith *et al.*, 2014) To make the image more vivid, vanity and predatory journals entered the scene, with questionable peer-reviews, fraudulent conferences and special issues, intertwined financial interests and intricate corruption of real science (Colquhoun, 2011; Beall, 2012; Bowman, 2014).

A supplementary complication arises from the relevance-rigour and theoretical-applied debates. The managerial relevance of research is sometimes in contradiction with the required “technicality” of research, academic quality and relevance walking sometimes on different paths (Ankers and Brennan, 2002; Baldrige *et al.*, 2004).

The pressure to have good CVs and a good institutional image are other perturbing factors. Time, institutional constraints, limited resources and the urge to “look good” when promoting or applying to various competitions make “cosmetician” PR strategies seem appropriate; some academics start to confound

being a good researcher with looking like a good researcher, publishing the right thing with publishing in the “right” place, substance with surface image (Zait, 2004; Gioia and Corley, 2002; Segalla, 2008).

New trends become visible in the turbulent evolving landscape of academic publishing. Specialists notice a change from linear models to looped ones, pressure for open reviews, an increased focus on societal relevant research, alternative indicators, disruptive technological innovations, new social contracts in research and preprints, the rise of the open access philosophy – all influencing the publishing behavior at individual and institutional level (Björk, 2004; Rowlands and Nicholas, 2005; Vincent-Lancrin, 2006; Gu and Blackmore, 2016; Tennant *et al.*, 2016; Ponte *et al.*, 2017; Braverman, 2018; Tulley, 2019; Walsh *et al.*, 2019; LSE, 2019; Scholastica, 2020; Infante, 2020). Although the open access seems to be the light at the end of the tunnel, many barriers still exist: legal framework, IT infrastructure, business models, indexing services, academic reward systems, marketing and critical mass, plus significant financial aspects for Eastern EU academics.

Finally, apart from these external factors, individual ones also shape academics’ publishing behaviors – factors related to personality, motivations, perceptions, previous experiences, goals and research preferences (Darnon *et al.*, 2007; Shin and Cummings, 2010; Edwards, 2014; Vandewalle *et al.*, 2019).

This is the complex context in which academics have to play, that lead us to the present exploratory study, whose aim is to summarize the main challenges of the publishing process, together with the pathways chosen by academics from business and economics, located in Eastern EU countries, to overcome these difficulties.

2. METHODOLOGY

The study used an exploratory, qualitative approach in order to find out the ways in which academics perceive the publishing challenges and adopt certain pathways in their careers. A non-structured nethnographic analysis of publishing patterns in economics and business was performed first. We analyzed public CVs, Google Scholar profiles and Clarivate profiles for a number of academics in business and economics from Romania, Poland, Bulgaria, Slovak and Czech Republic (members of a research network), as well as those of academics from the main Romanian universities with specializations in economics and business administration; the approach was meant as both an identification and control instrument for the non-structured informal interviews (it was important to observe the type of journals in which they published, the teams of authors and the subjects chosen). At a second stage, informal talks with academics from business and economics fields from Romania and the mentioned Eastern EU countries took place, four times over a period of two years – during two international conferences that took place in Romania and to conferences who took place in Poland and the

Slovak Republic (convenience sample, 21 people, mostly professors – highest academic position). Transcripts were used for a content analysis using an a-priori coding procedure (based on the literature review presented in the introduction). Two coding procedures were performed on the same transcripts (for several randomly chosen items), with a one-month interval in between, to check for the reliability of the categories extraction, considering the fact that only one investigator was used; a 0.9 Cohen K was obtained for the checked items. The analysis was conceptual, and only the presence of the codes and categories was registered, not the weight (Zait, 2016). The main categories and themes from the next section were thus obtained.

3. RESULTS AND DISCUSSION

3.1. Challenges

The content analysis of the informal interviews revealed the presence of the following main challenges directly and indirectly stated by academics:

- individual factors (personality and individual morale – what is or is not appropriate/correct/moral in terms of publishing; goals – being a performing person, being an expert, being better; knowledge and academic status; preferences and habits – quantitative versus qualitative, scientific friendship);
- institutional factors (university and strategy level factors – internal annual evaluation, wage bonuses, research strategy- or lack of research strategy);
- social structures and infrastructural level factors (possibilities for open access, technological innovations; researchers' image in society);
- professional culture type of factors (peer-review issues and various perceived and real biases, paid journals – with a blurred distinction between paid and predatory, informal rules – this is how things are done, research projects' evaluators mismatch).

3.2. Academics' chosen pathways

In this section we synthesized all the solutions (labeled pathways) mentioned by academics in order to overcome the perceived challenges. The following pathways were obtained:

- “Hard way” - top targets, good journals, no scientific or moral compromise, difficult, long wait; pathway walked alone or with carefully chosen co-authors with similar principles;
- “Intermediate way”- normal networking and co-authoring efforts; mix of journals, avoiding the “black sheep” (journals with shaded reputations)
- “Wise hunting” - looking for special issues of good journals, alone or with co-authors, team effort;

- “Short way national”- shortcut pathway, journals with an entrance, strategic co-authors, mainly at national level;
- “Short way international”- shortcut pathway, more accessible international journals, mostly recent ones, networking and strategic co-authors;
- “No compass way” – no strategy, no preference, lower ranked journals to survive.

All ways can be walked with individual support, group support or institutional support.

3.3. Reasons for taken shortcuts in publishing

The whole approach was a non-judging one, with an explicit intention of finding reasonable explanations for the adopted pathways which could be questionable. All researchers offered answers, independent of the chosen pathway. These explanations were classified into two categories, as it follows.

“White” reasons:

- The local specificity consideration;
- The language issues;
- Publishing for training and initiation, for gaining experience;
- Knowledge bridging in cases of limited access to resources;
- Knowledge gap-filling (new issues to be investigated, narrow or unconventional issues, interdisciplinary issues).

“Grey” reasons:

- Lower scientific requests/barriers;
- Quick response in the evaluation process;
- Quick career advancement;
- Fear of repeated rejection;
- Research projects’ constraints;
- Inadequate national or institutional support;
- Group interests.

4. LIMITATIONS

The study has certain limitations, due to the exploratory nature, the convenience non-representative sample used for the informal interviews, the delicate subject and the emic involvement of the investigator.

5. CONCLUSIONS

We found in our study most of the challenges previously identified in the literature, especially for academics from countries outside the Western world (in line with Hapman *et al.*, 2019; Chavarro *et al.*, 2017; Fong and Wilhite, 2017; Colquhoun, 2011; Baldridge *et al.*, 2004). For the chosen pathways and stated


reasons, a quantitative research should be designed, in order to have a quantitative description and especially weight of each pathway. More than this, we would rather conclude with questions for the future: *What do we really want from academics? How do we encourage the desired behaviours? How do we deal with non-controllable factors in such a particular environment, with normal subjectivity limits and inherent differences of views?* These exploratory results show that even when some things remain unspoken, they don't simply vanish, and a lack of action will not solve the myriad of issues from the academic publishing world, and specific difficulties for emergent countries academics might be an extra burden.

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