Resilience and Economic Intelligence Through Digitalization and Big Data Analytics
Frontmatter

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Resilience and Economic Intelligence Through Digitalization and Big Data Analytics

Resilience and Economic Intelligence Through Digitalization and Big Data Analytics

June 10-11, 2021
Bucharest University of Economic Studies, Romania

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Resilience and economic intelligence through digitalization and big data analytics

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The 4th International Conference on Economics and Social Sciences

Resilience and economic intelligence through digitalization and big data analytics

June 10-11, 2021

Bucharest University of Economic Studies, Romania

Foreword

Alina Mihaela DIMA[1*]

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The 4th international Conference on Economics and Social Sciences (ICESS) was organized by the Bucharest University of Economic Studies between 10th and 11th June 2021.

The online edition with the topic *Resilience and Economic Intelligence through Digitalization and Big Data Analytics* was *inspired* by the effects of the health and economic crisis generated by the COVID-19 pandemic. The new economic crisis is considered an important and unprecedented experience in the business world with considerable impact on education, and particularly on university life. The world is changing and new business models will be considered by the most innovative and intelligent people and companies. Resilience and reshape, restart and rebuild are the key words in the new economic revolution. The revolution is related to business, but mostly to intelligence and learning. Virtual and online systems are not a modern solution anymore, but the normal way of functioning. The new business world is driven by digitalization and big data analytics.

The papers selected for online presentation and published in the conference proceedings are an important portfolio of outcomes and solutions for post-crisis challenges and dilemmas, as they propose solutions of how competition will work in digital markets with an emphasis on market power, concentration and data protection; they deal with defining actions and alternative options toward resilient cities, conditions and means of concept implementation, and accountability of urban planning, reflecting the importance of resilience given the limited organizational resources as well as the narrow short-term perspective, in connection with a digital transformation mindset and initiatives based on use of intelligent technologies.

The papers with international co-authorship are an important pillar of research internationalization. ICESS is not only an international conference, but also an international forum for debate, a research platform, and a very important tool for dissemination of research and more importantly, a very useful learning experience for the PhD candidates of the Bucharest University of Economic Studies and of other partner institutions.

The authors and co-authors of this edition presented 164 papers, and more than 35 participants came from 11 different countries: Brunei, Bulgaria, China, the Czech Republic, France, Georgia, Germany, Greece, Italy, Poland and Serbia.

We are committed to support publication opportunities for the conference participants. The partnership with the international publishing house Degruyter/Sciendo will support the proceedings volume publication and further indexation in the main international databases offering more transparency, visibility and international exposure.

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The chairs of the conference together with the co-chairs from partner universities have contributed to the success of this conference through commitment, responsibility and team spirit. They were highly involved in the process of attracting papers, but also in selecting and offering relevant and useful feedback to the authors in the spirit of better quality and competitive selection.

The 2021 edition had the following sections:

- Universities and community impact;
- Innovative Technopreneurship and Sustainable Business Models;
- The role of innovation in public and private organizations in the context of digital transformation;
- Resilience and Digitalization-key strategies for successful Business in critical times;
- Current challenges within demographic data: measurement, collection, retrieval, analysis and reporting;
- The role of accounting in sustainable development;
- Economic Policies for Non-Cyclical Crises;
- Global challenges for agri-food systems and sustainable development;
- Financial perspectives in turbulent times;
- Marketing and Sustainability;
- Global world after crisis: towards a new economic model;
- Business Law and Sustainable Development;
- Applied Statistics & Data Science.

One of the most important university and conference partners is Sapienza University of Rome, Italy, a reliable academic partner, supporting teaching and research activities, especially papers with international co-authorship. This year, the PhD workshop with EM Strasbourg from France "*Branding and Training Talented Researchers for New Entrepreneurial and Digital Society*" was a part of the ICESS conference. The workshop was intended to foster doctoral collaborative research, exchange of ideas and networking among PhD candidates from different fields.

The university life and research have always been supported by businesses and the social community, as business partners have been highly involved in the student life of the university, but also in the research activity. As in case of the previous conference, excellence in research is recognized and supported by the business environment, which are the business partners of the conference. After presentation and final review, the international committee will select the best papers of the ICESS conference for the best paper award – Business Excellence – with the support of the business partners.

As the Bucharest University of Economic Studies is her Alma Mater, professor Mihaela Kelemen accepted the invitation of being guest speaker at ICESS and came back to ASE after many years. She is Chair at Nottingham University Business School in Business and Society. She formerly spent 23 years as a Professor of Management and Public Engagement (since 2006) at Keele University and as a Director of Community Animation and Social Innovation Centre (CASIC), where she lectured and conducted research. She has doctoral degrees from Oxford University and the Bucharest University of Economic Studies. Her research explores a wide range of business and society topics, including market-place exclusion, rural health, food poverty, artisanal mining, volunteering, sustainability, and post-disaster reconstruction, using participatory creative methodologies of stakeholder engagement and knowledge co-production. The example of professor Kelemen is a proof that excellence is a reality and ASE could represent a starting point for a top quality research and teaching career in Romania or in other international university aboard.

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Considerations Regarding the Management of Organizational Culture

Silvia Mioara ILIE (TROI)[1], Costinel Cristian MILITARU[2], Alina Mădălina BELU[3], Ionuț RIZA[4*]

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Abstract

To understand people's behaviour in the workplace, we need to find a balance between understanding people and understanding the complexity of the social situations in which they operate. Each of us has certain opinions about the people around us. These opinions were formed by interacting with these people. Organizations have cultures, just as people have personalities. Organizational behaviour is a product of the interaction between individual and organizational factors, between individual needs and social conventions, between doing what is in our own interest and doing what is allowed. Culture is the core of the entire organizational network. It influences and is influenced by strategy, structure, system, staff and skills. It is also the identifying element of a new organization. All organizations have their own individualized culture. Organizational culture represents the personality of the organization, the way it works. Organizational culture was created over time, being influenced by history, by the permanent relationships with society and its people. Culture has become an important element for economic and business development, it represents the individualization of a group within the organization, bearing characteristics of national culture, its members being the result of specific cultural stereotypes. The increase of investments outside the country of origin, the mergers of companies from different geographical areas, and the globalization of organizations highlighted the importance of cultural differences at the organizational level. The main purpose of the article is to evaluate the organizational cultures practiced by modern organizations in Romania on the basis of measurable variables.

Keywords: organizational culture, organizations, behaviour, management, models.

JEL Classification: M14.

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1. Introduction

Organizational culture management refers to everything that means collective standards of thinking, attitudes, values, beliefs, norms and habits that exist in an organization. In the cultural component we can distinguish some visible elements such as: behaviours and common language, rituals and symbols, but mostly we have less visible components: perceptions and representations about what is "value" in the organization, myths, empirical standards about what it means to work well and behave correctly. Organizational culture is formed due to repeated interactions between members of the organization, sharing the beliefs and values of the individuals that make it up, although there are strong modelling factors that characterize it, such as: leadership style and decision-making, level of formalism, organizational structure, policies and most systems that provide value and support to a certain type of work and a certain type of behaviour. A strong organizational culture would be one in which there is a strong alignment with the values and principles of the organization, i.e., in which the principles and values of employees coincide with those of the institution in which they work. An organization with such a culture does not need control systems and bureaucratic systems. The management of the organizational culture must be approached in a dynamic perspective that facilitates the highlighting of partial or total changes. Culture change is a complex and long-lasting process, with profound implications for all human resources. Sometimes change is impossible without removing members of the organization who want to fully maintain its original culture. Any change in the organizational culture requires, beforehand, an audit of it, respectively an evaluation of the intensity of manifestation in the organization of the cultural components and the identification of the ways of action in order to modify and / or consolidate the initial organizational culture. Organizational culture is important because it helps organizational management, strategic planning, changing the mentality, but also the active involvement of employees. In fact, the organization hires people who fit their culture: employees who frequently move away from the organizational culture are eliminated. Organizational culture, like social culture, operates at deep levels of human beliefs, expectations, and values. These are manifested in behaviours, rituals and symbols and form the support for most behaviour patterns that exist in the organization.

Organizational culture management is a dynamic phenomenon that surrounds us all the time, being constantly played and created by our interactions with others and shaped by leadership behaviour, establishing structures, routines, rules and norms that lead to behavioural constraints. The purpose of the article is to try to clarify how managers perceive the main models of organizational culture.

2. Problem Statement

Beginning in the 1970s, organizational research began to use cultural concepts in the analysis of organizational behaviour. An increasing number of researchers, business people and the media have begun to focus on the concept of organizational

culture management, a series of studies highlighting a wide variety of relationships between organizational culture and the results or functions of the organization (Davey & Gillian, 2001). Thus, personal productivity, the financial results of the organization, strategic planning and implementation of strategies, recruitment and selection processes, innovation are related to organizational culture (Fayol, 2005). The management of organizational culture is a complex of behaviours, practices and value systems that ensure and govern the cohesion of its members. The foundations of organizational culture lie in the national culture because the rules, norms, values found in an organization have their origin in the rules, norms and values promoted at the level of national culture (Martin, 2002). The importance of studying the management of organizational culture is given by the practical valences of this tool used, more and more often, in enhancing the company's performance (Dye, 2020). Diagnosing the dimensions of organizational culture allows the observation of human behaviour in the organization and highlighting the realities of the organization relevant to its functioning (Coyle, 2018). Culture can contribute both to adaptation to the external environment, but also to the need for internal integration through the adherence of all staff to the strategic objectives of the organization, the cohesion of working groups being vital for the efficient functioning of the organization (Bashforth, 2019). An organization is characterized by a system of values that make up its *cultural profile* (Quinn, 2015). Each organization is founded to achieve a certain goal, human action being oriented towards a well-defined goal. Goals have priority over the other components of the organization, because it by addressing them that the structure of the organization is designed (Kegan & Lahey, 2016). They are considered the foundation of work activities, of the responsibilities associated with concrete work tasks, respectively (Hofstede, 2001). Organizations can achieve their goals only under the conditions of respecting the functional and structural order, which is a factor of its stability (Schein, 2004). The order in the organization is ensured by the work behaviour of the employees, by the observance of the work discipline, by the conscientiousness of the staff, by the sense of responsibility for the accomplishment of the tasks. Discipline, responsibility, stability are values that characterize the conservative aspect of organizational activity (Connors & Smith, 2011).

In the specialized literature related to modern management, several types of organizational culture have been identified:

1) The Task Type culture that develops in companies where the organization is seen as a network of tasks that are distributed in relation to the potential of individuals. There is a team culture, in which professional qualities and skills matter more than functions. Respect is based on these skills and less on age and hierarchical position. Management is flexible and stimulating so that employees and management come to have common values and goals, and the feeling of *together* is paramount in any action taken. Organizations are adapting quickly to change (McCord, 2018).

2) Organizational culture Type Power is highlighted by the centralization of power, leadership and control. It is specific for this type of culture to know very well the work tasks, the employees being responsible, and the hierarchy being a clearly

respected and established one. It stands out for its adaptability to change. Management is power-oriented, and the idea of efficiency is dominant (Besner, 2020).

3) Role Type Culture is present in organizations where the work environment wants to be extremely rigorous, organized to the last detail and extremely formalized. The procedures are the ones that will permanently govern the activity of the employees and the management. It is reluctant to the changes that take place in the environment in which it works (Lee Yohn, 2018).

4) Person Type culture is characterized by individualism. The interests of the individual are above all, which is the central point of the organization. Managers are seen as good leaders, with negotiation skills to coordinate activities (Grieser, 2019).

The regulatory function performed by the organizational culture contains both formal and informal laws, which indicate how one should behave in the work process. The management of the organizational culture is determined by a series of factors of an endogenous and exogenous nature to the organization that make their mark on the organizational characteristics.

3. Aim of the Research

The main purpose of the research is to identify the application of the main models of organizational culture practiced by managers of organizations from Romania. Analysing the organizations subject to the research study, several models were highlighted that provide a framework for a deeper analysis of the concept of organizational culture:

C1-culture of "Task" - is geared towards professional tasks. The corresponding structure can be represented by a rectangular network, the influence being located in nodes. The emphasis is on the execution of the task, seeking to ensure all the appropriate resources and the right people for each level of the organization, who are then left to do their best.

C2-culture of "Person" - in this culture, the individual is a central point. Its purpose is to serve and help its members, promoting their own interests, without any global goal.

C3-Culture "Power" - is common in small organizations, in some commercial and financial companies, as well as in some unions, political organizations and pressure groups with a single orientation.

C4-Culture of role "Role" - is typical of the classical, formal organization, better known by the concept of bureaucracy and can be represented graphically by a temple. This type of organization is characterized by strong specialized or functional sectors. There is a high degree of formalization and standardization, the activity of the functional sectors and the interaction between them being controlled by rules and procedures, by defining the positions and the authority conferred to them, the way of communication and by regulating the disputes between the functional sectors.

The objectives of the research are:

1. Analysing the implementation of organizational culture management;
2. Analysing the perception of managers regarding the main types of organizational culture;
3. Establishing the importance of each type of organizational culture.

The following hypotheses have been formulated to underlie the scientific research:

H 1: Culture of "Role" is the most used by managers;
H 2: Ultimately, managers take into account Culture type “Power”;
H 3: The field of IT activity gives the greatest importance to the management of organizational culture.

After establishing the objectives as well as the hypotheses underlying the scientific research study, the research plan was designed, which included the following stages:

Step 1 - Establishing the research community: managers from Romania, internet users who understand the organizational culture activities.

Step 2 - Identification of the facility survey, i.e., the managers of companies in four areas: automotive, IT, energy, food - they perceive organizational culture activities.

Step 3 - Elaboration of the questionnaire: the instrument that was the basis of the article and which was used to survey the opinion of managers on organizational culture, is the online questionnaire, the method of data collection was an online survey conducted on the web, thus allowing the analysis and explanation of causal relationships between variables.

To test the hypotheses, the questionnaire was divided into five sections:

1. Demographic characteristics;
2. Elements that define the organizational culture of the “Task” type;
3. Elements that define the organizational culture of “Person” type;
4. Elements that define the organizational culture type "Power";
5. Elements that define the organizational culture of “Role” type.

A number of 628 valid questionnaires were obtained, which allows us to use a large number of statistical techniques to analyse the data collected. As both the time and the interview materials and operators traditionally used in the surveys are quite expensive, a modern method of applying the questionnaire was used, namely its online design and application using the Google Forms application.

Step 4 - Determination of the sampling method: simple random sampling was used. Subjects who were the subject of the scientific research study were selected based on two criteria: availability and accessibility.

Step 5 - Exploratory quantitative analysis: data collection was carried out between October 2020 and January 2021, using the questionnaire, a quantitatively structured research tool. The duration of completing the questionnaire was about 20 minutes.

The main purpose of this stage was to outline, with the information generated by the questionnaire, as well as with other information obtained from secondary

sources, the realistic image of the managers' behaviour towards the organizational culture.

4. Research Methods

We conducted a research based on 2 types of questionnaires: one on organizational culture from the perspective of employees with executive positions, and the second on organizational culture from the perspective of management. The questionnaire applied was a mixed one, including both open and closed questions and control questions. It also includes: dichotomous questions (with Yes or No answers), open-ended questions that allow answers of unspecified length, questions with choice answers, named and semi-open (a limited number of specified answers), semantic questions in scale, called and questions with answers ranked in ranks (Likert scale - through which the preferences of individuals can be tested gradually). The obtained results were recorded, stored and structured, obtaining the database necessary for the analysis. The recorded data were subjected to adjustment, grouping, aggregation and coding operations for easier processing, analysis and interpretation. Thus, a database was created that could be used electronically.

In the modelled socio-economic universe, the problems of assisting the economic decision are generated by multicriteria decision-making processes that we used in the study of the research of the *maximum utility method* (Morgan, 2020). Modelling seeks to make the most of the information base scientifically, and the procedures for imitating the rational mode of decision-making are, in more or less elaborate forms, the conceptual essence of models. The steps of the global utility method are as follows (Morgan, 2020):

Step 1. Build the utility matrix with the elements, i = 1, ..., r and j = 1, ..., n. (1)

Each element of the matrix is calculated for the maximum criterion with the expression:

$$x_{ij} = u_{ij} = \frac{x_{ij} - x_{i\min}}{x_{i\max} - x_{i\min}} \tag{2}$$

and for each minimum criterion with the expression:

$$x_{ij} = u_{ij} = \frac{x_{i\max} - x_{ij}}{x_{i\max} - x_{i\min}} \tag{3}$$

where:

x_{ij} = the value of indicator *i* associated with indicator *j*;

$x_{i\max}$ = the minimum value of indicator *i*;

$x_{i\min}$ = the maximum value of the indicator *i*.

Step 2. Calculate the overall utility for each project as the sum of the products in the element of the utility matrix (the column vector corresponding to the project) and the important coefficient given for each indicator.

$$UG_j = \sum_{i=1}^{r} \alpha_i u_{ij}, where \sum_{i=1}^{r} \alpha_i = 1 \quad (4)$$

Step 3. Choose the project that corresponds to the maximum global utility.

$$\max\{UG_j\} \Rightarrow V_j \quad j = 1, ..., n \quad (5)$$

For the division of some decision V_i variants (n variant) are considered, and for the selection of the best one offered by simultaneously considering several criteria of appreciation (Cj, j = 1, …, n) and the global utility. Finding the best combination of attributes (characteristics of a variant) forms the object of the multi-attribute problem (Morgan, 2020). This involves the transformation of all numerical values a_{ij} (expressed in associated units of measure) and qualitative characteristics into utilities u_{ij}, i.e., numerical values (adimensional) located in the interval [0, 1]. The basic assumption in the correct function of the weighted sum method is the independence of the criteria. The largest of the synthesis utilities indicates the best option (Morgan, 2020).

5. Findings

Table 1 presents the informational basis of the study, respectively the share of importance that managers give to each model of organizational culture.

Table 1. The importance of organizational culture

MODEL OF ORGANIZATIONAL CULTURE	FIELD OF ACTIVITY			
	IT % *(v1)*	AUTOMOTIVE % *(v2)*	ENERGY % *(v3)*	FOOD % *(v4)*
C_1 - Culture of "Task"	16.45	22.35	27.50	12.50
C_2 - Culture of "Person"	10.55	15.15	11.90	23.61
C_3 - Culture "Power"	8.90	13.25	9.80	10.54
C_4 - Culture of role "Role"	23.45	16.00	11.82	23.55

Source: Developed by the authors based on the collected data.

The results indicate that the manager takes into account the first ***C4 - Culture of the "Role"*** type in which people are selected according to the satisfactory fulfilment of their role, personal power is not accepted and the professional power of the expert is tolerated properly, rules and procedures are major methods of influence. For the individual, the role culture offers security and a favourable opportunity to acquire professional specializations. But it is dissatisfying for ambitious, power-oriented people who want to exercise control over their own work or who are more interested in results than methods. Thus we can say that *Hypothesis 1 is validated.* Ultimately, managers take into account ***C3 - Culture type "Power"*** (figure 1) - control is exercised mainly through specially chosen key people, according to a limited number of rules; decisions are made more as an effect of the balance of influences, than on a procedural or purely logical basis. *Hypothesis 2 is also validated*.

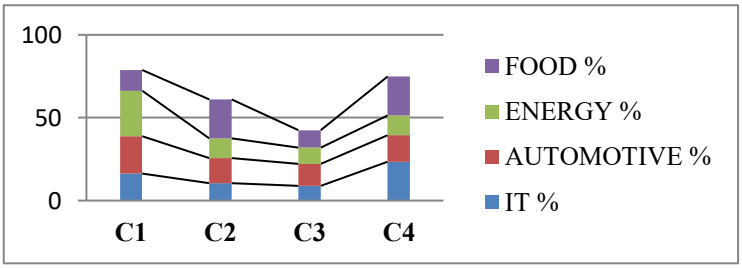


Figure 1. The share of organizational culture models
Source: Developed by the authors based on the collected data.

Going through the calculation algorithm involved:
Step 1 - Building the unit matrix with the elements x_{ij} (Figure 2).

$$\begin{bmatrix} 0.26 & 0,66 & 1,00 & 0,00 \\ 1,00 & 0,65 & 0,90 & 0,00 \\ 0,00 & 1,00 & 0,21 & 0,38 \\ 0,99 & 0,36 & 0,00 & 1,00 \end{bmatrix}$$

Figure 2. Matrix of units
Source: Developed by the authors based on the collected data.

Step 2 - Calculation of global utilities for each organization (Table 2):

Table 2. Results of the calculation of global units

GLOBAL UTILITY	RESULT
IT	2.25
AUTOMOTIVE	2.66
ENERGY	2.10
FOOD	1.38

Source: Developed by the authors based on the collected data.

Step 3 - From Table 2 it is observed by the calculation of global utilities, the highest global utility of companies is in the field of AUTOMOTIVE - so we can say that *Hypothesis 3 has not been validated*. Therefore, following the application of the algorithm for calculating the maximum global utilities method, it can be concluded that the organization in the field of AUTOMOTIVE has best assessed the importance of organizational culture management.

Thus we can conclude that the differentiation between types of cultures is given by factors such as: organization strategy, how decision makers are perceived, how successes and failures are appreciated, how each member's duties are perceived, how they implemented and respected the procedures and how cultural differences are implemented and accepted at the level of the organization.

6. Conclusions

From a theoretical point of view, the results obtained offer a perspective on the perceptions of managers regarding the management of the organizational culture developed by the companies that carry out their activity on the Romanian territory.

Regarding the contribution to the literature, we consider that it has the merit of developing the main models of organizational culture, as follows:

1) Culture of "Task" is best suited to current trends of change and adaptation, individual freedom, and low social differences, but it cannot be appropriate to all circumstances. The manager of a "task" culture must be flexible and confident in their ability to act in an unstable and probably short-lived atmosphere. They should expect to be judged on the results and enjoy coordinating the work of colleagues who may be more expert than the manager itself in accomplishing various aspects of the task. Each team member expects some control over their own work. It is considered to be the favourite culture of most middle managers. The “task” culture depends on the mobilization of the whole group, in order to improve efficiency, as well as on the identification of the individual with the objectives of the organization. As such, this is a team culture in which the group's results are ahead of individual goals and of most divergences between positions and styles.

2) Culture of "Person" is a rare type of culture. In this type, individual culture is the central point, the organization being subordinated to individual interests. It can only exist where there is no global goal.

3) Culture type "Power" organizations with this type of culture can respond quickly to the evolution of events, they strongly depend on the decisions of those at the centre to ensure success. Performance is appreciated by results. The atmosphere in these cultures may seem harsh, being successful is accompanied by low morale and a pronounced fluctuation of the workforce due to individual failures or leaving this competitive framework. These crops can be as effective as they are unpleasant. The management and control is performed centrally through the key people chosen based on a limited number of rules and procedures and often the control is exercised by the central figure through "convocations" at the centre.

4) Culture of role "Role" seems to satisfy managers who like security and predictability, who want to be successful in fulfilling their role rather than making amazing personal contributions, and who are more interested in becoming more expert in applying accepted methodology than to improve their personal results. This culture is found in large organizations with a well-defined structure, which have specialized structures in different fields, within which differentiated subcultures appear. This type of culture is based on logic and reason, its activity being carried out based on numerous procedures. In this type of organization, the role is more important than the person holding the job.

If we intend to establish the limits identified at the level of the research study, we must highlight the dynamics of the changes that take place in the analysed fields of activity. The empirical research on organizational cultures was limited by the willingness of the subjects to respond in the allotted time, although it took place at national level, with interviews of both employees with executive and management

positions within the territorial units and those within the central units.. Limitations arise also due to the fact that the questions were considered uncomfortable, such as those regarding the perception of managers to whom they are directly subordinated. All these limitations identified in the development of the scientific approach can be transformed into perspectives for future research. This study on organizational culture can be the starting point of future research on the concept of change, by creating statistical models to be tested for both employees with management functions as well as those with executive functions. Any future research on organizational culture must take into account the interdisciplinary nature of this concept and the specificities of foreign cultures that interact with the local culture.

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Challenges of Modern Public Management from a Human Resources Perspective

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Abstract

Human resource management is not a new idea to be imposed on public services. This is a natural and essential part of management, all managers playing an active role in the process of managing their own staff. Managers manage people, and this is one of their basic responsibilities. But managers also manage other resources, including budgets and material resources. The description of people as resources can lead to the rejection of such labelling, because the human factor has a much higher intrinsic value than money or other material aspects. However, their non-recognition as a resource has led to diminished attention to the task of managing people. Accepting people as a resource emphasizes that they are at least as important as other resources, and that their good management requires levels of training similar to those needed to manage any other type of resource. This is especially true in the public sector where people remain the most valuable asset, as the provision of efficient public services largely depends on the competence of civil servants. All managers are responsible for the efficient management of their resources, the role of directors in the management and evolution of staff being as important as that of the manager specializing in human resources. Human resource management refers - like all management activities - to policies and procedures. The main objective of the article is to analyse the process elements that can influence human resource management.

Keywords: management, human resources, public sector, procedures, processes.

JEL Classification: M12.

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1. Introduction

It is known that the value of an administrative system is, first of all, given by the human potential it has, and by the realization of its functionality, which ensures the implementation of political decisions and economic and social progress in general. The value of an administrative system consists not so much in the material and financial means at its disposal, but especially in its human potential. All public positions require thorough professional training, because the professional competence is absolutely necessary to obtain efficiency at the level of the administrative institution. Competence is the ability of a person to perform their tasks properly and with maximum efficiency. Performance is dependent on competence, and the performance of a civil servant influences the performance of the public institution in which they operate.

Human resources are the most dynamic of all the resources that any organization has. That is why it needs to be given special attention by the management if it wants to exploit it to its maximum capacity in the professional activity. Human resource development is a complex process that is approached both nationally and internationally (Greene, 2020). The identification of knowledge, skills and experiences necessary for different categories of administrative staff must take into account the permanent changes that occur in public administration, in society, the fact that some categories are necessary for vocational training, others for professional development and specialization, and others for cultural change the level of the professional community, determined by the new administrative context. Human resources in public administration can be a major problem because the desired results in this area cannot be achieved if civil servants, those responsible for law enforcement, do not show professionalism and certain qualities. The quality of human resources in public administration is an important factor for its ability to meet the general interest by providing quality public services. We can say that the achievement of the mission and performance of a public entity depends almost entirely on the professionalism, competence and integrity of the committed human resources available to it, which is why human resource management becomes, from this point of view, one of the key processes in the functioning of public entities. Public management of human resources is the set of operational activities (consisting in planning, recruiting and maintaining staff) and energy (by creating an appropriate organizational climate), which provide the organization with the necessary human resources and their efficient use (Gilbert, 2020). Public human resources management is a relatively new term, which has a global, interdisciplinary and professional approach to issues related to the staff of an organization.

The decisional problem from which we start in our research approach is the answer to the question: what is the perception of Romanian managers in public institutions related to the implementation of the process elements of the human resources management system? Thus, the purpose of the article is to try to clarify the way in which managers in several public institutions in Romania perceive the human resources management system.

2. Problem Statement

The doctrine of public administration and the normative acts that refer to the management of human resources delimit two meanings that can be given to the notion of human resources policy in public administration: - *in a narrow sense*, it refers to the principles and rules governing the conclusion, modification or dissolution the employment contract, as well as the obligations of the personnel from the public administration; - *in a broad sense*, it also includes the principles and rules that refer to the achievement of the necessary conditions to be created within the public administration authorities for the development in good conditions of the activity of the salaried staff (Mathis & Jackson, 2015). From this point of view, the human resources policy considers the training, recruitment, promotion and improvement of civil servants and other employees, the relations within the public administration authorities and with the beneficiaries of the administration, the qualities, style and methods used by leaders specialized in public administration (Brown & Harvey, 2016).

Public management, from the perspective of human resources, is identified with the following elements:

1.Training and development of human resources: is the concern to improve the intellectual or emotional skills needed by an employee to perform their job better (Sims & Bias, 2019).

2.Remuneration systems: The remuneration strategy must determine the employees to get involved and make every effort to achieve the objectives included in the organization's strategy (Slater, 2019).

3.Health and safety/staff well-being: a healthy economy depends on a healthy population. Health promotion in the professional environment is an activity carried out through various programs, in order to help employees maintain optimal health, by being aware of the importance of the problem and adopting beneficial changes in style and work environment (Mariappanadar, 2019).

4.Discipline or dissatisfaction: coexist in close correlation with the rights and duties of employees. Any violation of the employees' obligations can generate acts of indiscipline (Dundon & Wilkinson, 2020).

The human resources in the public institutions represent certain particularities depending on the specificities of the activities carried out within the public institutions (Cole, 2018). A properly formulated human resources policy must take into account the importance of the staff within the organization, the responsibility of the management and the general objectives to be met (Buckingham, 2011). Achieving the objectives and tasks of public administration reform must be accompanied by a well-defined personnel policy (Covey, 2012).

The general goal of public human resource management is to contribute as effectively as possible to achieving the goal of the organization, through people. The public administration system involves the application of human resources policies that present certain specific aspects, determined by the activity carried out in public institutions (Eitington, 2011).

3. Aim of the Research

The purpose of the article is to determine how managers in several public institutions from Romania perceive the human resources management system. The public human resources management system is structured on several process elements:

P1. Training and development: the role of the human resources service in training and development differs considerably; in large institutions this is a separate function, but closely linked to the human resources service. In small institutions, it often does not even exist, and the training / development activities are carried out ad-hoc.

P2. Remuneration systems: the role of the human resources service differs; it may be involved in negotiations on pay / reward systems, but most often its role will be limited to routine issues, recording the correct level of pay or answering questions from employees on various topics.

P3. Health and safety / staff well-being: in most cases, the human resources service has the responsibility to implement the health and safety policy. This concerns the working environment, the safety of the equipment and its use.

P4. Procedures related to discipline or dissatisfaction: the role of the service in this area is similar to that assumed in performance management. The procedures must be applied strictly in accordance with the existing law / procedures and recorded precisely at each stage.

Based on the purpose of the scientific research, the following objectives have been drafted:

1. Analysing the public human resources management system;
2. Analysing the process elements that make up the public human resources management system;
3. Identifying the connections between the process elements.

Based on studies and theories in the field of literature and personal observations, the following hypotheses have been formulated, which underlie the scientific research:

H 1: There is a strong correlation between *P1.Training and development* and *P2.Remuneration systems*;

H 2: There is a very significant positive relationship between *P1. Training and development* and *P3.Health and safety/welfare of staff*;

H 3: Between *P1.Training and development* and *P4.Procedures related to discipline or dissatisfaction* there is a very significant positive relationship;

H 4: There is a positive relationship between *P2.Remuneration systems* and *P3.Health and safety / welfare of staff*;

H 5: Between *P2.Remuneration systems* and *P4.Discipline-related procedures or dissatisfaction* there is a very significant positive relationship.

4. Research Methods

We resorted to the approach of a statistical-mathematical analysis of quantitative type, for data collection using the questionnaire as a research tool. We chose this type of analysis because it is primarily aimed at verifying the theories and hypotheses issued, regarding the subject, using structured techniques, quantitatively measurable (by using indicators of dispersion, central tendency and correlation) having an evaluative, predictive and causal character. Data collection took place between November 2020 and February 2021, using the questionnaire. A number of 423 valid questionnaires were obtained. In the processing and analysis of the collected data, the special statistical research software S.P.S.S. (Statistical Package for the Social Sciences) was used, by means of which the Spearman rho Correlation Coefficient was calculated.

5. Findings

To validate the hypotheses, we used the most common and by far the most useful, the Spearman rho correlation coefficient, with the help of the special statistical research software S.P.S.S. (Table 1).

Table 1. Spearman rho correlation coefficient values

Correlations				
Spearman's rho	P1.Training and development	P2.Remuneration systems	P3. Health and safety/welfare of staff	P4.Procedures related to discipline or dissatisfaction
P1.Training and development	correlation coefficient **1.000**	correlation coefficient **.921****	correlation coefficient **.837****	correlation coefficient **.823****
	Sig.(2-tailed) **-**	Sig. (2-tailed) **.000**	Sig. (2-tailed) **.000**	Sig. (2-tailed) **.000**
P2.Remuneration systems	correlation coefficient **.921****	correlation coefficient **1.000**	correlation coefficient **.800****	correlation coefficient **.784****
	Sig.(2-tailed) **.000**	Sig.(2-tailed) **-**	Sig.(2-tailed) **.000**	Sig.(2-tailed) **.000**
P3. Health and safety/welfare of staff	correlation coefficient .837**	correlation coefficient .800**	correlation coefficient 1.000	correlation coefficient .895**
	Sig.(2-tailed) .000	Sig.(2-tailed) .000	Sig.(2-tailed)	Sig.(2-tailed) .000
P4.Procedures related to discipline or dissatisfaction	correlation coefficient **.823****	correlation coefficient **.784****	correlation coefficient **.895****	correlation coefficient **1.000**
	Sig.(2-tailed) **.000**	Sig.(2-tailed) **.000**	Sig.(2-tailed) **.000**	Sig.(2-tailed) **-**

Source: Processing data obtained through SPSS program.

Following the analysis of the Spearman rho correlation coefficient, we can observe the following correlations between the different process elements that make up the public management system:

1. There is a very high significant positive relationship between *P1.Training and development* and *P2. Remuneration systems* (rho = 0.92, df = 423, $p < 0.001$). From the scatter plot (Figure 1) it can be seen that the point spread is relatively limited, which indicates a strong correlation ($R^2 = 0.81$). The slope of the scattering of the results is relatively straight, indicating a linear rather than a curvilinear relationship. It can be stated that ***Hypothesis 1 has been validated.***

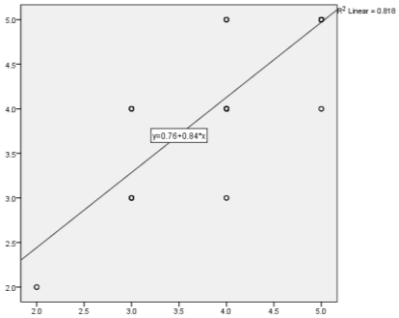


Figure 1. Dispersion diagram - correlation between P1. Training and development and P2. Remuneration systems

Source: Processing data obtained through SPSS program.

Following the validation of Hypothesis 1, we can conclude that there is a correlation between *P1. Training and development* and *P2. Remuneration systems,* which aims at actions that will not lead to direct expenses and will be found in the comfort state of employees by ensuring the following elements: building a climate of valorisation of well done work; recognition from the superior; creating competitive work situations between individuals and groups based on the diversification of tasks, clearly defining the criteria and objectives to request the entire productive potential of employees; diminishing the organizational barriers and those related to the working conditions.

2. It can be seen from Table 1 that there is a very significant positive relationship between *P1.Training and development* and *P3.Health and safety / welfare of staff* (rho = 0.83, df = 423, $p < 0.001$). The scatter plot (Figure 2) reveals that the point spread is relatively limited, indicating a strong correlation ($R^2 = 0.67$). The slope of the scattering of the results is relatively straight, indicating a linear rather than a curvilinear relationship. In conclusion, ***Hypothesis 2 is validated.***

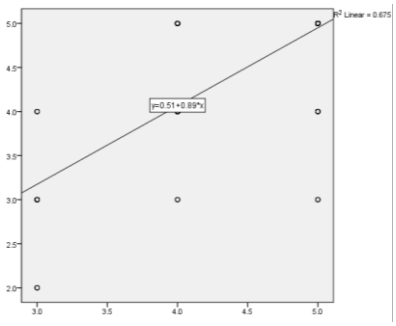


Figure 2. Dispersion diagram - correlation between P1. Training and development and P3. Health and safety / welfare of staff

Source: Processing data obtained through SPSS program.

Demonstrating the correlation between *P1.Training and development* and *P3. Health and safety/staff,* it means that well-being can bring many benefits to any public institution, such as: increase productivity by reducing absenteeism due to illness; reduction of healthcare costs; maintenance of older workers; stimulating more efficient working methods and technologies.

3. Between *P1.Training and development* and *P4.Procedures related to discipline or dissatisfaction* there is a very significant positive relationship (rho = 0.82, df = 423, $p < 0.001$). In Figure 3, the scatter plot reveals that the point spread is relatively limited, indicating a strong correlation. The slope of the scattering of the results is a relatively straight line, indicating a linear rather than a curvilinear relationship. It can be stated that ***Hypothesis 3 is fully validated.***

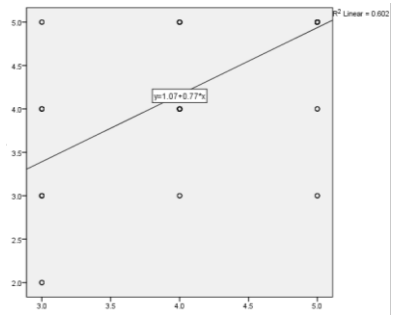


Figure 3. Dispersion diagram – between P1. Training and development and P4. Procedures related to discipline or dissatisfaction

Source: Processing data obtained through SPSS program.

It can be stated that Hypothesis 3 is fully validated. The correlation between *P1. Training and development* and *P4.Procedures related to discipline* or dissatisfaction is ensured in any institution by ensuring economic, legal, social and organizational conditions necessary for the performance of work, by forming conscious attitudes

towards work, by applying incentives and rewards as well as sanctions in case of committing disciplinary offenses.

4. Analysing *P2.Remuneration systems* and *P3.Health and safety/well-being of staff* results in a very significant positive relationship (rho = 0.80, df = 423, $p < 0.001$). The scatter plot (Figure 4) reveals that the point spread is relatively limited, which indicates a strong correlation ($R^2 = 0.61$). The slope of the scattering of the results is relatively straight, indicating a linear rather than a curvilinear relationship. It can be stated that ***Hypothesis 4 is validated***.

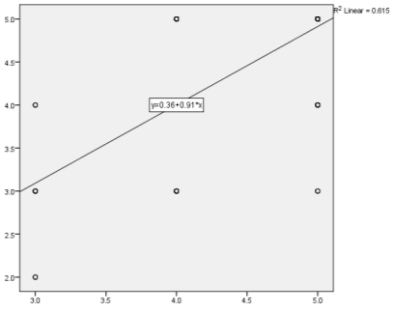


Figure 4. Dispersion diagram - correlation between P2. Remuneration systems and P3. Health and safety / welfare of staff

Source: Processing data obtained through SPSS program.

Maintaining the correlation between *P2.Remuneration systems* and *P3.Health and safety/welfare of staff* among the priorities of management makes any institution more productive, more attractive and more responsible for the condition of its employees. Therefore, the results of the investigations allow us to find that occupational health has direct implications on the activity of employees, especially on their performance.

5. Between *P2.Remuneration systems* and *P4.Procedures related to discipline or dissatisfaction* there is a very significant positive relationship (rho = 0.84, df = 423, $p < 0.001$). The scatter plot shows that the point spread is relatively limited, indicating a moderate to strong correlation ($R^2 = 0.54$) - Figure 5. The slope of the scattering of the results is relatively straight, indicating a linear rather than curvilinear relationship - ***Hypothesis 5 is validated***.

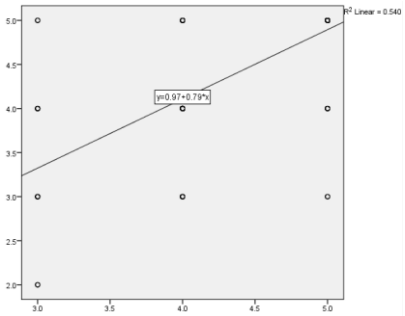


Figure 5 - Dispersion diagram - correlation between P2. Remuneration systems and P4. Procedures related to discipline or dissatisfaction

Source: Processing data obtained through SPSS program.

We can say that the procedures can be included in the training of managers, because in most institutions such problems do not occur frequently, fortunately. Mainly, the service has the responsibility to ensure the correctness at each stage, the access of the respective employee to all available support, to the staff representatives and to the protection of the law.

6. There is a very large positive positive relationship (rho = 0.89, df = 423, $p < 0.001$) and between *P3. Health and safety/welfare of staff* and *P4.Procedures related to discipline or dissatisfaction* (Table 1). The scatter plot (Figure 6) reveals that the point spread is relatively limited, which indicates a moderate to strong correlation ($R^2 = 0.74$). The slope of the scattering of the results is relatively straight, indicating a linear rather than a curvilinear relationship.

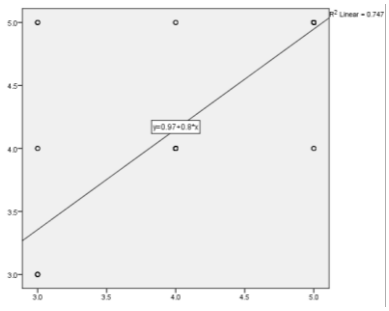


Figure 6 - Dispersion diagram - correlation between P3. Sanitary and safety/welfare of staff and P4. Procedures related to discipline or dissatisfaction

Source: Processing data obtained through SPSS program.

Taking into account the specificity and characteristics of the staff in public institutions, it can be said that the role of human resources is fundamental for the efficient functioning of any organization.

6. Conclusions

Following this study we can conclude that the efficiency of public services in the administration is determined not so much by the material and financial resources at its disposal, but especially by the human potential. Within public institutions, a quality human resources management is of great importance, because depending on the efficiency of human resources management depends directly on the success of all activities to be carried out throughout the community. The objectives most pursued by human resources management activities, in order to help public institutions become more efficient, include the following: to help the public administration achieve its goals, to use the staff's skills in the most efficient way, to provide well-trained and motivated staff, to maintain a high level of professional ethics, to help increase the level of employee satisfaction in relation to professional activity and to help make easier changes for the institution in general and for community representatives.

From the point of view of novelty elements, the results obtained in this article can provide real support in managerial decision making, thus bringing a number of contributions to the activity of public human resources management as a result of which we can say that the main challenges of modern public management have the following roles: to make institutions more accountable, transparent and accessible, to establish a performance-based approach in the public sector, to change the perception of performance in the public sector, to facilitate relocation and restructuring, to better organize and motivate civil servants.

We consider that the contribution brought by this research study, compared to the specialized literature, has the following merits: 1) to clarify the concept of public management system from the point of view of human resources; 2) to analyse each process elements that make up the public human resources management system; 3) to identify the links between the process elements of the public human resources management system.

Regarding future research directions, an identification of the moderating factors of the relationship between the process elements of public human resources management and the different marketing variables could be an important research.

The limits of the study undertaken are diverse, from which we point out: the time horizon chosen by us is quite narrow, because research topics often generate studies of 50-100 years; the scientific approach was channelled on the interpretation of the studies, and not on the explanation of the use of the obtained findings; the inductive research methodology was easily realized.

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Resilience and economic intelligence through digitalization and big data analytics
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Bucharest University of Economic Studies, Romania

Global Economy in the COVID-19 Era. The Impact of the Pandemic on the Economic and Financial Systems

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Abstract

The transition from pandemic shock and adaptation to the new normal was gradual, affecting the social, political, but especially the economic spectrum. The global business was the first to adapt to the new situation and operate in a new paradigm. The spread of COVID-19 in the first part of 2020 affected all emerging markets, although some of them show more economic resilience than others. The impact has been determined or influenced by the form and magnitude of fiscal and monetary incentives, as well as the health systems efficiency. We are witnessing the emergence of obstacles to the free flow of capital, labour and trade. We are also witnessing a relocation of supply chains, a different complexity of US-China trade tensions and an increased risk of public debt among cloistered markets, resulting in an increased risk of default on sovereign debt.

Keywords: pandemic, economic crisis, financial risk, supply chains, systemic transformation.

JEL Classification: F01, E44.

1. Introduction

The pandemic started at the end of 2019 with the evolution of a new strain of coronavirus. At the social level, it is obvious that the shock of March and April 2020 was felt by the citizens of all states around the world, who not only seem to be accustomed to the idea of a pandemic, but also accepted the fact that they will have to live with the virus for a long time.

The transition from pandemic shock and adaptation to the new normal was gradual, perpetuating the social and political spectrum, and especially the economic one. The global business was the first that had to adapt to the new situation and operate in a new paradigm (Battistini, Stoevsky, 2021).

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At the same time, politicians have also adapted to the new pandemic context, and the coronavirus has become a favourite subject of electoral rhetoric. The responsibility or irresponsibility of some of the decision-makers influenced both the infection curve and the economic contraction. But the most important factor in this transformation was the perception and reaction of public opinion.

COVID-19 was certainly a "black swan" that no analyst, no matter how skilled in his field, could predict. And even if one did foresee it, no one could anticipate the profound impact it had on all the social, political and economic corners. It is also obvious that this "black swan" has determined (Pramod, 2021), at least in the short term, a new global order and paradigm, which will determine social, political, geopolitical and economic relations. Globalization, an extremely popular phenomenon in recent decades, was one of the first victims of the pandemic. Critics of globalization were active for several years now and gained a boost in 2020. The pandemic and the measures taken by national or regional authorities raised new questions about nationalism and cooperation with large implications over economic and financial systems.

2. Problem Statement

For many analysts, the reactions of nationalist isolation since the beginning of the pandemic have been a wake-up call to how a withdrawal from multilateralism would threaten the global capacity to take action against the pressing risks facing the world.

The COVID-19 pandemic has shown us that individual well-being is more recently intrinsically linked to the well-being of an individual on the other side of the globe. A virus in one of the many markets of a Chinese city has turned into a global pandemic in just three months. Therefore, governments need to ensure that beyond political resentment, they are able to implement processes that allow for the exchange of information and good practice. At the same time, they must protect the personal data of individuals, which is a great challenge for the future.

China's role in the future configuration of the international system has been strongly influenced by the pandemic. Throughout the crisis, China has set out to play a more prominent role, thus trying to hide its role in triggering the disaster. In recent months, there have been several attempts at cooperation between China and a number of states, whether we are talking about critical equipment, medical collaboration, or the exchange of experience. The Chinese economy appears to be recovering faster than the rest of the economies, so Beijing will play an important role, not only as an anchor for demand for raw materials, but especially as an anchor for liquidity for emerging economies and developing countries. However, China will have to play a positive role in multilateral cooperation formats in order to successfully establish itself as a major power.

The pandemic is likely to play a significantly different role for another major power in the international system. Preliminary data suggest that we will witness a relative decline of the United States and other states' desire to align with Washington on economic issues. At the same time, Brexit and the approach of the future US administration have the capacity to influence the future of globalization.

Technological and cyber partnerships will be very different from geographical partnerships and will relate differently to economic partnerships.

3. Literature review

The spread of COVID-19 was expected to slow the global economy. According to preliminary forecasts of the International Monetary Fund (2020a), the global economy will contract by at least 3 percent. The contraction is expected to reach a higher pace than the 2008-2009 crisis. The report cites a number of reasons for such a development: (i) maintaining social distance with the same perseverance; (ii) significantly low activity during lockdown periods; (iii) very low productivity of companies trying to operate under lockdown conditions.

The economic situation during the pandemic as well as the response of governments have been a concern for many research centres and institutions. The developments are also confirmed by the National Bureau of Economic Research (NBER) in the United States, which in an analysis conducted in mid-2020 reveals the growing interest among profile publications to assess the economic situation generated by the pandemic. Also, a number of 60 publications were launched between March and May 2020 by IZA - Institute of Labour Economics, Germany.

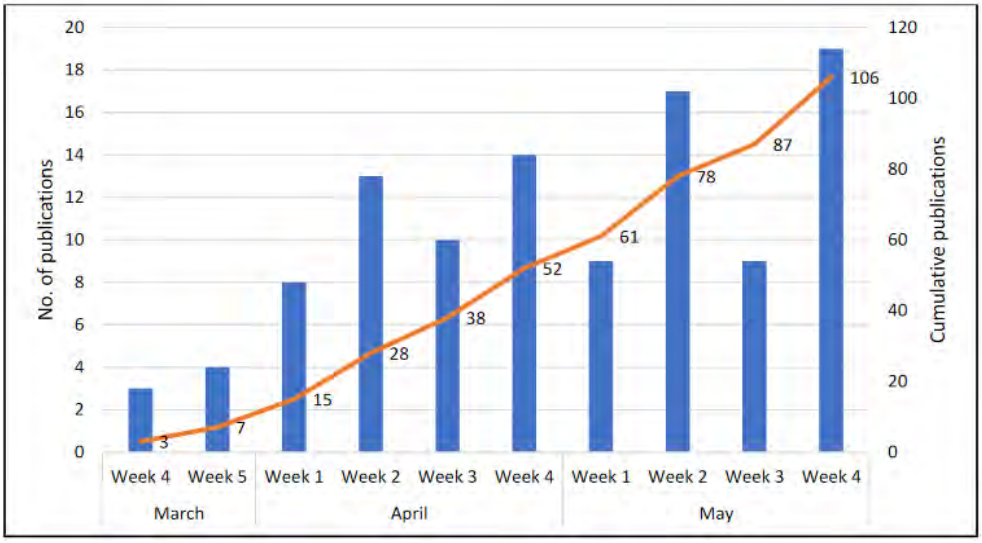


Figure 1. Index NBER on COVID-19 economic publications (March – May 2020)
Source: Created by authors.

4. Research methods

The problems analysed in this research are both pressing and topical, therefore the international experts and academics are making important efforts to keep up the research closely connected to the dynamics of pandemic-related issues. For this

paper I have used the deductive method, while corroborating public data and information provided by European institutions, European Central Bank, World Bank, US government, rating institutions, official reports and reputable research centres.

At the same time, the research represents a qualitative (synoptic) analysis regarding the authorities' reaction to the COVID-19 pandemic, in order to see to what extent the promptness and the trans-regional cooperation ensured an optimal response. The research also aims to highlight the degree to which inappropriate political decisions on one aside, and intrinsic response actions related to the dynamics of international markets, on the other side, have significantly contributed to the alteration of different economic and financial processes.

5. Findings

5.1 The economy at the confluence of the pandemic with politics

The spreading of COVID-19 in the first part of 2020 affected all emerging markets, although some of them have shown more economic resilience than others. It comes in different forms and has been determined or influenced by the form and magnitude of fiscal and monetary incentives, as well as by the different quality of the health systems.

The impact of the pandemic on emerging market businesses is major: we are witnessing the resurgence of obstacles to the free flow of capital, labour, and trade. We are also witnessing a relocation of supply chains, a different reaction to the US-China trade tensions, and an increased risk of public debt among border markets, resulting in an increased risk of default on sovereign debt (Herrera, Konradt, 2020).

It is extremely possible that the sovereign debt default will become more likely, despite the G20 moratorium on interest rates on these debts. Rating agencies threaten to downgrade the rating of those states that do not accept the moratorium on the grounds that taking into account debts to private creditors will increase the overall credit risk (Correia, Luck and Verner, 2020).

If we turn our attention to the individual states that can cause chain reactions, we see that Zambia, Ecuador, or Laos have begun the first steps towards debt restructuring. At the same time, countries such as Senegal and Mongolia, both at risk of accumulating more debt in 2021, will pose a significant risk starting in the last quarter of this year. At the same time, Nigeria, Angola, Tunisia, and Libya are also at risk (Jones, 2020), due to an additional shock on top of the pandemic generated by the dramatic drop in oil prices (See Figure 2).

Specialists expect a slower and longer-term recovery of the emerging markets. At the same time, any scenario is based on the expectation that the second wave of COVID-19 infections in the second half of 2021 will create less damage than the first, as governments and healthcare institutions become more experienced in managing the pandemic and its effects. According to current data and the assumption that the existing trend will continue, Asia will have the fastest recovery due to the faster onset of the pandemic in this region and more efficient institutions in general.

Latin America, on the other hand, is at the other end of the spectrum and expects a slow and difficult recovery due to the poor health care systems and the inadequate response to the pandemic.

In Europe, only one country is at a higher risk in the second half than in the first half of the year. North Macedonia is in a difficult situation due to political disputes. A significant increase in COVID cases last summer has led to massive protests against the apparent Government's mismanagement of the pandemic. The Macedonian parliament recently approved a new governing coalition, after more than a month of political vacuum in the midst of a pandemic.



Figure 2. Oil price evolution during pandemic crisis (USD/barrel)
Source: World Bank oil market overview.

5.2. The impact on foreign exchange markets

The US dollar has suffered the sharpest decline in trading since January 2018. The declining dollar reflects both recent concerns about the potential path to US economic recovery (Garcia-Herrero, 2020), and concerns about the political response to the rise in the number of cases, mainly accentuated by the last elections.

Regardless of the causes, this decline must be seen in the context of the pandemic, political changes, and changing paradigm of the global economy. We must not forget that before the pandemic, the dollar appreciated by more than 30% in nominal terms since 2011.

The explanation for the depreciation of the dollar may come from the fact that many emerging market currencies have lost extremely much during this period. The long-term question is actually different, namely whether the depreciation of these

currencies will be stopped, at least to a certain extent, in order to support those fragile economic activities of these economies (Dahlhaus and Lam, 2019).

Another important question is, if the depreciation of the dollar continues (especially if it persists or even worsens), what will be the economic and political consequences for the emerging states in this case. Current data and economic studies radiographing currency fluctuations and currency exchange show that any short-term gains from the weakening of non-dollar currencies are at most limited. This is especially true in the case of emerging markets.



Figure 3. US dollar Index – Evolution in pandemic context (USD Index/EOD is settled against six component currencies: Euro, Japanese yen, British pound, Canadian dollar, Swedish krona and Swiss franc)
Source: JP Morgan Asset Management statistics (April 2021).

Indeed, instead of using domestic currencies for transactions (local or international), companies in the above-mentioned economies prefer to invoice exports and imports in foreign currencies. The dollar is chosen according to the trading patterns in the region (Putnam, 2020). This new trading pattern leads to what could be a new paradigm for understanding the fluctuations of currencies and exchange markets, as well as economic activities. In the coming years, based on the return of economies to the new normal and businesses adapted to the post-pandemic context, we will be able to see which will become the dominant currency for invoicing and for foreign direct investments.

An important implication of the increase in invoicing in US dollar would translate into a strengthening of the US currency, which may cause a contraction effect on trade, meaning the opposite of the effect expected by traditionalist theory. If we look

at the broader spectrum of exchange rates and how they fluctuate and impact the real economy, it is primarily determined by the way in which companies set their prices in domestic currency. So every time domestic currencies are weakened, the goods and services produced in that economy become cheaper for foreign trading partners.

On the other hand, cheaper prices translate into weaker domestic currency and higher export demand. And, as the economy operates on the basis of supply and demand, the whole phenomenon causes an increase in exports.

Conversely, when a currency depreciates, imports become more expensive in terms of domestic currency, inducing local consumers to import less, substituting as much as possible the purchase of goods and services from abroad with locally produced goods.

Following the same traditionalist rhetoric, we can see how a weaker currency can support the domestic economy by facilitating the growth of net trade. The growth comes following as a double-edged sword, both by inhibiting imports and, especially, by promoting exports. Of course, this is to some extent a reductionist approach, without taking into account the root cause of the weakening of the currency and ignoring the likelihood that the momentum of domestic spending will be fully offset by the damage sustained by the purchasing power caused by the exchange rate effect on inflation. Especially since the impact on the exchange rate can come from several sources, particularly from the existing tensions in the political spectrum.

6. Conclusions

The traditionalist approach needs to be rethought since academic studies and data analysis reveal shortcomings. The first element that shows inconsistency is how most global trade is invoiced in a few international currencies, especially in US dollars, (the euro is also on the rise) and not in domestic currencies. As the studies show, the global economic shock is likely to generate both crises and opportunities for certain global players. China is challenging the United States so that petrodollars are no longer a force, while China is trying to speculate as much as possible on the vulnerability of other players on the global stage to maximize its gains and dominance.

From a financial point of view, the in-depth analysis of the US dollar and Euro dynamics shows three obvious trends that seem to continue at least in the medium term, if not on the long run also. First, the dollar and the euro are increasingly used for billing, even though the share of global trade for the dollar and the euro has declined. Second, the euro is used as a trade currency in parts of Africa. Last but not least, US dollar or euro invoicing states tend to experience a higher exchange rate between their domestic currency and the euro/dollar in terms of import prices.

These exchange rate fluctuations affect the sensitivity of trade volumes. It also appears that the increasing use of the euro has initially reduced the dominance of the dollar globally, while other reserve currencies are playing an increasingly limited role. The dollar depreciation hypothesis is gaining momentum, and the phenomenon

is not purely contextual, so the pandemic has done nothing but accelerate a trend that studies have shown some time before the onset of this health crisis.

When it comes to assessing the broader picture, beyond the current emotions fuelled by the worrying number of daily infections and analysing based on existing empirical evidence, as well as conservative estimates of short-term developments, it can be inferred that the short term economic and political situation is still quite stable and predictable. The danger of a deeper crisis is not completely overcome, but the current financial data reveal a situation that may allow a return to a positive dynamic.

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Empirical Analysis of the Impact of the COVID-19 Pandemic on the Real Estate Industry in Romania

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Abstract

2020 was an atypical, difficult and unusual year. It changed the way we live, work and many of the values we thought were important. Both human health and activity in all industries were influenced in different ways by the pandemic produced by the SARS-CoV-2 virus. The Real Estate Industry was no exception, which was one of the least hit by the dreaded virus and restrictions. Despite the challenges of the COVID-19 epidemic, in Romania, sellers' claims returned to an upward trajectory in the latter part of 2020, which are currently 2.2% higher compared to the beginning of 2020. Demand remained high especially in the second half of the year. Positive annual differences can be observed in all six constantly monitored regional centres, at the top of the ranking being the prices in the city of Cluj-Napoca, while Bucharest is at the other end of the spectrum. The average amount requested for an apartment increased by 1.5% during December, from 1,351 to 1,371 euros per useful square meter. What is the impact of the COVID-12 pandemic on Romania's Real Estate Industry? The research questions of this work are: 1. How affected was this industry in the major cities of Romania in 2020 compared to 2019? How has the average price per square metre evolved during this period? The research will cover the period from January 2019 to December 2020 and will analyse the Real Estate Industry in several Romanian cities.

Keywords: real estate market, real estate properties, real estate index, price, demand.

JEL Classification: R31, R32, D12, E27, O18.

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1. Introduction

The real estate market is a market that is very sensitive to economic fluctuations. For emerging economies, the real estate market is one of the industries with the greatest dynamism in the economy being considered a main vector of development (Hoesli, 2016). In general, periods of economic turmoil generate great opportunities in the real estate market. The year 2020 was a year with great changes in society and economy, a year in which many sectors of activity were affected by the COVID-19 pandemic. However, the real estate market has proven to remain stable and as dynamic as in 2019 (Cuc, 2020).

At European level, specialists expect price corrections, in the sense of a decrease by 5-10% in sales, decreases in rents in the rental segment, as well as a decrease in the volume of transactions. Exceptions are countries such as France, Finland, the Netherlands, the Czech Republic and Turkey, where real estate market specialists predict a 2-5% increase in house prices. In the top of European countries with the most expensive homes in 2019 was France, with 4,016 euro / sqm, followed by Great Britain, with an average price of 3,753 euro / sqm. In the Netherlands, which was in the middle of the ranking, homes were sold in 2019 on average, with 3,405 euros / sqm. According to the data provided by imobiliare.ro website, in Romania, the price per square meter was 1,341 euros. At the level of European capitals, last year homes in Paris recorded the highest price per square meter for sale – 12,910 euros, representing 321% of the average price nationwide. In comparison, in Bucharest, the average price is over 9 times lower, respectively 1,380 euro / sqm.

In Romania, 2020 was an interesting year in the real estate market, both for urban and rural areas, given that the pandemic was the biggest challenge, and many activities quickly moved from the real environment to the online environment. The pandemic has caused a state of concern related to rising unemployment, reduced economic activities, possible declines in incomes, in the event of an economic crisis. The transition to online education has had an impact on the real estate market in major universities, especially in the area of rents. As a result of the pandemic, there is a phenomenon of rising prices for real estate in new neighbourhoods, residential areas, houses and land, homes outside the city. The Romanian real estate market still has a great potential for development (Anica-Popa, 2013) in the context in which it is still the largest property market in Europe. This desire of Romanians to have a property determines on the real estate market an acceleration of the demand. There are more and more Romanians who invest in country houses (holiday homes), houses and the low prices of real estate, as well as high rental yields, compared to the European ones, offer us competitive advantages in investment decisions. Through this paper we aim to contribute to the knowledge of the evolution of the real estate market in Romania in the period 2008-2018 by conducting an empirical analysis of the real estate transactions sector, although the data provided by the National Institute of Statistics (INS) are modest for this sector. We will analyse the number of companies in the sector, the number of employees, turnover and efficiency indicator, and labour productivity in the real estate transactions sector. We will continue the analysis with the period January 2019 - December 2020 to identify how

affected this sector was in the big cities in Romania, respectively Bucharest, Timisoara, Iasi, Cluj-Napoca, Brasov, Constanta, and how the average price per square meter evolved in this period. In order to achieve the objective, we used the database provided by INS, for the period 2008-2018, for the real estate transactions sector, the reports on the evolution of the real estate market in Romania in the period 2018-2020 provided by the imobiliare.ro website. This is the first site in Romania that "offers the most comprehensive, detailed and accurate database with over 6 million property records and 4 million records of site visitors covering a period of 15 years." ”Analize imobiliare.ro” website is the leader in real estate data in Romania. The database has multiple sources that combine private and public data records.

The content of the paper is structured as follows: the first part of the paper presents the literature and the opinions of real estate market specialists regarding the period 2019-2020 and the COVID-19 effects on the global, European and national real estate market, research methodology and research hypotheses, results and discussions on the topics analysed on the real estate market, especially in Romania, so that at the end of the paper we can formulate some conclusions about the analysed topic, but especially the implications and research directions that the authors of this paper propose in the future.

2. Literature Review

The COVID-19 pandemic has stimulated intense efforts among researchers to estimate the likely evolution of the pandemic and its economic and social effects. Several studies have looked for information on past global pandemics, including the Spanish flu pandemic of 1918-1919, which is believed to have infected about 500 million people, or about a third of the world's population, and killed worldwide between 50 and 100 million people (Wheelock, 2020). Today, 1 year and a half after the COVID-19 pandemic, 157 million cases, 3.2 million deaths and 134.3 million recovered cases are registered.

Globally, real estate market researchers have begun building regional COVID-19 risk factors to assess how pandemic stock risk exposure affects their performance. There are substantial differences between stocks in Asia and the US as a result of the pandemic. The most affected sectors in the US are retail and tourism, especially hotels, while in Asia it is the office industry (Milcheva, 2020). The Fama-MacBeth regression shows clear evidence of a low risk effect during the COVID period. Recently, research identifying the effect of proximity (as a distance) to COVID-19 cases on the profitability of real estate firms emerged (Xie, and Milcheva, 2020 and Nuno, 2020). A micro-data set was used to combine extensive data on the geographical footprint of COVID-19 infected patients, i.e. the locations where they lived or visited and the location of Hong Kong real estate holdings. Significantly negative were the effects of the approximation of COVID-19 cases on stock yields. The MSCI World Real Estate Index is a fluctuating market capitalization index consisting of large and medium-sized equity in 23 developed countries (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong,

Ireland), Israel, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom and the USA). All securities in the index are classified in the real estate sector in accordance with the Global Industry Classification Standard (GICS®). The MSCI World Real Estate Index was launched in 1999 on September 15, 1999. The index is designed to monitor the performance of real estate investment trusts (REITs) and companies that invest directly or indirectly in real estate through development, management or ownership, including real estate agents.

At European level, service-oriented economies will be negatively affected in the next period and will have more jobs at risk. Thus, countries such as Greece, Portugal and Spain, which are more dependent on tourism, with a contribution of more than 15% to the GDP, will be more affected by this crisis than the rest of the countries. The current crisis is having side effects in supply chains. Thus, countries that are dependent on foreign trade will be much more adversely affected than other countries. The results suggest that, on average, each additional month of crisis costs 2.5-3% of global GDP.

The real estate market in Romania had been in a mature phase for a long time and would have remained in this state if, worldwide, a crisis caused by the COVID-19 pandemic had not started. The pandemic caused by the Coronavirus has spread beyond the health effects, and it is expected to have an impact with very severe implications in some economies. No one has the power to anticipate the future, and as every ordinary person probably feels, the watchword for the future is uncertainty. With this uncertainty, the housing needs of Romanians in the urban area will not change greatly, but small changes will occur such as for houses in the metropolitan area, in the many localities around major cities in Romania. So the term relocation, sale, acquisition appears more and more frequently (Cuc, 2020). Another change on the real estate market came from the new way of working from home, discovered by Romanians during the isolation period because many companies quickly reoriented and found new ways of working for employees, which did not visit the office for months . Working from home, however, implies the existence of a more complex type of home in terms of functionality, an "upgrade" of the bedroom apartment, with larger spaces, a work room, a kitchen where you can cook and eat in a civilized way, more meals daily with a generous terrace or balcony.

Romania is a somewhat atypical country, with a huge percentage of over 90% homeowners - compared to 60% in Northwestern Europe - and this gives significant comfort to homeowners/tenants who will not immediately have pressure to sell and will allow you to wait a longer time for better days to sell (Buyukhanli, 2019). So, a market downturn due to lack of demand will take time to gather enough price pressure and generate declines. Some real estate specialists in the real estate segment expected a correction of 10% on average, with maximum decreases of 20% in the next 12 months in some particular or niche situations. A real estate index has been calculated in Romania at national level since 2008.

3. Research Methodology and Hypotheses

In order to achieve the objectives of this research, we analysed the ”real estate transactions” sector in the period 2008-2018 in terms of indicators: number of companies, average number of employees, average number of employees, turnover. The average labour productivity indicator was calculated as the ratio between turnover and number of employees. The data analysed over a period of 10 years are provided by the website of the National Institute of Statistics. For the period 2018-2020, we analysed the quarterly reports published by imobiliare.ro, the largest real estate portal in Romania. Both real estate agencies and individuals can publish their offers here. Imobiliare.ro was launched in 2000 and offers specialists information about the demand and supply of housing in Romania. At the end of the research we will analyse the real estate index from 2008-2020. This represents the average of the requested price, expressed in euros per useful square meter for the sold apartments located in apartment blocks, with residential destination, based on the announcements published on the www.imobiliare.ro website by real estate agencies and owners. This index is calculated at national level, but also for the largest cities in Romania: Bucharest, Brasov, Cluj-Napoca, Constanta, Iasi and Timisoara. Despite the very pronounced local character specific to the residential segment, through the developed monitoring system, the real estate index manages to faithfully reproduce the trends of this segment and to impose itself as a reference tool. This instrument does not take into account the variable trading margin from one transaction to another that determines the final price of the transaction.

The research hypotheses we used in our study are:

Hypothesis 1: Is the real estate transaction sector in Romania a stable sector? Hypothesis 2: Was the demand for the acquisition of residential properties in 6 large cities (Bucharest, Timisoara, Iasi, Cluj-Napoca, Brasov, Constanța) in Romania relatively constant in the period 2018-2020?

Hypothesis 3: Is the supply on the real estate market stable in the period 2018-2020 both on the existing and on the new market sector?

Hypothesis 4: Is the annual rate of increase in prices for residential properties at the national level relatively stable in new markets?

Hypothesis 5: Is the evolution of the real estate index a reference tool that reproduces the fidelity of the trends on the residential segment? Based on these hypotheses, the authors of this article set out to make an empirical analysis on the impact of the COVID-19 pandemic on the real estate industry in Romania.

4. Results and Discussions

The analysis of the “Real estate transactions” sector was made starting from indicators such as: human resources, number of companies, turnover, productivity. In this sector of activity there was a stability of the labour force in the period 2008-2018, according to the data provided by the Institute of Statistics.

Hypothesis 1: During the 10 years, the number of employees ranged between 40,000 and 50,000, which means that the sector is relatively new and stable.

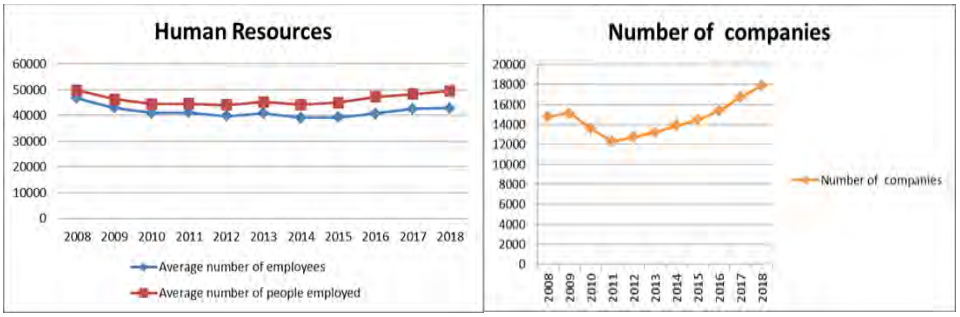


Figure 1. Evolution of the average number of employees and the number of companies in the real estate transactions sector

Source: www.inse.ro.

The number of companies in the real estate transactions sector increased by 3,100, by 21%, respectively in the period 2008-2018. After an unfavourable period affected by the crisis of 2008-2009, when the number of companies in this sector decreased from 15,107 in 2009 to 12,737 in 2012, the number of companies in the real estate sector increased steadily, reaching 17,867in 2018. The turnover of the analysed sector stagnated at around 9 billion lei in the period 2008-2012, after which the indicator had a positive trend, reaching 16.5 billion lei in 2018, which is an increase of 72.3%.

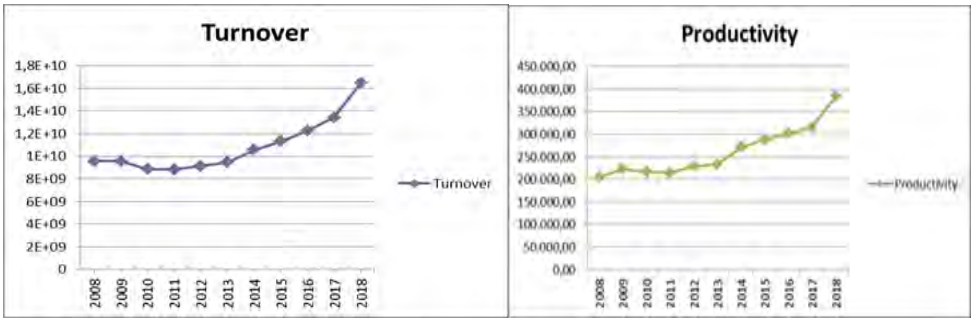


Figure 2. Evolution of turnover and productivity in the real estate transactions sector

Source: www.inse.ro.

Turnover is the indicator that expresses sales volume. The evolution of this indicator shows that the sector is a new one, with many development opportunities in Romania, even in the COVID-19 pandemic that affected the whole world in 2020. Based on the 2 indicators presented above, we calculated labour productivity in the sector "real estate transactions". Figure 2 shows the upward evolution of productivity in the period 2008-2018, which shows the efficiency of work in the analysed sector.

The 2nd hypothesis of our research is related to the analysis of the demand for the acquisition of residential properties in 6 large cities in Romania, in the period 2018-2020. In this sense, we analysed the real estate properties sold at national level, the

balance of loans for housing granted to the population at national level (billion lei), the average net nominal earnings (lei) and the unemployment rate.

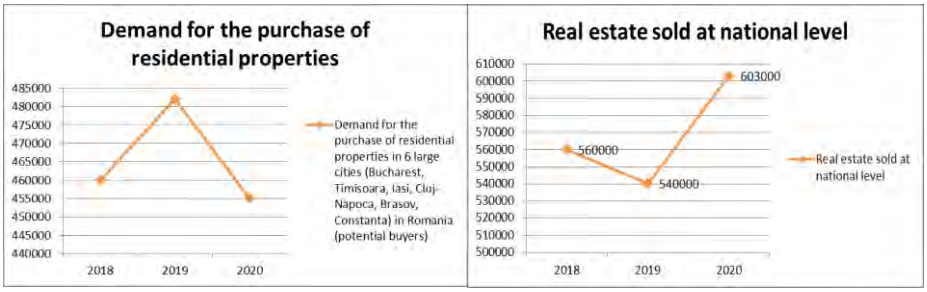


Figure 3. Evolution of demand for residential property in 6 cities in Romania and the number of real estate properties sold nationally in the period 2018-2020
Source: Real estate market report 2018-2020, www.imobiliare.ro.

Demand for the purchase of residential properties in 6 large cities in Romania (potential buyers) increased by 4.7% in 2019 compared to 2018, and decreased by 5.60% in 2020, a year strongly marked by the COVID-19 pandemic, compared to 2019. Real estate sold nationally absolutely decreased by 20,000 (of which 3,000 individual units) in 2019 compared to 2018, respectively by 3.57%, but increased by 63,000 (of which 9,000 were individual units).

In Bucharest, house prices increased during the analysed period. Thus, in December 2020, house prices reached an average of 1,425 euros per useful square meter, up by 1.8% compared to the end of November (when they cost 1,400 euros per square meter). The new apartments, on the other hand, reached, at the end of 2020, a price of 1,481 euros per usable square meter, in the conditions of an annual increase of 1.3% (from 1,462 euros per usable square meter).

In Brasov, an increase of almost half a percentage point. The old housing units reached a listing value of 1,202 euros per useful square meter, in the conditions of an increase of 5.1% in 12 months (from 1,144 euros per square meter). New homes, on the other hand, recorded an increase of 5.7% in the analysed period, from 1,229 to 1,299 euros per square meter.

Cluj-Napoca remained at the same prices. In 2020 too, the capital of Transylvania recorded, among the major regional centres, the most significant margin for increase in apartment prices. The old apartments in the city reached a value of 1,795 euros per square meter, which is equivalent to an increase of 3.2% in 12 months (from 1,739 euros per square meter). On the other hand, the newly built homes registered, in the same period, a significantly higher increase, by 11.5%, from 1,691 to 1,886 euros per square meter.

In Constanta, prices have dropped. The old apartments in Constanta stood at a price level of 1,241 euros per useful square meter at the end of the year, increasing by 2.6% compared to the beginning (when they reached 1,209 euros per square meter). The new homes in the city experienced a similar increase in the analysed period, namely by 2.5%, from 1,212 to 1,242 euros per useful square meter.

Iasi, the biggest increase. In the city located in the northeastern part of the country, the apartments in the old blocks of flats appreciated by 4.9% during 2020, from 1,049 to 1,100 euros per useful square meter. At the same time, housing in new residential complexes recorded an increase of 6.8%, from 1,029 to 1,099 euros per square meter.

Timisoara, an insignificant growth. In the city located on the Bega river, the expectations of apartment sellers increased by 0.4% in December compared to November (from 1,287 to 1,292 euros per useful square meter), while in 12 months, the increase was by 1.5% (from 1,273 euros per useful square meter). With an average price of 1,297 euros per square meter, the old houses in the city are currently 2% more expensive than a year ago (when they cost 1,272 euros per square meter). Newly built apartments, on the other hand, recorded a slight decrease in 12 months, of 0.4% to be exact, from 1,276 to 1,271 euros per useful square meter. In the period 2018-2020, the balance of loans for housing granted to the population at national level increased from 73,5 billion lei in 2018 to 81,20 billion lei in 2019, thus an increase by 10.5% and in 2020 they reached 89,20 billion lei, thus an increase by 9.85%.

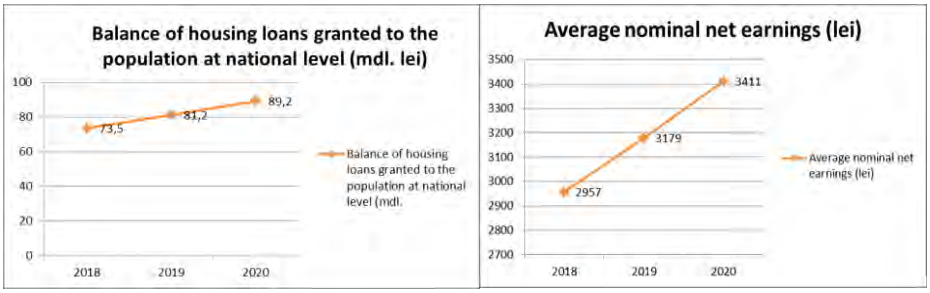


Figure 4. The evolution of the balance of loans for housing granted to the population (billion lei) and the average net nominal earnings in the period 2018-2020

Source: Real estate market report 2018-2020, www.imobiliare.ro.

The average net nominal earnings (lei) increased from 2,957 lei in 2018, to 3,179 lei in 2019, to reach 3,411 lei in 2020. Therefore, we are witnessing an increase in the net nominal salary by 15.35% in 2020, compared to 2018, which correlates positively with the increase in the appetite for loans of Romanians in this period.

The 3rd hypothesis refers to the supply on the real estate market. The supply in 2019 compared to 2018 registered an increase of 3,000 old real estate properties, while, in 2020, compared to 2019, we are witnessing a decrease of this supply category, by 6.82%. The effects of the COVID-19 pandemic on the real estate supply are beginning to be felt. In addition, the rental supply registered an increase by 32.14% on the existing (old) market, also as an effect of the pandemic, when the population quickly adapted to work from home, home schooling etc.

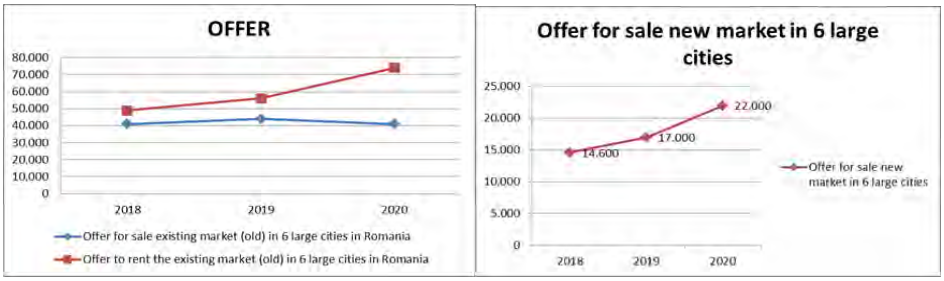


Figure 5. The evolution of the real estate offer in the period 2018-2020
Source: Real estate market report 2018-2020, www.imobiliare.ro.

The supply for sale on the new market increased by 29.41% in 2020 compared to 2019, also as a result of the pandemic, the newly built homes at national level registering an increase of 3,000 properties, respectively by 4.48%. Also as a result of the pandemic and the restrictions imposed by the authorities, at the level of construction permits there was a decrease of 4.76% in 2020 compared to 2019.

Hypothesis 4: Is the annual rate of increase in prices for residential properties at the national level relatively stable in new markets?



Figure 6. The evolution of prices and costs in the period 2018-2020
Source: Real estate market report 2018-2020, www.imobiliare.ro.

The analysis of market data provided by real estate reports for 2018-2019 shows that the annual rate of increase in prices for residential property nationwide decreased by 3.90% in 2020 compared to 2019 as a result of the pandemic of COVID-19, with a greater focus on the existing market (-8.5%), while the new market experienced a slight increase of 1.2%. The cost index of constructions for residential buildings at national level increased constantly in the analysed period, from 122% in 2018, to 134%, in 2019 and 136.40% in 2020, as it results from Figure 6.

Hypothesis 5: Is the evolution of the real estate index a reference tool that reproduces the fidelity of the trends on the residential segment? In order to provide a more accurate estimate, the real estate index is based on a calculation algorithm that allows the elimination of unrepresentative offers from the market by: identifying and eliminating duplicate offers and those with wrong prices or areas, respectively establishing the weights of new apartments/old apartments, of those with one, two,

three, four or more rooms, respectively. Figure 7 shows the evolution of the real estate index in 2008, strongly affected by the crisis of 2007 with negative effects felt for 2-3 years, when prices fell significantly. A period of stability follows during 2010-2015 in all major cities in Romania, after which the leader (Cluj) stands out, which at the beginning of 2021 dominates by far the Romanian real estate market, followed by Bucharest, Timisoara, Constanta and Brasov.



Figure 7. The evolution of the real estate index in the period 2008-2021
Source: https://www.imobiliare.ro/indicele-imobiliare-ro.

These are clear indications that the Romanian population has become aware of the long-term danger of this epidemic, in conjunction with homework and home schooling.

5. Conclusions

Considering the need to connect the results of our research with the analyses of specialists performed in the last 20 years at global, European and national level, we appreciate that our study demonstrates that the real estate market in Romania is in a mature phase and will remain in this state if, worldwide, there is no crisis caused by the COVID-19 pandemic that extends over a period of more than 2 years.

According to the first hypothesis, it can be appreciated that the "real estate transactions" sector is a new sector, growing with many development opportunities in Romania, even in the period 2018-2020, as we argued in the results and discussions section of this paper.

Based on the arguments presented above, it can be concluded that, hypothesis 2, according to which, the demand for the acquisition of residential properties in 6 large cities (Bucharest, Timisoara, Iasi, Cluj-Napoca, Brasov, Constanta) in Romania was relatively constant in period 2018-2020, is confirmed.

It can be concluded that the supply on the real estate market is a stable one in the period 2018-2020 both on the existing and on the new market sector, according to hypothesis 3.

According to hypothesis 4, the annual growth rate of prices for residential properties nationwide is relatively stable in new markets in 2018-2020.

Hypothesis 5, according to which the evolution of the real estate index is an important reference tool on the real estate market in Romania, positively correlated with the fidelity of the trends on the residential segment in the capital, but also in the big cities of the country.

Based on these hypotheses, the authors of this article conducted an empirical analysis on the impact of the COVID-19 pandemic on the real estate industry in Romania, which has been little affected to date. Most regional centres in the country have experienced, in the last year, decreases in the average price charged for the apartment segment. Cluj-Napoca and Iasi have the most significant increases in demand in the last 5 years. These are clear indications that the Romanian population has become aware of the long-term danger of this epidemic, and they have quickly combined professional life with family life and online education.

In the opinion of the authors, the limits of this research come from the area of real estate index calculation. This index has a pronounced residential character in Romania. The office, commercial and industrial segments are less developed in the composition of the real estate index. In addition, the index is calculated at national level, but also for the largest cities in Romania (Bucharest, Brașov, Cluj-Napoca, Constanța, Iași and Timișoara). Medium and small cities do not have a representative share in the composition of this index.

The migration of the population from the crowded and noisy urban areas to the periphery, smaller and quiet cities or even to the rural area is a new topic to be researched in a future paper.

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Carbon Border Adjustment Mechanism and the Protection of the Competitiveness of EU Aluminium Producers

Vlad EPURESCU[1]

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Abstract

The European Union's decision makers placed in their agendas a very sensitive subject which was repeatedly tried in the past, that is to impose a carbon border tax. The advocates of such a measure use a mix of arguments, combining the urgency of fighting climate change through public policies with the need to protect the competitiveness of strategic sectors of the EU industry affected by the carbon leakage phenomenon. One of these sectors is that of aluminium production, which has felt the mounting pressure of the costs of indirect emissions reflected by the rising price of electricity in the last three years. Based on public statements and on studies prepared by both government institutions and academics, it seems that the EU wants to implement a carbon border adjustment mechanism (CBAM), and this should be in line with the WTO rules. Using a machine learning program, the author conducted a quantitative content analysis of the financial reports during 2018-2020 of five European aluminium producers. The author drew a number of conclusions regarding the correlations between the price increases of ETS certificates and the price of electricity reflected in the cost of production. Considering that CBAM will, in fact, be an extension of the ETS system applied to imported aluminium products, the author proposed a formula to measure the effectiveness of CBAM in order to achieve the proposed objectives of the European Parliament and European Commission, namely to protect the competitiveness of European companies and, at the same time, to help reduce the direct and indirect carbon emissions from the production process. The author considered the insufficiency of some of the necessary data, the still existing statistical asymmetries and some recent developments that may influence the results he has reached. Some of these methodological asymmetries will be addressed in future research.

Keywords: Carbon Border Tax Adjustment, ETS, electricity price, aluminium production.

JEL Classification: F10, F14, F18.

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1. Introduction

Achieving sustainable economic development in a carbon neutral economy is a paramount objective for the European Union. The most important stepstone in this new paradigm is to preserve the most relevant competitive advantages of some strategic economic sectors while mitigating the climate change effects. One of these competitive advantages is referring to production costs.

EU wants to be a global leader in the fight against climate change effects and, in order to achieve this objective, it is trying to shape a green narrative based on a carbon-free economic development.

This fundamental redesign is based on a net-zero primary energy mix and the main tool to achieve this is the EU-ETS system. This regulatory and institutional tool is a cap-on-trade-mechanism applied to several economic sectors, such as the power and heat generation, energy-intensive activities, and the commercial aviation.

The ETS system is applied on two levels. The first level is that of direct GHG emission. Direct GHG emissions are generated on site during the production process. The economic sectors identified by the EC as being exposed to the risk of carbon leakage receive 100% of their allocation for free. Regarding the indirect emissions, these sectors benefit from a 75% offset, which does not apply to non-efficient technologies. Indirect GHG emissions are a consequence of the production processes but occur initially at sources owned by another entity. This is the case of type of purchased electricity used in the production process, generated by coal or natural gas fired power plants.

The EU-ETS system is designed to persuade the economic operators to improve their energy efficiency or to use new technologies with a lower impact on the environmental equilibriums. In some very specific circumstances, if the carbon emissions produced exceed the cap specified by the EU-ETS Directive, they must buy auctioned ETS certificates to offset the amount of their carbon footprint.

In order to accelerate the transition to a carbon neutral economy, the European Union has reduced the number of ETS certificates that are allocated free of charge. This has led to a steep rise of the ETS prices. The industrial associations indicated that this exponential increase of the ETS prices was reflected in a sustained increase in production costs, especially for the amount of the purchased power needed for the industrial processes. The energy-intensive sectors are the most exposed in this situation, because they lose their competitive advantage through the cost of production to the detriment of non-EU competitors from economic blocs that do not have an environmental policy as consistent as the European Union. One of these sectors is that of aluminium production.

To mitigate this impact, aluminium producers have little room for manoeuvre on the short term. China, however, which has the largest aluminium production capacity in the world (approximately 56%), exploits that competitive advantage by supplying coal-based electricity to their local aluminium producers at a much lower price compared to the power prices in EU (European Commission 2020, 2021).

This vicious circle triggered the carbon leakage phenomenon, with industrial islands forming outside the EU. This means a shift in production capacities to geographical areas with not too many rigorous climate targets. To mitigate these risks, the European Commission (EC) and the European Parliament (EP) consider that the optimal option is to implement a carbon border adjustment mechanism (CBAM).

Some Member States, especially France, have had similar initiatives in the past, but were abandoned either due to lack of political consensus or because there was not enough administrative will to impose such a system as long as the ETS price was not punitive enough for polluting production capacities. In this specific stage, the experts from the EC took the lead, followed shortly by the representatives of the EP. A first draft of the CBAM should be released, according to public statements, in the first half of the year.

2. Problem Statement

The author started the analysis considering the hypothesis that the design of the CBAM will be, in fact, an extension of the ETS system in order to tax the carbon content of the same types of imported products that are currently produced in the European Union and fall under this mechanism. In order to be applied, a CBAM must find a common ground for international trade flows, competitiveness, and climate objectives.

Otherwise, as Aichele and Felbermayr (2015) mentioned, a CBAM might have the air of green protectionism and could be costly if noncommittedly countries resort to retaliation.

2.1 Recent Attempt to Implement a Carbon Border Tax in the EU

The need to tax the carbon content of imported goods foreshadowed fourteen years ago, when the contracting parties to the Kyoto Agreement feared that their energy-intensive industries would lose their competitive advantages to the detriment of the industries located in countries not participating to this Agreement (McLure, 2010). In the EU, the frontrunner of such a mechanism has been France, since 2009, but the idea of a carbon border tax faced opposition from the EC and from some other EU member countries such as Sweden which, at that time, held the EU's six-month rotating presidency. Sweden claimed that such a measure will put in danger the chances of reaching a consensus at COP15 – the summit, in the end, was a failure – and EC President Jose Manuel Barroso emphasized that this initiative will not work without the backing of USA and China (Euractiv, 2009). The environment commissioner Stavros Dimas was not too thrilled, either, with the carbon border tax, who mentioned that this is not a proper tool to determine the developing nations to embark on a climate deal (Chaffin and Harvey, 2009).

2.2 Some Relevant Differences between a Carbon Border Tax and a Carbon Border Adjustment Mechanism

Although EU decision makers initially used the term of carbon border tax (Leyen, 2019), recently, the European Council President mentioned the term of carbon border adjusted mechanism. EU officials stated that either the carbon border tax or the CBAM should be in line with an improved emission trading system (Claire and Louise, 2020). This might mean that the EU-ETS system will be applied to imported products to the same extent as it is applied to products made in EU (Aylor et al., 2020).

However, there are some differences between a carbon border tax and a carbon border adjustment mechanism. In order to explain how a carbon border tax would be operationalized, this levy was compared with the value added tax framework (Stiglitz, 2009). From another methodological perspective, Metcalf E. Gilbert (2014) emphasizes that there is a suggestive difference between a carbon border tax and a carbon border adjustment mechanism based on a cap-and-trade-system, which is similar to the EU-ETS model. In the case of a carbon border tax, the tax code will be used, either the origin-based or the destination-based. The focus will be either where the carbon emissions are produced or where the consumption of the imported goods with carbon content takes place. In the case of the VAT system model, adjustments can be obtained with tax credits or with the help of the exchange rate. However, the difference between similar products with different levels of carbon content, in such a system, cannot be adjusted like this. This is the reason why a carbon adjustment mechanism based on a cap-and-trade-system might work better, due to the fact that imports might benefit from a number of free allowances and a cap on emissions, while exports might benefit from using rebates to adjust these kinds of differences. The disadvantage of a carbon border tax would be that it will trigger significant compliance and administrative costs and will not be cost-effective (McLure, 2010). However, Dong and Walley (2012) consider that, while a CBAM has a positive effect on carbon leakage by reducing the imports with carbon content of committed countries, the negative effect is that countries that are not committed to such a mechanism will see their imports soar.

2.3 Key Takeaways for a Carbon Border Adjustment Mechanism to Be Compatible with the Regulatory Conduct of WTO

European Union decision makers expressed commitment that the framework of the CBAM will be created considering the regulatory framework of the international trading system. According to GATT (1970), a border adjustment mechanism regards "*any fiscal measures which put into effect, in whole or in part, the destination principle*".

The reference articles setting out the implementation framework for the border tax adjustments, according to GATT (1970), are Articles II and III for imports and Article XVI for exports, mentioning that other relevant articles include the

regulations of Articles I, VI and VII. This means that border tax adjustments are used to help balance national tax differences in order to level the fiscal playing field (Regina et al. 2008). Therefore, it is worth highlighting that, in order to be compatible with the WTO rules, a border adjustment mechanism must be applied in the same manner for similar domestic and imported products (Cendra, 2006), meaning that foreign goods must be treated no less favourably than comparable domestic goods (Monjon and Quirion, 2011), taking into account the principle of general most favoured nation treatment. In order to design a comprehensive CBAM framework, in 2020 EC launched a public consultation, emphasising the scope of the CBAM: taxing imports will reflect their carbon content in an accurate way and will curb the risk of carbon leakage, while the CBAM will act as an alternative system for the one of the ETS allowances granted today to energy-intensive producers given the rising costs of the power used in production due to the CO_2 ETS certificates price increases (European Commission, 2020). If maintained, this approach suggested by the EC raises some debatable topics. Due to the fact that the fiscal measures are not collected at the frontier, GATT mentions that it should be used the notion of "tax adjustments applied to goods entering into international trade" (General Agreement on Tariffs and Trade, 1970).

Relative to the current multilateral trade conduct, this attitude means that CBAM might not apply at the upstream level because, it might violate the principle of territoriality. CBAM might be applied at the downstream level, which means that imports of fossil energy carriers will not fall under the CBAM but, instead, the imported products obtained using oil, coal or natural gas will be charged for their carbon content. Another already fierce debate will arise regarding whether power imports will be treated as a good or as a service. EU Economy Commissioner Paolo Gentiloni said that electricity imports should be subject to any such mechanism (Hall, 2020). However, a working paper published by the experts from the WTO highlights the ambivalent manner in which power falls under the international trade rules. One might say that, due to its specificity and its dependence upon grids, power is less a good and more a service, or at least a combination between both. Some authors (Cottier et al., 2010) emphasise that the lack of a clear definition of energy in terms of goods and services, services relating to energy are not properly defined under the General Agreement of Trade in Services (GATS). For example, under the EU-ETS system, it is not the electricity per se that falls under the regulations, but the stationary production capacities based on coal, natural gas or heavy oil are the ones that must buy ETS certificates.

Regarding the arguments that support the need to implement a CBAM, there is a difference of approach between the European Commission and the European Parliament. While the Commission highlights the issue of carbon leakage, the European Parliament highlights the need to protect the environment, citing Article XX of the GATT (Geier, 2020). A similar approach can be found in a resolution approved by the EP in regard to the need of having a WTO-compatible EU carbon border adjustment mechanism. The text of this resolution states that "*EU had substantially reduced its domestic GHG emissions, the GHG emissions embedded*

in imports to the EU have been constantly rising, thereby undermining the Union's efforts to reduce its global GHG footprint" (European Parliament, 2021). However, invoking environmental aspects to target the carbon leakage problem is questioned in the literature, because Article XX cannot be invoked to offset competitive disadvantages for domestic industry (Monjon and Quirion, 2011). Moreover, Article 3.5 of the United Nations Framework Convention on Climate Change (1992) also states that measures taken to fight the climate change effects should not disguise restrictions on international trade.

3. Research Questions/Aims of the Research

The hypothesis from which the author started in this study was that there is a correlation between the electricity prices, CO_2 emissions and the price of ETS certificates. As the price of ETS certificates increased rapidly between 2018 and 2020, the dynamics of these correlations began to fundamentally influence the competitiveness of some EU key heavy industry, which led decision makers to propose the introduction of a CBAM. In this landscape, one of the impacted economic sectors is the aluminium production. Thus, the questions from which the author started to conduct the research are:

1. How much does the electricity price in the production cost weight?
2. What measures have been taken to alleviate the rising electricity prices?
3. How can the CBAM ensure a balance between the climate agenda and the competitiveness objectives of the European producers if this mechanism depends on the constant increase of ETS prices and on the reduction of the number of free allowances for direct and indirect emissions?

4. Research Methods

The author used open coding in Atlast.ti – a machine learning programme – to conduct a quantitative analysis of the content published by five EU aluminium producing companies in their financial reports. The selected companies are Alro (Romania - Eastern Europe), Amag (Austria - Central Europe), Impol (Poland - Central Europe), Constellium (France - Western Europe) and Trimet (Germany - Western Europe). The monitored period was 2018-2020.

The aim of this quantitative analysis was to evaluate how companies relate to the increase of the electricity prices, respectively of the ETS certificates, and what the decisions were taken in order to mitigate these market effects. The author used for open coding the following keywords: 1. Energy efficiency; 2. CO_2 emissions; 3. Solar; 4. Wind; 5. Hydropower; 6. Coal; 7. Natural gas; 8. Market context. Based on the findings, the author made a concept mapping for a graphical representation of the identified concepts. Based on the quantitative analysis and starting from the hypothesis that the border carbon adjustment mechanism will be applied to imported products in the same way ETS works in the internal market, the author proposed a formula to measure the effectiveness of CBAM.

5. Findings

Following the quantitative analysis, the author identified several answers addressed in the beginning of the research.

Regarding the share in the operational costs of the price of purchased electricity, it seems that it can reach up to 40%. The most exposed European companies to power price fluctuations seem to be those that purchase electricity from the day ahead market and operate in regions where the energy mix also includes coal production, as is the case of Romania.

These companies will be the most impacted by the rising ETS prices, a necessary requirement for CBAM to be effective in shifting the trend from imports of high to low-carbon products.

With regard to the measures taken to combat rising electricity prices, the monitored companies have taken or benefited from several measures:

- One of them was included in the support scheme provided by the European Commission to benefit from up to 75% of the free allowances related to the acquisition of ETS certificates for indirect emissions.
- Some of them have built their own electricity production capacities using solar energy to power aluminium production processes.
- Some of them purchase mainly green energy from the market, using forward contracts, while others benefit from fixed price commitments specified in long-term contracts.
- All of them have implemented energy efficiency solutions to reduce energy consumption.
- Some of them digitized their operations and invested in R&D.

Based on the findings, the author made a concept mapping to graphically illustrate the importance of the measures taken by the EU companies to protect their competitiveness and the effectiveness of these measures (Figure 1).

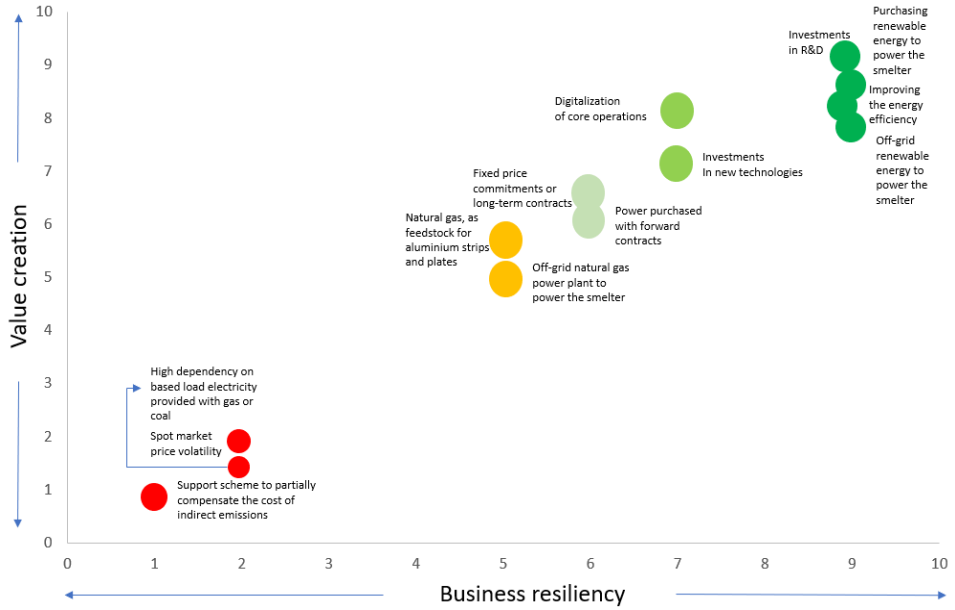
In order for CBAM to ensure the same level of playing field between EU aluminium producers and non-EU companies that sell in the European single market aluminium products with a high degree of carbon content, the price of ETS certificates needs to rise. However, to be effective, the CBAM must meet two objectives: 1. achieving the goals of the climate agenda and 2. protecting the competitiveness of EU producers.

In this regard, the author developed a calculation formula by which the effectiveness of CBAM can be tested.

$$CBAM\ x\frac{(DCO2e + ICO2e)}{Qh} \geq ETS\ x\frac{(DCO2e + ICO2e)}{Qh}$$

where:
CBAM = ETS
DCO2e = direct CO2 emissions
ICO2e = indirect CO2 emissions
Qh = number of hours of production cycles per ton of production

Figure 1. Concept mapping to illustrate the measures taken by the EU aluminium producers to mitigate the rise of electricity and ETS prices



Source: Author's own compilation.

6. Conclusions

The present research is limited to analysing the performance of only five companies in a single heavy industry production sector. The author intends to expand this research in the near future to capture all production sectors covered by the ETS and to include a significantly larger number of companies.

In the present research, the author wanted to capture the link between competitiveness and rising electricity prices, directly influenced in some areas by rising carbon prices, and the measures taken by companies to protect themselves against this phenomenon.

In theory, CBAM has two objectives: to persuade aluminium producers to use low or zero carbon energy sources during the production process and to preserve the competitiveness of EU aluminium producers. In order for CBAM to be effective in achieving the first objective, in a comparative view, the threshold of ETS certificates should substantially exceed the current level, in order to stimulate both European and non-European producers to become more efficient and use a zero-carbon source of energy during production.

Regarding the second objective, the production cost, which is influenced by the rising prices of ETS certificates, it will have to increase at least more slowly in the case of the EU producers compared with their non-EU competitors.

In the power market, both European and Chinese, there is a combination of two major technologies, one based on fossil resources and the other on zero-carbon

energy resources. On a free market, renewables (solar and wind) have zero marginal costs, while coal, nuclear and gas have positive marginal costs, reflected in the purchase price of the fuel. However, when renewable energy does not have a high penetration into the power mix, the market price signal is given by the marginal cost of the fossil fuel-based power. If the price of ETS increases and the fossil fuel power production retains its role to ensure the balance between supply and demand, the price of the other energy sources will increase as well, aligning with the price of coal and/or natural gas. As there is currently not a commercially available zero-carbon electricity storage solution (green hydrogen or zero-emission battery storage), the price of power will be influenced by the evolution of ETS price, which will be reflected in the production cost of the EU aluminium producers that are connected to the grid, due to a higher price for the amount of electricity purchased.

For example, while in 2018 the price on the European power market for non-household consumers was EUR 152 / MWh (Eurostat, 2018), in China, the lowest price for coal-based power was recorded in Xinjiang Province (EUR 27.41/MWh), while the highest price was recorded in Hunan (EUR 58.48/MWh). The average yearly price for power, in China, was EUR 43.85 /MWh (S&P Global Platts, 2019). China's aluminium production capacity is located in the regions of Xinjiang, Qinghai, Gansu, Heinan and Shandong, very close to power coal-based production. Many of the smelters are integrated with coal-fired generation power plants, not being fed from the grid, which means that the price paid is not even close to the one set by the free market mechanisms in Europe and represents, in the best case scenario, a technological cost. European production, during the production process of primary aluminium, uses mainly hydropower energy, bought from the free market, and uses natural gas in order to fuel the process of obtaining superior aluminium products. For the EU producers, the solutions to mitigate the power price increases are the related to investments in creating their own zero-carbon electricity generation capacities, in order to be as little as possible reliant from the power grid and to increase the energy efficiency of the smelters (World Aluminium, 2020) in a much more rapid pace compared to their non-EU competitors.

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The Role of Foreign Direct Investments in the Georgian Economy: Statistical Analyses

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Abstract

The issue of foreign direct investment is quite actual nowadays. It is under the attention of international and national scientists and is well-reviewed in different types of literature. Foreign direct investments have a high importance in restoring, renewing and creating economy in the country. Of course, this is crucial for Georgia as well. The main aim of the work will be to cut out and analyse the factors that influence the inflow of investments and to determine their effects on the Georgian economy. In this paper, we will consider and analyse the effect of foreign direct investment on the major economic sectors of the country. Due to the great importance of foreign investment, it is necessary for the country to create the right conditions to attract foreign investors. The main goal of the paper will be to study the trends of attracting foreign investment in Georgia and to get a closer look at the current situation and challenges in this regard.

Keywords: foreign direct investment, pandemic, economic growth, economy of Georgia.

JEL Classification: E22, F31, F43, O52.

1. Introduction

The influence of foreign direct investments in the economy of receiver countries is quite significant. In most cases they impact positively the economic development. They are essential for transition and developing economies, because the majority of the population has low income and they cannot afford to save it and it cannot stimulate economic growth, therefore these types of countries need foreign capital that creates new opportunities and new products on the bases of additional foreign financial resources. Foreign direct investment has long been seen – and strongly recommended – as a key instrument in the process of transforming the former

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centrally planned economies and stimulates economic growth in the transition period. FDI are an important factor for the economic growth of the host-country, while according to research of Jalena Tast, there is a positive correlation between FDI and the economic growth (Tast, 2014). Foreign capital inflows have been of crucial importance for the initiation and acceleration of the transition processes in the countries of the South Caucasus (Penev, 2008).

The present analysis focuses on the importance and problems of attracting foreign direct investment and their impact on economic growth of Georgia, as well as the impact of the pandemic on these factors.

The authors of the article tried to answer the following questions:

How dynamic are the trends in the inflow of foreign investment in the South Caucasus region?

Which countries are actively investing in the Georgian economy?

Which is the most popular investment sector in the country?

How does the pandemic affect foreign direct investment in Georgia?

How is it possible to improve the inflow of foreign direct investment in Georgia?

Georgia's business development especially needs to attract foreign direct investment, which will solve significant problems within the country. It will help to develop modern technology and science in the Georgian economy.

2. Literature Review

The authors used articles of Georgian and foreign scientists. The following literature is used by the authors:

Dzhvarsheishvili, S. (2018). "Regional Peculiarities of Foreign Direct Investments". This paper attempts to examine regional peculiarities of foreign direct investments in Georgia using data for the period 2013-2017.

Dzhvarsheishvili, S., Gogrichiani, U. (2021). Economic policy of Georgia in the face of challenges related to the global pandemic. This paper examines the impact of the COVID-19 crisis on the current important social-economic processes of the country, to generalize them in order to form proper opinions.

Erkomaishvili, G., Kobalava, M., Lazariashvili, T., Damenia, N. (2018). Stimulating Policy for Attracting Foreign Direct Investment in Georgia. The current state of foreign direct investment (FDI) in Georgia is analysed and evaluated in the paper, and the existing legislative background for regulating investments and stimulating policies to attract investments is shown.

Jeffrey, D. S., Felipe, B. L. (1993). Prentice Hall; Macroeconomics in the global economy; pp 547-587. This book, particularly chapter 18, explains a relationship between FDI and economic growth.

Namchavadze, B. (2017). How Successful Is Georgia In Attracting Foreign Direct Investment? This article discusses investment climate of Georgia in period of time 1996-2017.

Penev, S. (2008). Investment Climate and Foreign Direct Investment Trends in the South Caucasus and Central Asia. This paper analyses and compares investment climates and trends in the South Caucasus and Central Asia.

Silagadze, A., Zubiashvili, T. (2016). Foreign direct investment in Georgia. This article considered foreign direct investment after the collapse of the Soviet Union in post-soviet countries.

Tast, J. (2014). The Role of FDI in the Economic Development of Transition Countries. The paper considered the relationship between the FDI and the economic growth in transition countries.

In this article we used official statistical data for the 2013-2020 period, which were taken from the web sites of the National Statistics Office of Georgia; National Bank of Georgia; National tourism administration and the World Bank. Online periodicals were also used from the site agenda.ge.

3. Methodology

The following research methods have been used by the authors: statistical analysis, comparative, quantitative and qualitative analysis.

4. Results and their Interpretation

Foreign direct investment is quite relevant for the whole world. It also plays an important role in the Georgian economy. It is a cornerstone of economic growth and development of the country, as evidenced by many scientists, who see a positive correlation between the FDI and economic growth (Sachs, Larrain, 1993), but there are others who see its negative aspects as well. For example, foreign corporations that have competitive advantages can threat national companies in the local markets, therefore the concerns should be to protect national interests (Erkomaishvili et al., 2018).

The South Caucasus region has strong development potential based on the availability of energy and natural resources, an educated work force, technological infrastructure and strategic geographic location. After the collapse of the former Soviet Union, foreign direct investment in South Caucasus region played a significant role in the development of a market economy in the countries. (Silagadze, Zubiashvili, 2016).

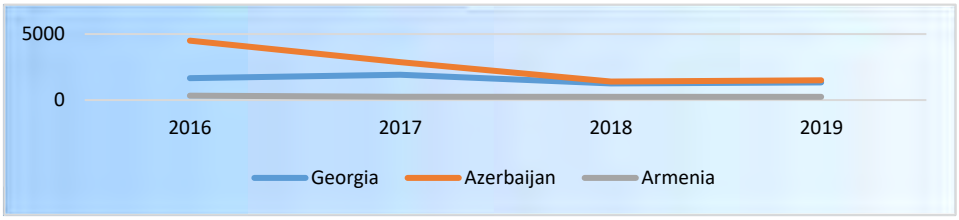


Figure 1. Foreign direct investment in the South Caucasus region, net inflows (Million US$)

Source: Created by the authors based on data from World Bank www.worldbank.org.

As shown in Figure 1, in recent years FDI in South Caucasus region has decreased. According to this chart we could mention that, fuel and energy resources

of the rich country of Azerbaijan attracted much more FDI than other countries in region; on the second place is Georgia and on the third place is Armenia. Since February 2020, due to pandemic all the countries from this region have undergone extremely difficult conditions.

Georgia has a low level of saving and, therefore, for such type of countries foreign direct investment is the main factor that contributes to the recovery and development of economies (Namchavadze, 2017).

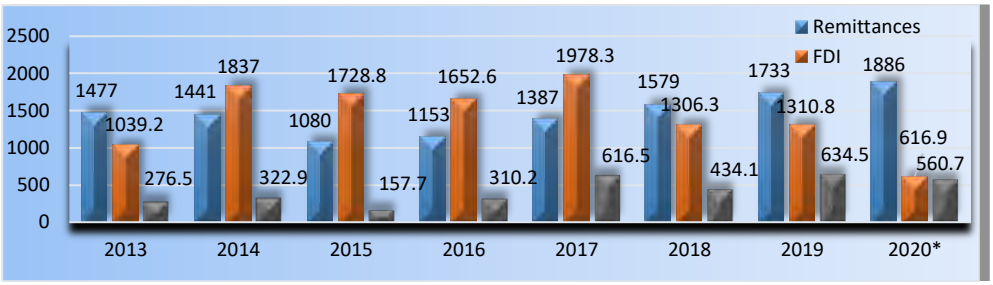


Figure 2. Dynamics of FDI, remittances and reinvestments in Georgia (Million US Dollars).

Source: Created by the authors based on data from the National Statistics Office of Georgia and from National Bank of Georgia www.nbg.gov.ge, www.geostat.ge.

The Figure 2 shows that foreign direct investment in Georgia in 2014 in comparison with 2013 raised significantly by 77 percent. The main reason for an increase of the FDI is preparations for the European youth summer Olympic festival, which was held in Tbilisi, between 26 July and 1 August 2015 (Agenda.ge, 2014). At the same time, the share of reinvestment amounted to 18 % of the total FDI and the share of remittances was 8.2 % of Georgia's GDP with half of these remittances in 2014 coming from Russia (National Bank of Georgia; 2014). Georgia attracted a historical amount of FDI in 2017 – 1978.3 million USD, and the increase in investment was largely related to the construction of the new Shah Deniz 2 gas pipeline (Policy brief, 2017). The top three direct investor countries in 2017 were Azerbaijan – 23.3 %, the Netherlands – 17.9 % and United Kingdom – 12.6 % (National Statistics Office of Georgia, 2017). The share of reinvestment also raised in 2017 and it amounted to 31% of the total FDI. Increasing the share of reinvestment indicates investors' trust. The share of remittances increased, and in 2017 it was 8.5 % of Georgia's GDP with most of the remittances in this year coming from Russia, Italy and USA (National Bank of Georgia, 2017). Foreign direct investment in Georgia decreased by 35% in 2018 compared to the same period in 2017. We can see that the main investment comes to pipelines and infrastructural project developments, but such type of projects were not envisaged in this year and, therefore, foreign direct investments decreased. The share of FDI in 2018 by major foreign direct investor countries is as follows: Azerbaijan - 19.5 %; United Kingdom -16.5 % and the Netherlands -13.6 % (National Statistics Office of Georgia, 2018). In February 2020 the pandemic started in Georgia. The pandemic was the main factor of the decline in FDI, which has decreased in comparison with the year 2019. Despite

this fact, we could see that reinvestments in 2020 amounted to 91 % of the total FDI. Since 2015 remittances have been increasing, and in 2020 they reached a record level. It indicates that emigrants from Georgia have overcome the crisis stage and continue to transfer much more money to their families in Georgia; the share of remittances was 1 % of Georgia's GDP and most of these remittances in 2020 come from Russia – 23.4 %, Italy – 19.1 % and Greece – 14 % (National Bank of Georgia, 2017).

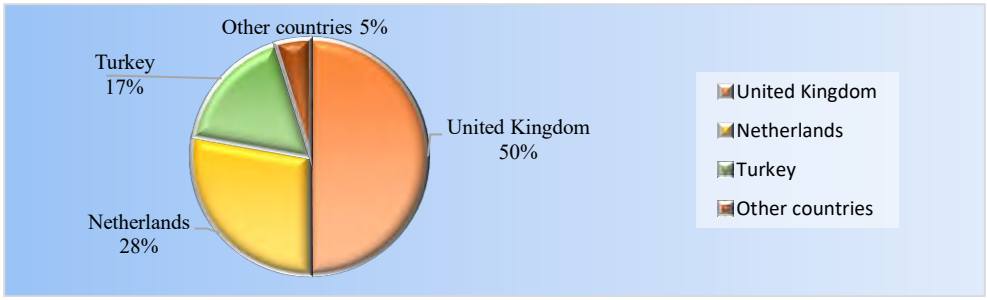


Figure 3. Top direct investor countries in 2020, preliminary data (%)
Source: Created by the authors based on data from the National Statistics Office of Georgia www.geostat.ge.

As shown in Figure 3, foreign direct investments (FDI) in Georgia in 2020 amounted to USD 616.9 million, of which more than 50 % came from the Europe. The largest amount of FDI came from the United Kingdom – USD 307.8 million, followed by the Netherlands – USD 172.1 million and on the third place is Turkey – USD 108.1 million. Nowadays the United Kingdom is a leading investor nation in Georgia. For example, one representative British company is "Schroders", which is operating in 27 countries across Europe, the Americas, Asia and the Middle East (Agenda.ge, 2017).

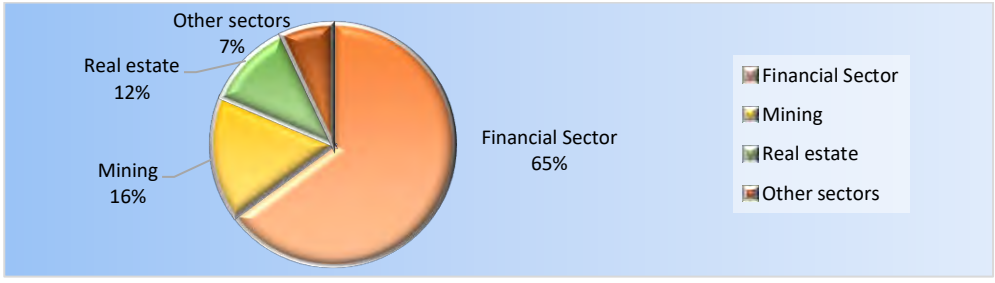


Figure 4. Foreign direct investment by major economic sectors in 2020, preliminary data
Source: Created by the authors based on data from the National Statistics Office of Georgia www.geostat.ge.

According to the data from the National Statistics Office of Georgia, we can see in Figure 4 that the financial sector received the largest share of FDI – USD

400.3 million, followed by mining – USD 101.5 million and real estate – USD 71.8 million;

Let us consider regional peculiarities of foreign direct investment in Georgia. As evidence from Figure 5 below, a significant amount of foreign direct investment in 2020 came in Tbilisi and Adjara. The share of Tbilisi in total investment is still high, of about 44.2 %, while in Adjara it is 21.2 % and in Qvemo Qartli 13.4 %. Small amounts of foreign direct investment feature in the following regions: Guria, Racha-Lechkhumi and Kvemo Svaneti. This shows that the capital of Georgia and Adjara are the most attractive regions for foreign investors, compared to other regions (Dzhvarsheishvili, Gogrichiani, 2021).

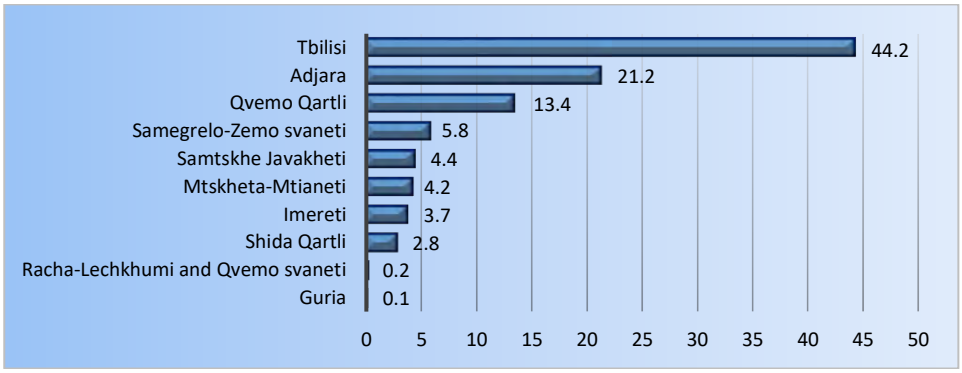


Figure 5. Foreign Direct Investment by Regions in 2020 (%)

Source: Created by the authors based on data from the National Statistics Office of Georgia, www.geostat.ge.

As we have already mentioned, the volume of FDI in 2020 is relatively low, therefore, the state should pay more attention to this problem and should try to attract foreign investors to invest more, not only in Tbilisi and Adjara, but in other regions of Georgia as well, which in turn will create new jobs and reduce unemployment (Dzhvarsheishvili, 2018).

Table 1. Gross Domestic product of Georgia

Indicators	2017	2018	2019	2020
GDP at current prices (mil. US Dollars)	16.2	17.6	17.5	15.9
GDP per capita (US Dollars)	4 358.5	4 722.0	4 696.2	4274.6
Real GDP growth rate (%)	4.8	4.8	5.0	-6.2

Source: Created by the authors based on data from the National Statistics Office of Georgia, www.geostat.ge.

The spread of the coronavirus disease had a considerable negative impact on the economy of Georgia and increased the poverty level and economic imbalance. During the pandemic, Georgia got not only a low volume of FDI, but it also experienced a high unemployment rate – 18.5 %, with the pandemic playing the main role in the declining of the GDP, which has fallen up to 11 %, as can be seen in Table 1.

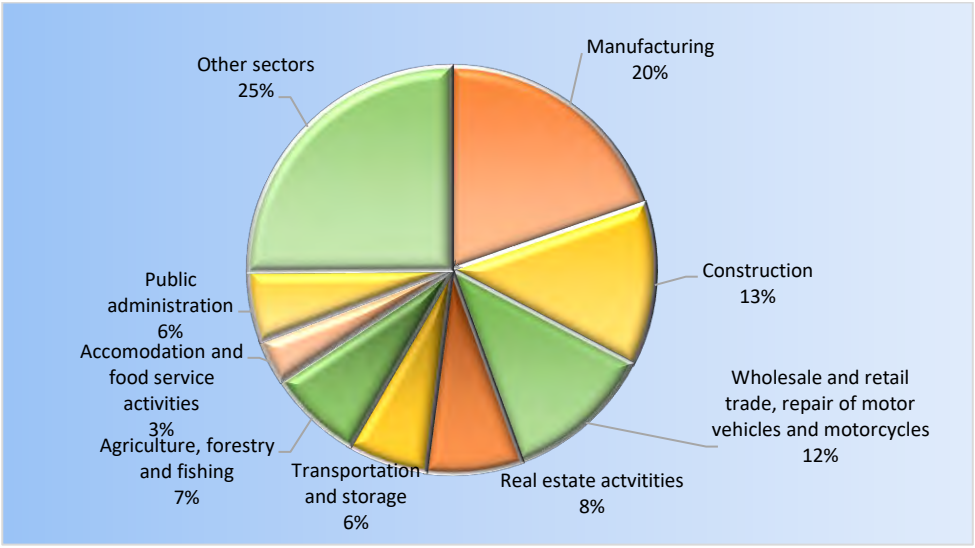


Figure 6. Structure of gross output in 2020, preliminary data (%).
Source: Created by the authors based on data from the National Statistics Office of Georgia, www.geostat.ge.

According to the preliminary data from the National Statistics Office of Georgia, Figure 6, we can see that the manufacturing sector, construction and wholesale and retail trade, repair of motor vehicles and motorcycles in 2020 have the largest share of gross output.

Let us consider the tourism sector, which is very important for the Georgian economy. Previous years' tourism sector was the main source of inflow of foreign currency in Georgia. But since 26 February 2020, tourism in the region has almost come to a temporary standstill as a result of the coronavirus pandemic, as can be seen in the Table 2 below.

Table 2. International Travel Receipts (Thousands of USD)

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	1410902	1719700	1787140	1868479	2110709	2704340	3222074	3268654	427699
I.Q	235930	302818	315461	305180	342590	425673	550730	578442	427699
II.Q	330827	426525	429690	409470	497441	629854	809969	877626	-
III.Q	487721	604202	649775	742849	813161	1078274	1210561	1126771	-
IV. Q	356423	386156	392215	410979	457517	570538	650814	685814	-

Source: Created by the authors based on data from the Georgian National Tourism Administration www.gnta.ge (updated 23.12.2020).

Tourism represented significant shares of gross domestic product (GDP) and employment of Georgia. The Coronavirus pandemic hit tourism industry the most. (Dzhvarsheishvili, Gogrichiani, 2021). Therefore, when demand decreases in the services industry, other sectors also decrease their production, since their product is now less needed as an intermediate good. However, there is also a huge opportunity for the government to refresh the Georgian economy in the future. On 19th November 2020, the Government of Georgia approved the state program to support foreign investment projects in economic sectors such as: production of electrical and electronic engineering products, manufacture of aircraft parts and components, manufacture of vehicles and equipment, as well as their parts, export of business services, developing warehouses and logistic centres, aircraft repair and maintenance. The goal of the program is to promote the growth of foreign direct investments in the country, the inflow of technology and the creation of new jobs (The state program–FDI grant, 2020). According to "Doing Business 2020" report of the World Bank, ease of doing business ranks Georgia on the 7th position (Economy profile Georgia, Doing Business, 2020), as can be seen in Figure 7 below.

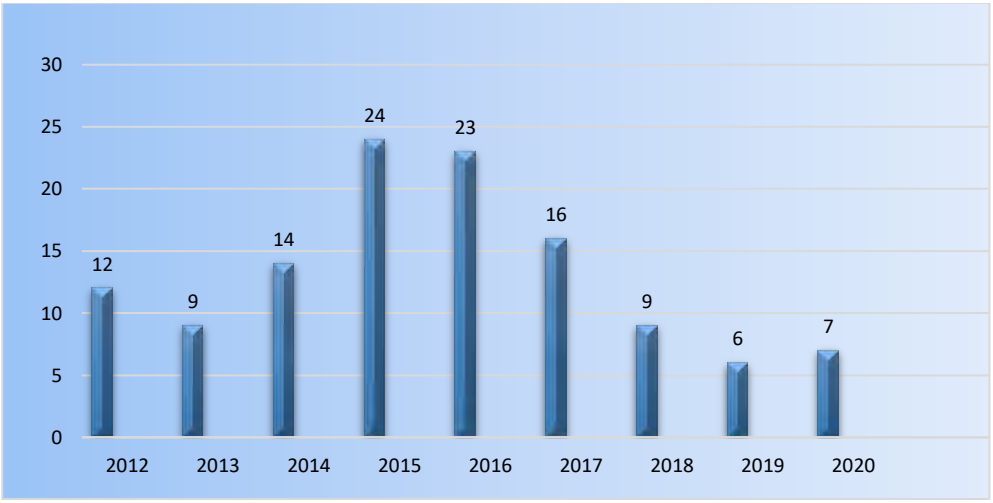


Figure 7. Position of Georgia in the doing business ranking

Source: Created by the authors based on data from World Bank www.worldbank.org.

The Georgian government strives to make the country's business environment favourable for foreign investors and entrepreneurs. It is important to attract more foreign investors to invest in the country's economy, to pay more attention to promote local production, which will enable the government to reduce the unemployment rate.

The light at the end of the dark virus tunnel is now shining and Georgia starts COVID-19 Vaccine rollout, which will help to start a new life and create new economy not only in Georgia, but in the whole world.

Conclusion

Georgia has a suitable geographical location. Investments in Georgia were mostly made due to its location as a transit country for energy transportation, therefore since 2013, investments rose and reached their maximum point in 2017. During the pandemic in 2020, the amount of FDI significantly decreased. It was practically impossible to attract more investors to Georgia during this difficult time. Last year, countries from Europe: United Kingdom and the Netherlands actively invested in Georgia. The most popular investment sectors during the pandemic were the financial and mining sectors. Based on the above mentioned facts, we may conclude that Georgia has had a very difficult time. The pandemic has had a big negative influence on Georgia's economy: people lost their jobs, the unemployment rate has increased, FDI and GDP have significantly decreased. But in spite of negative facts, one can also notice positive things, like increase of remittances in 2020, when they reached their maximum level. Remittances are also a vital source for the Georgian economy. The share of reinvestments in the total FDI has also increased. It is also crucial that the Georgian government tries to attract foreign investors, through carrying out some interesting programs that will contribute to attract foreign capital, which is very necessary and essential to create more new jobs at the highest pay and perspective level. Attracting investors is just the first step that is necessary to create successful FDI strategy, but convincing investors to stay in Georgia and persuading them to expand their operations are not less important. Everything that we have mentioned above is the key factor of achieving goals for economic development of our country.

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Research on Policies and Mechanisms that can Streamline the Process of Transition to Green Energy and Achieve Climate Change-Related Targets

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Abstract

Global warming or climate change is a dangerous phenomenon that humanity is currently facing and it is a direct result of increasing greenhouse gas emissions. The European Union, as a global leader in combating climate change, has an important role to play in international efforts to reduce CO_2 emissions as well as to reduce the impact of climate change, by creating and implementing mechanisms aimed to deliver climate change direction by establishing a path towards climate neutrality and supporting this transition to green energy.

The objective of this paper is to identify and analyse the main tools that can streamline the process of transition to green energy and achieve climate targets associated with climate change.

In this sense, the comparative analysis is used, which aims to understand the need to implement these international mechanisms, being based on the presentation of strategies that can be used to stimulate the global transition to a neutral economy in terms of climate impact.

Keywords: green energy, climate change, climate neutrality.

JEL Classification: Q49.

1. Introduction

Global warming or changing climatic conditions is a dangerous phenomenon that humanity is currently facing and is a direct result of increasing greenhouse gas emissions. (Cerovic Smolovic et al., 2020). Without making clear concrete measures to reduce these emissions, it is estimated that average temperatures worldwide will increase by 1.8 degrees to 4 degrees Celsius by 2100, bringing with it substantial changes in climate and extreme weather events, heat waves, frequent rainfall in a significantly increased volume (Esperanza Mata Perez et al., 2019).

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The European Union, as a global leader in combating climate change, has taken various actions aimed at reducing and even stopping greenhouse gas emissions. These actions derive mainly from the obligations assumed by the 1992 United Nation Convention, the 1997 Kyoto Protocol, as well as by the Paris Agreement adopted at the Paris Climate Conference in December 2015 and ratified on 5 October 2015. These approaches are joined by the environmental protection policy established by the 1997 Amsterdam Treaty and reconfirmed by the 2007 Lisbon Treaty, as well as other international mechanisms, including: the Modernization Fund, Innovation Fund and Just Transition Fund and the European Green Deal. The European Union declared that it will become the first economic neutral zone in terms of climate by 2050.

The Paris Agreement established ambitious global targets for climate change mitigation and set a long term goal in line with the goal of keeping global average temperatures rise well below 2 degrees Celsius above preindustrial levels and to maximize efforts to limit temperature rise to 1.5 degrees Celsius above pre-industrial levels.

Therefore, "the European Union can only succeed if its efforts stimulate the global transition to a fair, climate-neutral, resource-efficient and circular economy", which is one of the most important policy objectives of the Union.

2. Analysis of the Literature on Policies and Mechanisms for Promoting Green Energy

The analysis of this paper presents several international mechanisms whose main purpose is to combat climate change by reducing and even stopping greenhouse gas emissions. In the present study we aimed to analyse these mechanisms by presenting legislation and relevant EU policies, which must relate to the objective of neutrality climate and under conditions of fair competition, so as to meet the objective set out by the Union and maintain an equal importance on emissions as well as on removals of greenhouse gases to reach zero net emissions by 2050. The principal mechanisms promoted by the EU in order to reduce CO_2 emissions and to reduce the impact of climate change, which are analysed in this material are: the Modernization Fund, the Innovation Fund, Just Transition Fund and the European Green Deal.

A. Modernisation Fund

Modernization Fund is a program that aims at helping the transition to climate neutrality of 10 low income EU countries, thus contributing to the modernisation of their energy systems and improving energy efficiency.

Its main role is to help the European Union in the process of transition to climate neutrality, so that the beneficiary states succeed in meeting their targets in this regard. At the same time, the Modernisation Fund will involve both the modernisation of energy networks and the promotion of exchange of good practices between the beneficiary Member States. Last but not least, it will help

finance renewable energy sources and help improve Member States' national energy systems by turning them into greener and more economical ones.

This mechanism supports substantial investments to help achieve the Union 's climate and energy change objectives, both set by the Paris Agreement and by other legislative measures. Most of the resources of the Modernization Fund (at least 70%) must be invested in priority areas such as the creation and use of electricity from renewable sources, but also in areas aimed at improving energy efficiency (including areas such as transport, buildings, agriculture, waste and excluding energy efficiency related to the generation of energy using solid fossil fuels). Consideration is also given to how to store energy, modernise energy networks and also support a fair transition in the carbon-dependent regions of the beneficiary Member States.

However, the modernisation fund cannot finance investments involving solid fossil fuels, unless such investments relate to efficient and sustainable heating in less developed countries such as Bulgaria or Romania.

In order to fulfil its role, the Modernisation Fund will work with the responsibility of the beneficiaries Member States and will collaborate with the European Investment Bank (EIB), Investment Committee of and the European Commission.

An important role in achieving European Union’s goals on climate and improving energy efficiency is played by the European Investment Bank, which has several functions, such as auctioning of allowances ensuring the resources of the Modernisation Fund. In this respect, such certificates shall be auctioned in annual volumes equal split between 2021 and 2030, and the auction shall be conducted in accordance with the Auction Regulation. Other tasks assigned to the European Investment Bank are also the confirmation of whether an investment is a priority or not, the achievement of financial and technical diligence of non-priority investments, including an assessment of expected emission reductions.

To this end, the Joint Procurement Agreement for procuring common auction platforms was signed by the European Commission and 24 Member States in 2011 and 2012 (including Romania), except Germany, Poland and United Kingdom, with the aim of establishing the practical arrangements governing the joint procurement procedure, as governed by Article 125 letter c of the Implementing Rules.

At the same time, according to the Article 4 para. (2) letter a of the aforementioned normative act, the Commission is authorized by the participating states to act on their behalf and to carry out the common public procurement procedure, including the award and signing of the resulting contract. The escrow agreement and the custody agreement are an integral prat of this contract, according to Article 46 of Regulation (EU) 1031/2010.

The settlement of these auctions is according to the Directive 2003/87/EC of the European Parliament and of the Council. According to the Final Report on the Analysis of the use of auctioning revenues by Member States, the auction means the method of allocating allowances under phase 3 of the European Union's

emissions trading scheme, and is considered the simplest and most efficient way to do so in the absence of other factors.

Compared to the quotas auctioned in 2013 (over 40%), their proportion is expected to increase by the end of 2020, making the auctioning revenues of these certificates a continuous source of revenue for Member States (as noted on the European Commission website).

Table 1. Modernisation Fund Financing

Modernisation Fund	Member States	Share	Allowances	Transfers	Total
2% of cap	Bulgaria	5.84%	16,095,825	0	16,095,825
	Czechia	15.59%	42,968,135	150,184,557	193,152,692
	Estonia	2.78%	7,662,054	0	7,662,054
	Croatia	3.14%	8,654,262	5,978,852	14,633,114
	Latvia	1.44%	3,968,834	0	3,968,834
	Lithuania	2.57%	7,083,265	8,696,818	15,780,083
	Hungary	7.12%	19,623,677	0	19,623,677
	Poland	43.41%	119,643,793	0	119,643,793
	Romania	11.98%	33,018,490	167,747,579	200,766,069
	Slovakia	6.13%	16,895,104	35,011,645	51,906,749
	Total	100.00%	275,613,439	367,619,451	643,232,890

Source: https://ec.europa.eu/clima/policies/budget/modernisation-fund_en.

B. The Innovation Fund

The Innovation Fund is one of the largest funding programs in the world, which aims at creating technologies to reduce carbon emissions and will provide around € 10 billion over the period 2020-2030 with the aim of both decarbonising Europe and fostering its transition to climate neutrality.

The Innovation Fund helps create jobs, stimulate both growth and investment in clean energy and it will be funded from the auction of 450 million certificates (allowances) from 2020 to 2030, as well as any unused funds from the NER300 program provided by the EU Emissions Trading Scheme (EU ETS), which is set up by art. 10a para. (8) of the ETS Directive to support innovative low carbon technologies in the period 2021-2030. Detailed rules are established in the Commission Delegated Regulation (EU) 2019/8566.

It should be mentioned that for both the Modernisation Fund and the Innovation Fund the quotas are to be auctioned on the common auction platform, in accordance with Article 10 d paragraph 3 of Directive 2003/87 / EC (ETS) and article 20 paragraph (1) of the Rules from Delegated Regulation (EU) 2019/8566. In order for the rules on security and custody to be applicable to the common auction platform and for the bidding of certificates for the Modernization Fund and the Innovation Fund, the Escrow Agreement and the Custody Agreement should enter into force in respect of the shares to be auctioned for these two mechanisms.

C. The Just Transition Fund

The Just Transition Mechanism (JTM) ensures that the transition to a climate-neutral economy takes place in a fair way, leaving no one behind, with the most

disadvantaged regions receiving financial support of 150 billion in the period 2021-2027. It is intended to mitigate the socio-climatic impact of the transition by gradually eliminating their dependence on fossil fuels, including coal, peat and oil shale or high-emission industrial processes.

At the same time, the most relevant instruments of this mechanism, in particular the European Regional Development Fund ("ERDF") and the European Social Fund Plus ("ESF +"), will complement the European Union's contribution from the allocated budget perspective.

The Just Transition Fund ("FTJ") is one of the most important part of the Just Transition Mechanism and aims to reduce the negative impact of the climate transition by directly contributing to financing and modernizing the local economy and improving employment.

In this context, a specific scheme for a just transition within InvestEU will join the support provided by this Fund, mainly with a view to broadening the scope of investments, such as investments in renewable energy and green energy programs. Following this plan, it will also be possible to provide financial benefits for energy and transport infrastructure, but also for projects on the decarbonisation process, economic diversification of regions and social infrastructure.

Finally, a Platform for a Just Transition should be established, so as to allow for bilateral and multilateral exchanges of experience on lessons learned and good practice in all affected sectors.

The Just Transition Mechanism will include a sound governance framework focused on territorial transition plans, which sets out the territories in which the Fund will be used and which will be identified through a dialogue with the Commission. These plans will set out the challenges in each territory, as well as the development needs, but also the objectives to be met by 2030.

Member States can gain access by preparing equitable territorial transition plans covering the period up to 2030, which should also set out the most effective ways to best address social, economic and environmental challenges (Soeiro, Ferreira Dias, 2020).

D. European Green Plan - European Green Deal

Given the need to rethink energy supply policies in all political and industrial sectors, the European Commission has created the European Green Deal. The aim of this Pact is to create a fair and fast growing society, with a modern, competitive and resource-efficient economy, where by 2050 there will be no net greenhouse gas emissions.

Achieving this goal will need the implementation of measures in all areas of the economy, as well as the involvement of all consumers by offering them certain benefits. An important role will be played by renewable energy sources, which involves increasing offshore wind energy production. A good way of integrating the renewable energy sources and energy efficiency will contribute to succeed in a low emission of CO2. The rapid decline of renewable energy sources coupled with improved policy development that favours this goal, has already reduced the

impact of the use of renewable energy sources on household energy bills (Montanarella, Panagos, 2021).

Investment will thus be made in the development of technologies that are to generate low-carbon sustainable, product and service , and to reduce waste significantly.

With more than a quarter of its carbon emissions growing, the transport sector plays an important role in the objectives of the European Green Pact, ensuring climate neutrality, by reducing emissions from transport by 90% by 2050 (Christodoulou et al., 2019).

The design of green buildings, as well as the modernisation of the existing ones so that they become more energy efficient, the effective afforestation, conservation and restoration of forests in Europe, as well as an environment free of toxic substances are other main objectives of the new EU strategy.

The InvestEU Fund will help combat climate change, with at least 30% of its revenues allocated in this direction. A major collaboration will be made with the European Investment Bank Group (EIB), the national banks and other international financial institutions. In this sense, European Investment Bank aims at doubling its climate objective from 25% to 50% by 2025, thus becoming the first European climate bank.

The private sector will play an important role in financing the transition to a green economy, with the aim of directing financial sources to green investment and creating opportunities to help identify sustainable and credible investments.

By mobilising national public and private investment, Horizon Europe plays an important role in achieving these goals by funding at least 35% of the budget for new solutions to climate change.

With a budget set at 95.5 billion Euro (including EUR 5.4 billion of the next generation of the EU - Recovery Fund), all the available tools in this mechanism will support the necessary research and innovation efforts. In this sense, four "Green Pact missions" will take part to major upgrades in areas such as climate change adaptation, oceans, cities and soil.

However, in order to achieve the mandatory goal of obtaining climate neutrality by 2050, the Proposal of the Regulation of the European Parliament and of the Council creates a framework for achieving climate neutrality goal and amending Regulation (EU) 2018/1999, also known as the European Law of climate change, which sets the conditions for the irreversible and progressive reduction of greenhouse gas emissions and for increasing uptake by natural or other absorbents in the Union.

E. Similarities and Differences between These Mechanisms

Even if the purpose of all of these Mechanisms is to combat the climate change by reducing and even stopping greenhouse gas emissions, there are some differences in how they manage to implement their strategies and reach this purpose, as presented in the following table:

Table 2. Differences between these mechanisms

	Modernisation Fund	**Innovation Fund**	**Just Transition Fund**	**European Green Deal**
Objective	transition to climate neutrality of 10 low income EU countries, thus contributing to the modernisation of their energy systems and improving energy efficiency.	both decarbonising Europe and fostering its transition to climate neutrality	reduce the negative impact of the climate transition by directly contributing to financing and modernizing the local economy and improving employment. for work	create a fair and fast growing society, with a modern, competitive and resource-efficient economy, where there will be no net greenhouse gas emissions.by 2050
Implementation Term	2021 - 2030	2020 - 2030	2021 - 2027	Until 2050
Who is responsible	Beneficiary State	European Commission, Brussels	Beneficiary State	European Commission, Brussels
Financing	Up to €14 billion	Around € 10 billion	Up to € 150 billion	€ 95.5 billion
Funding procedure	- Selection of investments by states; - Their submission to the EIB; - Confirmation; - Either Disbursement decision (priority investment) or recommendation for financing (non-priority).	Two methods: Large scale and small scale as described in the diagram below Beneficiaries are selected by: - effectiveness of greenhouse gas emissions avoidance; - degree of innovation; - project maturity; - scalability; - cost efficiency.	territorial Plans of just transition (territories in which the transition fund will be used) determine challenges of each area, the need of development and the goals to be met in 2030	- clean, safe and affordable energy; - mobilising industry for a clean and circular economy; - construction and renovation of energy efficient buildings; - conservation and restoration of ecosystems and biodiversity; - accelerating the transition to sustainable and smart mobility.

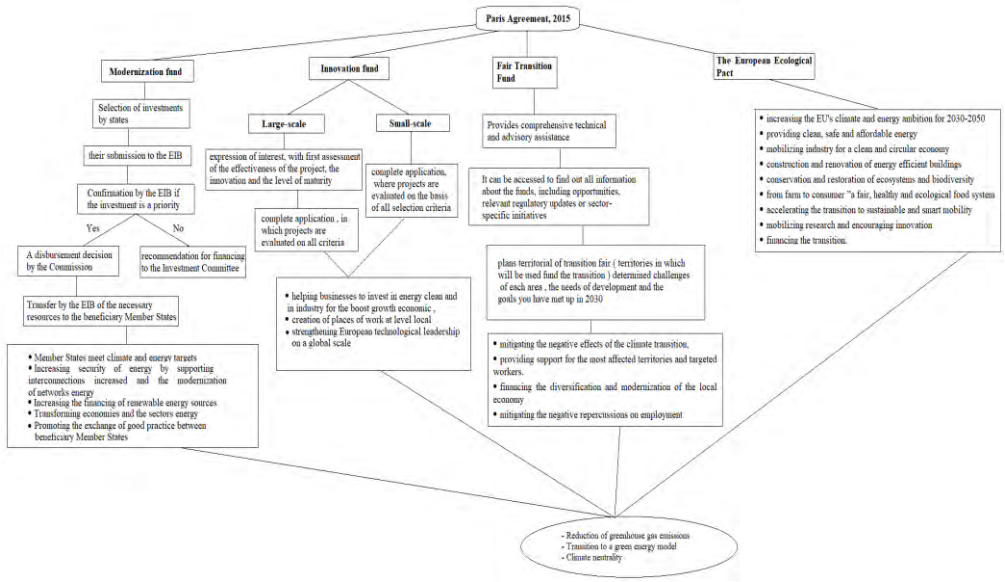
Source: Created by authors.

3. Methodology

The aim of this paper is focused on the comparative analysis of several international mechanisms whose main purpose is to combat climate change by reducing and even stopping greenhouse gas emissions. The research method is the comparative analysis aimed at understanding the need to implement these mechanisms, being based on the presentation of strategies that can be used to stimulate the global transition to a fair, climate-neutral and efficient world.

In carrying out the work, a documentation activity was carried out in the field of instruments and mechanisms of the EU, which have as objective the reduction of CO2 emissions and implicitly of the effects of climate change. I studied the specialized literature related to the possibility of facilitating the transition to green pattern energy, by taking into account the practical tools for analysing them, but also all legislative measures taken at the Community level. In this regard, the paper aims to present, in the most efficient way possible, the steps to be followed and the mechanisms that can be used to develop innovative solutions on decarbonising Europe and supporting its transition to climate neutrality.

Figure 1. Implementation of the mechanisms analysed in this article



Source: Created by authors.

4. Discussions and Results

The need for a neutral society from the climate point of view and keeping the rate of global warming below 1.5 °C above pre-industrial levels have been embraced by all EU countries, who are aware of the risks to which citizens are exposed, but also of the impact that these climate changes have on both the health and food system, but also on the ecosystems and biodiversity of the planet. In this sense, in order to limit the rise in temperature, it is mandatory to achieve climate neutrality in all sectors of the economy, neutrality that can only be achieved by implementing relevant legislative and budgetary measures on climate and environment and reforming investment policies in agriculture, trade, transport, energy and infrastructure.

While the goal behind the achievement and implementation of these mechanisms is the same, namely achieving climate neutrality, each tool discussed in this article comes with its own element of novelty, to which is added a complete and accurate strategy to support the achievement of the initial goal. In this regard, unlike the Modernisation Fund, which has as main objective the support for the transition to climate neutrality of 10 low income states of the European Union, including Romania, the Innovation Fund and the Just Transition Fund contribute to the financing and modernisation of the local economy and to the job creation. the European Green Deal is a culmination of these mechanisms and aims to rethink all ideas on energy supply in the political and industrial sectors in order to obtain the ultimate goal, which is climate neutrality.

Therefore, the creation of these mechanisms and the allocation of financial resources reaffirm the Commission's goal to make Europe, by 2050, the first climate-neutral continent.

An example of this is the Modernisation Fund whose total revenues could be around 14 billion Euro in 2021-2030, depending on the price of carbon, 2% of which will be distributed in form of allowances to the beneficiary Member States.

Therefore, to achieve its objective, the European Union established a framework of comprehensive policies to limit CO_2 emissions, as the process of modernisation and transformation of the economy in order to achieve neutrality has already started. Results are encouraging as it is "on track to meet its 20% emissions reduction target for 2020", as noted on the European Commission website:

- EU greenhouse gas emissions were reduced by 24% between 1990 and 2019, while the economy grew by about 60% over the same period.
- Power plants experienced the most significant decline in emissions from stationary installations in all countries, decreasing by 9.1% between 2018 and 2019. A year earlier, these emissions had decreased slightly.
- In the field of aviation, there has been an increase of CO2 emissions, by 2% more than in the previous year. Emissions constantly increasing, and aviation emissions are being taken into account by the directive only in terms of flights from the European Economic Area (EEA) (Christodoulou et al., 2019).

A new target has been set by the European Union, which wants to reduce carbon dioxide emissions by at least 40% by 2030 - as part of the EU's 2030 climate and energy framework and the current contribution to the Paris Agreement.

Effective implementation of the national energy and climate plans presented to the Commission in 2019-2020 could lead to reductions in the EU27 greenhouse gas reduction by 41% in 2030 compared to 1990, and this can be done by introducing and complying with national energy and climate plans. Their correct application can even lead to a reduction of about 45% in greenhouse gas emissions.

5. Conclusions

The world is evolving and the emerging trend is towards green. The European Union implemented new mechanisms to help adapt to changes in climate and energy, which turned the European Union into a fair and prosperous society, with a modern, competitive and efficient from the point of view on resource use, in which there should be no net greenhouse gas emissions. These initiatives are important, as climate change will keep on having an essential impact in our continent, despite mitigation efforts. It is crucial to keep up efforts to fight against climate change, build resilience, prevent and prepare.

The transition to a green Europe can only be successful if it is carried out in a fair and favourable way for the implementation of these strategies. Managing these objectives will help changing the terms of living standards, people's perception towards the implementation and observance of these mechanisms. Depending on the circumstances, the level of development, but also the capacity to react, each state will start this path of transition from another point, the achievement and

implementation of these objectives being mandatory to be strongly analysed and thought of at the national level.

Climate change adaptation work will continue to have a powerful impact on public and private investment, including nature-inspired solutions and will allow for the creation of schemes to carry out ongoing monitoring of greenhouse gas emissions of the progress made by the European Union and the Member States regarding the objectives set by these mechanisms.

It can be clearly seen that the evolution is a productive one, and that the norms implemented at European level, through concerns related to the environment and climate, are crucial in the decision-making by the member states regarding their implementation. From the data we have presented, it can also be seen that the European Union is more determined than ever to promote and help regulate and implement the mechanisms at national level. It is worth mentioning that Romania, especially through the Modernisation Fund, is on the list of states that can benefit from funds in reaching, in a fast and unequivocal manner, the established climate targets. Only in such a way can the transition to a climate-neutral economy be made without leaving anyone behind.

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Cost Considerations and Economic Impact of Cancer on Labour Markets

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Abstract

The challenges faced by newer member states in the reform and management of their healthcare sector are well-known, yet often under-assessed. This paper adds to this literature by analysing the indirect costs of cancer in the context of a Central and Eastern European member state. We consider the case study of Romania because it is among the European countries with the lowest health-care expenditures for cancer per person – 20 euros, and overall Romania has the lowest health expenditure per capita in the EU with only 584 euro (Hofmarcher et al., 2020). Romania has very low capabilities in terms of public healthcare expenditures, preventive care expenditures, and treatable mortality. Patients with cancer experience various administrative and social obstacles: lack of national screening programs, translated into late diagnosis, low access to and poor education around screening, long waiting list for mandatory tests, etc. In addition to this, our data shows that, it takes up to 6 months from diagnostic to the start of treatment for pulmonary cancer in Romania, or that patients are sometimes traveling up to 12 hours to reach a cancer treatment centre. The poorer conditions for people with cancer in Romania are reflected in a higher burden of cancer. We look specifically at the impact of cancer on the Romanian labour market as indirect costs of the disease.

Keywords: labour market, disease burden, healthcare costs.

JEL Classification: I15, I18, J08.

1. Introduction

The burden of cancer is an increasing concern for all countries, as the number of cancer patients is expecting to grow worldwide. According to the WHO, the number of cancer cases will grow from 18.1 million persons/year in 2018 to 29.4 millions of persons/year in 2024. Globally, 1 in 6 deaths are caused by cancer,

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and the number of deaths is projected to increase by 45% between 2008 and 2030, mainly due to the fact that people are living longer and the exposure to risk factors is growing (WHO 2020). Cancer is one of the top causes of death in Europe. More than one in every four deaths (26%) in Europe is due to cancer, which makes cancer the second leading cause of death. The spread of the disease requires a prompt answer from policy makers, both in prevention and treatment decisions for which the dimension and the category of costs involved by cancer are determinant.

Consequences of cancer may be considered in terms of economic costs (both direct and indirect), emotional distress of patients and relatives, and social and psychological side effects. Indirect costs are composed of productivity loss due to foregone labour market earnings of cancer patients based on three different reasons: mortality (the productivity loss between effective age and legal retirement age), temporary absence from work due to treatment or disease (absenteeism, payed leaves, diminished work capacity) and permanent discontinuation of work (loss of work capacity, early retirements). Additionally, patient incur indirect costs in the way of informal care, out-of-pocket money necessary for different activities associated to the illness (such as transportation, housing, etc.).

2. Research Hypotheses and Literature Review

Cancer patients are on average three times less likely to participate in the labour market at normal employment (i.e., full-time) (Bates et al., 2018). Even when a cancer patient returns to work after or in between treatments, their productivity will be significantly affected by the level of side-effects associated with the treatment option. Loss of productivity of the active persons can be associated with the hours of absenteeism and days of medical leave (Volintiru, 2020). Therefore, from a societal perspective, the economic burden of cancer is composed of direct costs, informal care costs, and indirect costs (Hofmacher et al., 2020).

Romania ranges among the European countries with the lowest healthcare costs of cancer per person: 20 euros per person comparing to Luxembourg, with 184 euro per person (Luengo-Fernandez et al., 2013). As in other countries, the indirect cost associated to cancer are higher that the direct costs. However, cancer patients in Romania face a lot of problems, making it hard to estimate the total costs associated with the illness. Despite a national health insurance that covers cancer diagnosis, treatment, and follow-up, patients with cancer still experience various administrative and social obstacles: lack of national screening programs, translated into late diagnosis, low access to and poor education around screening, long waiting list for mandatory tests – sometimes for weeks or months (as CT or MRI scan), lack of support therapy facilities, which means that patients are sometimes traveling up to 12 hours to reach a cancer centre (Udrea, 2020). The poorer conditions for people with cancer in Romania are reflected into a higher burden of cancer. Despite the fact that the percentage of people diagnosed with cancer in Romania is 1.63%, less than

in France, for example (where the prevalence is 2.9%), DALY[5] is significantly higher for Romania (3732) than for France (3018) or for Germany (3026).

Therefore, for the purpose of this paper, the following hypotheses are considered:

H1: The indirect costs of cancer in Romania are higher than the medical costs and can increase the burden of cancer.

In Romania, according to CNAS data, the average cost per patient treated per year for oncological conditions is 12,000 RON. Given that the average salary / year is 62,000, we can see how the indirect costs associated with cancer can be 6 times higher than the direct ones. Per-capita health spending on cancer in Romania is the lowest in the EU: below 100 euros, in 2018. Expenditures on cancer drugs, in per capita terms, for Romania, was 20 euros in 2018, comparing to other countries, like Austria, were they were 90 euros. Furthermore, because the level of adverse effects differs greatly between existing therapies, estimating the impact of treatment on active individuals is much more complex.

H2: The course of treatment can impact significantly the quality of life and productivity of cancer patients in Romania.

Cancer patients are on average three times less likely to participate in the labour market at normal employment (i.e., full-time) (Luengo-Fernandez et al., 2012). Even when a cancer patient returns to work after or in between treatments, their productivity will be significantly affected by the level of side-effects associated with the treatment option. Loss of productivity of the active persons can be associated with the hours of absenteeism and days of medical leave. It can also be associated with the overall gross-value added lost in the economy. It can also be associated with the overall gross-value added lost in the economy. It can also be associated with the overall gross-value added lost in the economy. For different types of cancer, the hours of work lost due to illness per week range between 1h -1h30m for progression-free patients for the rest of their life, and in between 2.8h per week (Tangka et al., 2013) and up to full-week lost due to illness for patients with progressing disease. There is a wide category of cancer patients who continue to go to work - either on their own or due to the completion of the medical leave allowed by law. For this category of "patients active on the labour market" very few data exist regarding the low efficiency in the workplace (Tangka et al., 2013).

According to a study conducted among European countries, Romania loses 598 million euro as productivity loss from premature mortality and 160 million euro as productivity loss from morbidity (Hofmarcher et al., 2018). However, much of the indirect costs due to morbidity differ from country to country, and the differences emerged from different policies for granting permanent or temporary disability (Bates et al 2018). While for Romania available data on absenteeism is limited, we do know that productivity levels are low, and policy measures should account for the impact of the disease on this socio-economic level as well.

[5] Disability-Adjusted Life Years (DALYs) per 100,000 individuals from all cancer types. DALYs measure the total burden of disease – both from years of life lost due to premature death and years lived with a disability. One DALY equals one lost year of healthy life (Roser and Ritchie, 2019).

3. Measuring the Indirect Cost of Cancer

The direct health cost of cancer (DHCC) has increased six-fold in the period 2005-2014 in the European Union (Wilking et al., 2016). New treatment options can significantly decrease this overall cost that is compiled from both the direct costs of treatment, as well as the indirect costs of productivity loss and lower quality of life associated with the disease.

In the context in which the Single market is consolidating on the dimension of the Social Compact, and further integration of social and health services is intended, it is very important to have a complete overview of direct and indirect costs associated with this disease. A proper estimate of the economic impact on the labour force (for both patients and caretakers) can inform better health policies in member states.

In Europe, the estimated cost of productivity loss was 42% of total cost of cancer, while direct medical assistance accounted for only 41% of total costs on average, and informal care for 18% (Luengo-Ferandez et al., 2013). Except for the USA, in the existent cohort of studies on indirect costs of cancer, developed economies have a much higher share of indirect costs of cancer such as productivity loss than those associated with the treatment itself (see table below). The share of indirect costs in the total cost of cancer leave room for improvement on this level via new therapies that present significantly lower side effects (e.g. immuno-oncology). In Table 1 we use data from existent studies to showcase in a comparative manner the extent to which the share of formal or informal costs related to cancer is distributed.

Table 1. Comparative Burden of Cancer Related Medical Costs in the World

	Direct medical costs (% total cancer costs)	**Indirect medical costs (i.e., productivity loss) (% total cancer costs)**
EU	41%	42%
USA	61%	22%
South Korea	28%	55%
Australia	29%	54%

Source: Based on existent studies (Bates et al., 2018, Carter, 2016, Luengo-Fernandex et al., 2013, Wilking et al. 2016, Tangka et al., 2013, Venkatesan, 2018).

Prevalence of informal care leaves the burden of the disease on the shoulders of the patient and the family hub. As such, social costs are incurred not only by the patient, but also by their caregivers and family members. Extended human capital costs are therefore registered at the level of a society that does not efficiently mediate the negative impact of cancer. According to a recent study, in the United Kingdom, up to 1 in 3 caretakers see their own personal incomes diminished by taking care of a cancer patient in the family (Cancer Support, 2017). The academic literature covers

the extent to which caretakers of cancer patients generally suffer a psychological, social and financial burden (Deshields et al. 2012). In a context of poor formal care, such as Romania, where the extent of facilities for non-medical care (e.g., transportation, accommodation) related to cancer is very scarce, the burden of informal care by family members is even higher. In Table 2, we show a comparative overview of the average productivity impact (i.e., hours of work lost due to own or family member illness) for both patients and caretakers or family members. We distinguish, based on existent studies and data, between different types of disease and different stages. In the absence of a patients' registry in Romania, such impact assessments are not possible, unfortunately.

Breast cancer survivors reported a mean reduction in productivity of 3.1% below the healthy worker norm, which amounts to a loss of 2.48 hours of work over two weeks of full-time employment (Lavigne et al., 2008). But, most of this loss is associated with the side-effects of the treatment, not disease itself (i.e., fatigue and hot-flashes), as stage progression itself accounts for only half of the productivity loss recorded in this study.

Table 2. Hours of work lost due to illness

	Hours of work lost due to illness (per week)		
	Progression free*	**Progress ingdisease**	**Caretaker (progressed or terminal phase)****
Melanoma	0.92	2.8 – 40 (full-work week)	34
Lung cancer	0.92	2.8 – 40 (full-work week)	34
Brest cancer	0.92 - 1.24***	2.8 – 40 (full-work week)	34
Urothelial carcinoma	0.92	2.8 – 40 (full-work week)	34
Head and neck cancer	0.92	2.8 – 40 (full-work week)	34
Renal cell carcinoma	0.92	2.8 – 40 (full-work week)	34
Gastric cancer	0.92	2.8 – 40 (full-work week)	34
Hepatocellular carcinoma (HCC)	0.92	2.8 – 40 (full-work week)	34

Source: Created by authors.

* *calculated based on absenteeism levels in Romania and the rate of workdays missed for people with cancer (Tangaka et al, 2013)*

** *calculated based on the average of 6.8 hours per day (Yabroff and Kim, 2009)*

*** *value specifically calculated for Stage 1 and 2 by Lavigne et al. (2008)*

For different types of cancer, the hours of work lost due to illness per week range between 1h -1h30m for progression free patients for the rest of their life, and in between 2.8h per week (Tangaka et al., 2013) and up to full-week lost due to illness for patients with progressing disease. There is a wide category of cancer patients who continue to go to work - either on their own or due to the completion of the medical leave allowed by law. For this category of "patients active on the labour market" very few data exist regarding the low efficiency in the workplace.

The administration costs in Romania are taken to be the same for the standard care and immuno-oncology treatments according to CNAS data. The treatment day is considered to be 280 RON for each patient disregarding the number of hours

needed to administer the treatment itself. Furthermore, because the level of adverse effects differs greatly between existing therapies, estimating the impact of treatment on active individuals is much more complex.

Administration cost	
Daily administration cost for chemo infusion	280 RON/ day (blanket value)

Source: National Health Insurance House Romania (CNAS).

There is no data to estimate the terminal cost of a patient in Romania or the broader region. However, we can refer to reasonable estimates of 1-1.2 day (172-207 RON) per week loss in productivity for care-takers of terminal stage patients. The terminal cost also portrays costs related to the death of the cancer patients. In Australia, for example, a recent analysis shows that about 88,000 hours were lost to premature cancer deaths in a single year (the equivalent of about $ 4.2 billion in revenue) - 30% of these costs being associated with lung and colorectal cancer.

	Terminal cost	
Terminal cost	The expected cost incurred due to a patient transitioning to the "dead" state. This will be used to capture all the costs involved in the end of the life of a patient. This can be given as a single value for all indications.	1.2-4.25 days * / 207 – 732 RON** per week productivity loss of care-taker

* Mininum interval based on Kouli et al. (2013) estimates, and maximum interval based on Lavigne et al. (2008).

** Calculated based on the average salary in Romania of 5163 RON.

In Romania, according to CNAS data, the average cost per patient treated per year for oncological conditions is 12,000 RON. Given that the average salary / year is 62,000, we can see how the indirect costs associated with cancer can be 6 times higher than the direct ones.

4. Conclusions

This paper has a twofold goal. It aims to develop a conceptual overview of existent methodological approaches to studying and measuring the burden of cancer on patients, caretakers or budgetary allocations. This paper showed that there are indirect economic effects of a cancer diagnostic, on the patient, but also on the broader economic ecosystem in which cancer patients normally live and work. There are also psychological effects, and also the financial stress that extends to the family and support people (relatives, caregivers) are important, especially in the context where there is limited or no access to care services or when they are very expensive. Family members are generally unpaid for this additional activity and therefore a

reduction in employment, financial problems, and a poor physical / mental state can occur with profound negative effects on their ability to be productive members of society.

The second goal of the paper was to define some potential measurements for the burden of cancer in Romania. There are significant limitations in the availability of primary data, comprehensive patient registries and other information that can help towards the quantification of the burden of cancer in this country. In this context, several conclusions emerge with regards to the broader socio-economic implications of fighting cancer in Romania and elsewhere.

Efforts to reduce the economic effects of cancer must come from all those involved: governments (public health and investment policies), individuals (improving lifestyles and using health system services), professional associations (coordination and self-regulation), industry (access to medicines, innovation, partnerships, and strategic investments). Thus, by cooperation of all stakeholders, investment and efforts to reduce the effects of cancer can bring the expected benefits, especially in terms of reducing suffering, saving the lives of those affected, promoting social equity, and maintaining adequate productivity. The forms of intervention take several forms, from primary prevention to hospital care services in the terminal phase of the disease (WHO, 2020) and significant improvements can be achieved in each if these stages.

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The Impact of COVID-19 on E-commerce Use in Lebanon: A Quantitative Study

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Abstract

COVID-19 pandemic has changed business trends dramatically especially with increased quarantine periods and limited transportation. In addition, the developments in information technology, mainly the Internet, led to increased interest in studying e-commerce whether applicable through PCs or mobile devices. The aim of this article was to investigate how the Covid-19 pandemic affected e-commerce usage in Lebanon. The method used was quantitative where an online survey was distributed on a sample size of 400 customers. The results showed that during COVID-19 consumers increased the use of e-commerce as companies/stores were more dependent on their online presence to conduct their business, especially when long quarantine duration was applicable. In addition, with COVID-19 pandemic, customers were using more local websites and social media platforms to purchase food products, and they were satisfied with the quality, service provided, communication, and cash on delivery payments.

Keywords: COVID-19, e-commerce, Lebanon, online, payment, product.

JEL Classification: L810.

1. Introduction

The world has passed through a lot of pandemics such as the Spanish, Asian, and Hong Kong Flu, SARS-CoV-1, and lately the Coronavirus (COVID-19) pandemic. Each pandemic forced changes on local and worldwide economies, policies, social life, and customers' behaviour (Butu et al., 2020; Koch et al., 2020). According to the World Health Organization (WHO), 133,146,550 cases of COVID-19 existed with 2,888,530 deaths as of April 9th, 2021.

Although COVID-19 widespread enforced manufacturing sites closure, unbalanced economies, increased demand on necessities, and retail store downsizing, however, online businesses surfaced to meet the demands and needs of customers especially during quarantines. Retail stores who decided to survive had

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to build their online presence and those who already had established online services needed to boost their work and provide better service quality (Oven & Hicintuka, 2020). Businesses have highlighted the importance of e-commerce on websites, applications, and even social platforms for the ability to provide online interaction with customers, in addition to the required product information and enhanced product experience through the 3D product image technology (Chandna & Salimath, 2018).

According to the Ministry of Public Health (MOPH) in Lebanon, the incident of coronavirus increased to 492,000 cases and 6,592 deaths by April 8th, 2021, and people now are at higher risk than before to be infected. To combat this pandemic, the government imposed some strict rules such as social distancing, wearing masks, limiting the number of customers allowed to enter stores, and every now and then whole country closure. Moreover, as hospitals became overloaded with patients, people were obliged to stay at home to protect themselves and their families.

According to Societe Generale (2021), e-commerce sales in 2015 were US$ 310 million (2.1 million people shopped online), while in 2016 they were US$ 341 million (2.3 million shopped online), thus a 9.8% growth. Moreover, the Lebanese customers' most preferable method of payment showed to be cash on delivery as they had little trust with online payment security. Around 50% of the internet users were below 30 years old and most were from mid-income categoy. In addition, customers used to mostly shop clothes (44%) and travel services (42%), while electronics had the lowest percentage.

The aim of this paper is to study and analyse the adoption of e-commerce in the Lebanese market as little literature is available so far that discusses the customers' willingness to use e-commerce in Lebanon especially during the Coronavirus pandemic. This research will assist business developers and marketers in giving an insight over Lebanese customer online behaviour, their product preferences, and preferred method of payment, which will help in setting their marketing strategies.

2. Problem Statement

2.1. Definition of E-Commerce

Electronic commerce is an influential idea and procedure that has essentially changed human lives. Electronic trade is one of the principle criteria of transformation of Information Technology and correspondence in the field of economy (Nanehkaran, 2013).

Kutz (2016) stated that e-commerce is the exchange of tangible and intangible products through PC-web "Internet". It includes Mobile commerce 'M-Commerce", e-cash transactions, Supply Network Management, Digital Marketing, and many others. More definitions of e-commerce include "an electronic exchange which is the deal or acquisition of merchandise or services between organizations, family units, people, governments and other open or private associations, directed over PC web-systems" (Qin, 2014). Moreover, according to VanHoose (2011), electronic

commerce alludes to any procedure that involves trading responsibility for rights to utilize products and enterprises by means of electronically connected devices such as computers where interaction occurs through the network, Internet.

2.2. Classification of E-commerce

- *Business-to-Business e-commerce (B2B)*

B2B e-commerce is a sort of trade exchange that occurs between organizations or an exchange that happens between an organization and other organization to move products (Nanehkaran, 2013). Considered the biggest classification of online businesses, it includes organizations carrying out e-purchases, supply network management, connect partnerships, and arranging sale exchanges over the web (Djan, 2008). B2B online business presents possible favourable circumstances for developed countries since it lessens exchange costs, and the cost of the internet business exchange is affected less by distance and location than in traditional advertising channels (Humphrey, 2002).

- *Business-to-Consumer e-commerce (B2C)*

It includes organizations, profit and non-profit, or government launching tangible and intangible products to customers by means of web innovations (VanHoose, 2011). This incorporates organizations selling programs and equipment through the web, taking requests for items that are along these lines handed over to the buyer, and giving internet services, for example, online magazines and newsletters and search engines (Djan, 2008).

- *Business operations*

It alludes to the utilization of web-based business to customize and adapt the company's inner exercise business tasks to amplify their proficiency and viability such as sharing sales forecasts with suppliers. Using electronic commerce, organizations can improve the work of supply chains, give propelled CRM systems to enhance customer satisfaction, and diminish exchange costs (Djan, 2008).

- *Consumer-to-Consumer e-commerce (C2C)*

It involves the utilization of web-based business by people to exchange and buy/sell data with others. An enormous development in C2C auction websites happened, for example, e-Bay and other websites empowering buyers to offer products and enterprises to different buyers on an individual premise (Djan, 2008). Consumer-to-consumer electronic commerce has developed extensively lately, and this type of electronic trade has done a lot to extend the job of electronic commerce intermediaries or third parties such as distributors, which help arrange trades between a purchaser and merchant in an online business exchange (VanHoose, 2011).

- *Business-to-Government e-commerce*

It offers merchandise or services to governments or governmental offices such as the military, police power, emergency clinics and schools. Besides, organizations will frequently contend for agreements to give online governmental services to people such as assortment of taxes, and providing governmental services (Djan, 2008).

2.3. Literature Review

According to Hachem (2020), who studied 500 Jordanian participants, COVID-19 proved to have a definite effect on the use of e-commerce with increased shopping rate for groceries and life necessities due to long quarantines. In addition, females were the main influencers in online shopping decisions. Furthermore, people's behaviour during COVID-19 has changed as their daily life tasks, hobbies and lifestyles have been shifted to be more organized and more economically planned as lockdowns forced closure on restaurants, nightclubs, entertainment centers, malls, and many other facilities.

According to Neger & Uddin (2020), a questionnaire distributed on 230 respondents in Bangladesh revealed that product and service features, branding, and diversity affect the customer's online purchasing behaviour. In addition, payments are best to be easy and convenient for a consumer. That is why; cash on delivery showed to be the best way of payment and the most secure way of payment. Moreover, consumers considered that e-commerce would lead to timesaving and better ability to gather and compare product information and prices.

According to Najjar (2018), before the COVID-19 pandemic, interviews done with six retail companies in Lebanon showed that companies started to use their online presence for promotional purposes rather than for sales as the Internet infrastructure and owners' mentality did not support the use of technology to boost their sales though e-commerce.

As stated by Daou & Mikhael (2015), it was shown that the most purchased products online was clothes, then hotel booking and airline tickets. Customers used to focus their online use on e-banking services such as transferring money and paying bills.

A survey executed by Ecommerce Europe (2021), on 19 participants living in different European countries, showed that closure of physical stores due to COVID-19 leads to an increase in online sales. A share of 84.2% of the respondents stated that they increased the purchase and use of daily needs as food and drug supplies, while 73.7% declared that there is a decrease in purchasing online travel tickets.

3. Research Question/Aims of the Research

As COVID-19 has changed customers' behaviour and the way of living, and as data supporting the Lebanese consumers' online shopping behaviour is still limited, this study will present an overview over the Lebanese people e-commerce

behaviour before and during COVID-19, types of products shopped, preferred way of payment, and their level of satisfaction with products and services quality provided.

The research questions addressed include:

Q1: How much did online purchases change before and after COVID-19 pandemic?

Q2: What is the level of online purchase satisfaction and the preferred way of payment?

4. Research Methods

To study consumer behaviour towards e-commerce, I adopted a quantitative descriptive method through distributing an online survey of 17 questions via social media platforms and WhatsApp. The sampling technique used was simple random sampling where a sample size of 400 people participated randomly and responded to demographic and to online shopping behaviour and preference questions. In addition, I collected secondary data through some articles and reports. Collecting information took place during January and February 2021.

5. Findings

5.1. Demographic Information

The sample size of the study was 400 customers. Of these, 55% were from the age group18-25 years, while 20% were 26-33 years old. Thus, the majority of the participants were aged between 18 and 33 years old. In addition, 70% were females and 30% males (Figure 1).

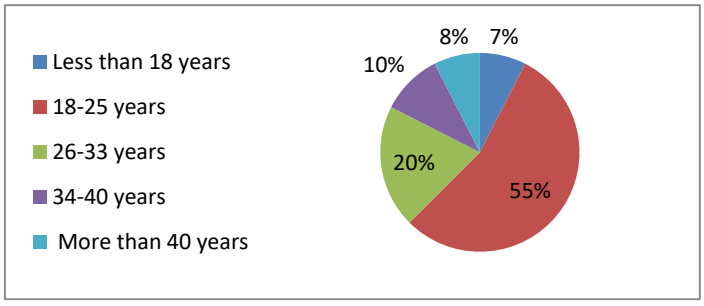


Figure 1. Age of participants
Source: Author's development (2021).

The majority of those who participated had an income $700-1000 (dollar rate at 1,500 Lebanese pounds) followed by $1001-1500, which is considered the major income range of most people in Lebanon (Figure 2). Those can be searching for deals or lower prices online.

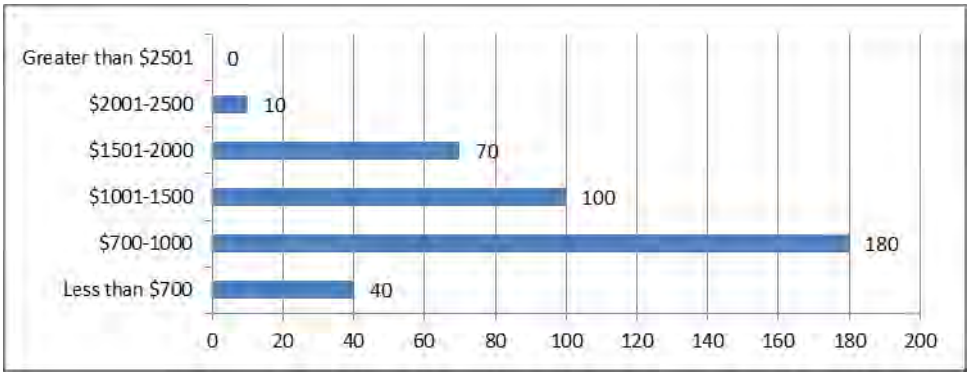


Figure 2. Income of participants
Source: Author's development (2021).

5.2. Measuring Ordering and Frequency Before and During COVID-19

As shown in Figure 3, e-commerce purchases during COVID-19 were more than before COVID-19. The increase is due to quarantines and governmental restrictions that shifted businesses from brick-and-mortar to brick-and-click or click-only. In addition, the frequency of ordering increased several times a week and once a week during the COVID-19 pandemic (Figure 4).

Moreover, before the COVID-19 pandemic, 86% were using international applications or websites to order, while 14% were only using local social media pages. During COVID-19, consumers shifted from international (32%) to local websites, applications, and social media pages (68%) for ordering. The worldwide lockdown and the increased adoption of e-commerce by businesses forced customers to depend on local online shopping, as more options are available.

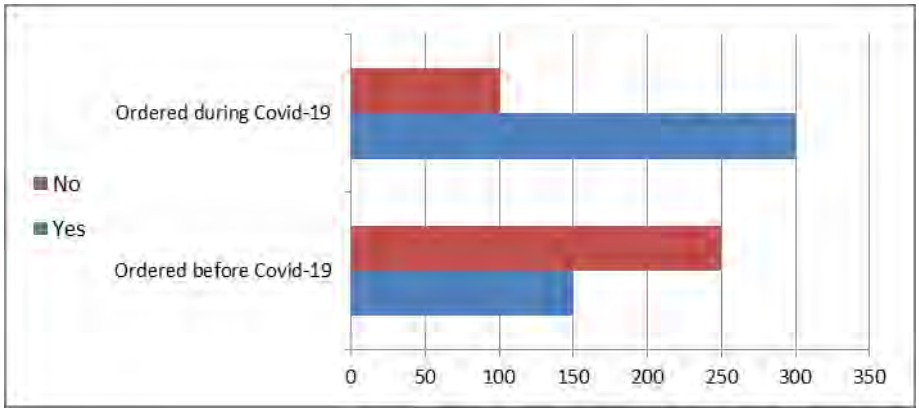


Figure 3. Comparing number of customers purchasing online
Source: Author's development (2021).

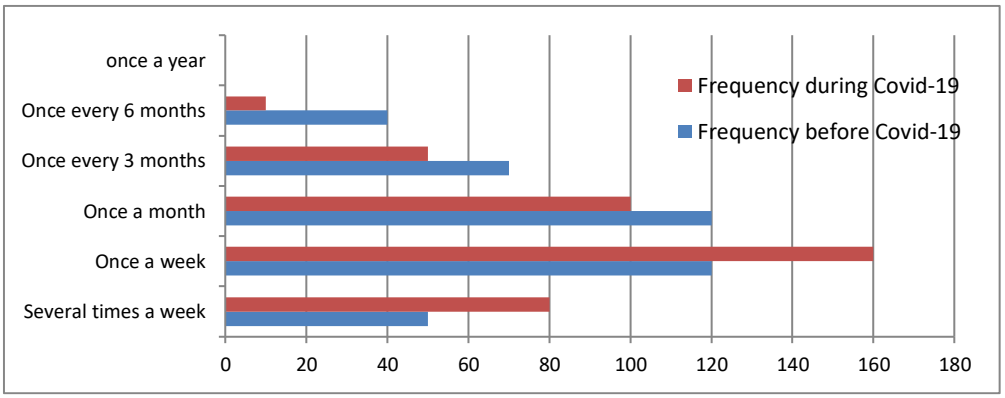


Figure 4. Comparing frequency of online purchases before and during COVID-19
Source: Author's development (2021).

5.3. Quality of E-commerce Products and Customer Service

It is shown in Figure 5 that 85% considered the products purchased online the same as those purchased in stores and 15% considered them different. In addition, 30% stated that they are very satisfied with delivery service, 25% satisfied, 23% neutral, 15% dissatisfied, and 7% highly dissatisfied. When it came to the quality of communication and response rate, 15% were very satisfied, 37% satisfied, 30% neutral, 12% dissatisfied, and 6% very dissatisfied. Thus, customers were satisfied with online product, their delivery service and communication, which will support the increase in the number of customers and frequency purchasing online.

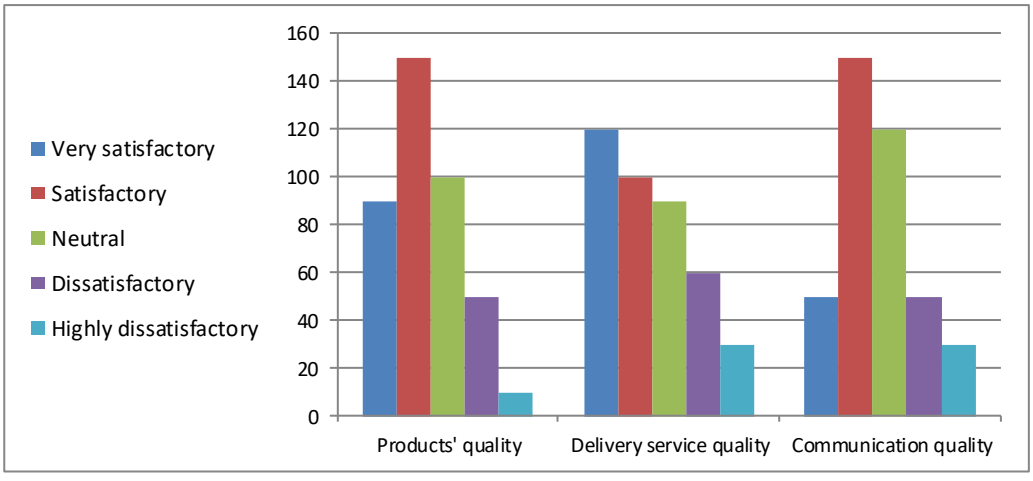


Figure 5. Customers' level of satisfaction of the quality provided online
Source: Author's development (2021).

5.4. Type of Product Purchased Online and Preferred Way of Payment

The demand for food, drink, and groceries has increased during the emergence of COVID-19. However, travel and hotel service sales have decreased online (Figure 6). Consumers tend to consume more basic convenience products than entertainment, leisure, shopping products. That explains the increase in purchase frequency and the increase in food and groceries demand. In addition, lockdowns and governmental law restrictions on movement, lead to airport closure worldwide that will eventually affect the hotel industry service.

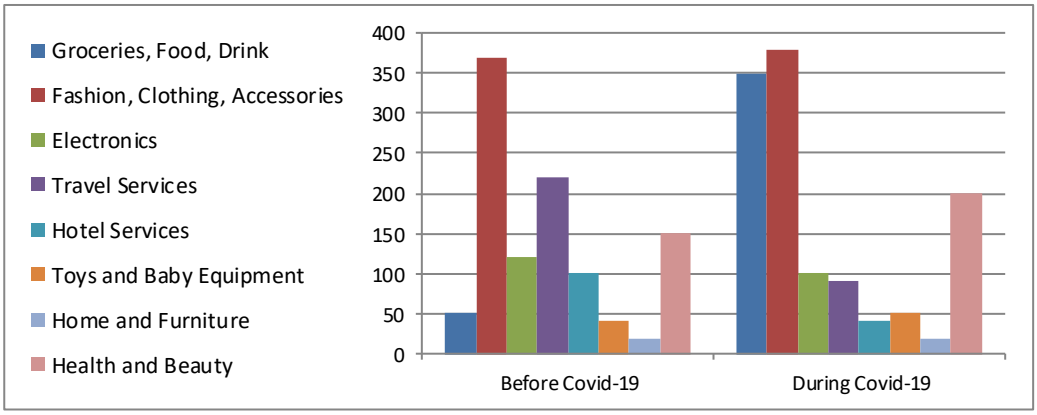


Figure 6. Type of products purchased online
Source: Author's development (2021).

The preferred method of payment was the cash on delivery, as 74% did not trust online payments, while only 6% supported the use of credit cards and 20% bank transfers (Figure 7). This result supports what Neger & Uddin (2020) stated, that customers trust cash on delivery more than any other method of payment.

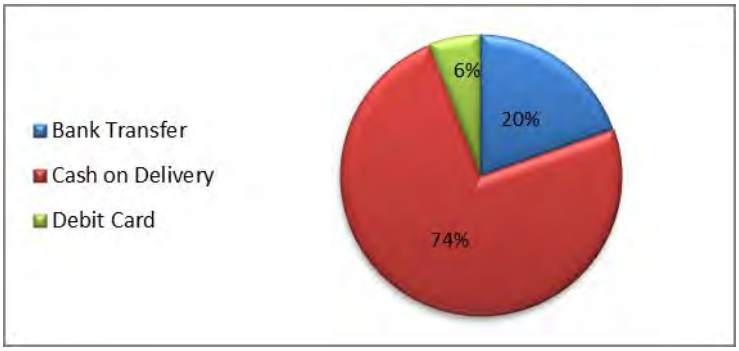


Figure 7. Methods of online product payment
Source: Author's development (2021).

6. Conclusions

As the study results presented, adolescences were the major group who purchase online products, as they spend most of their time using social media platforms. In addition, female users were more than male users, as females are more interested in beauty, fashion, and the ones who by culture care for home food, drink, and grocery availability. Thus, e-commerce businesses should focus on targeting more females when it comes to providing basic needs.

In addition, answering the first research question, the percentage use of e-commerce and frequency has increased during COVID-19 pandemic due to quarantines and people's preference to limit contact. With the closure of stores and supermarkets, a new method adopted by Lebanese people was to purchase more of their food supplies online. Moreover, as proved, health items purchases has also increased due to the people's craving to purchase vitamins and any health supplement that will boost their immune system and protect them against Coronavirus.

Accordingly, during COVID-19, customers shifted their purchasing preferences from entertaining and leisure products to more basic products. Businesses who wish to survive during pandemics should offer customers what they need from food, drinks, groceries, health items, and other basic products. Moreover, as most businesses are activated online, intense competition will force companies to provide better quality products, enhanced delivery service, and immediate way of communication, and this is what the study showed in Figure 5, which answered the second research question.

On the other hand, online payments had always had a trust issue due to cybercrime. Answering the second research question, cash on delivery is being one motivator to encourage people to purchase online after they receive their products and are sure about their quality. Companies should set their strategies to match the consumption behaviour of Lebanese customers who (74% of the participants) proved that to use e-commerce sites, they prefer cash on delivery payment method.

In conclusion, as proved, COVID-19 changed consumers' behaviour and moved people to spend more time online in an attempt to have their products available without enforcing risks on their lives and their family lives. Moreover, the needs of customers changed where purchasing leisure and entertainment products showed to be lesser.

The limitations of the study could be that most respondents were females, which will lead to limited data on males' e-commerce behaviour. In addition, the majority of participants were less than 33 years old but it is necessary to mention that those above 33 years have a high purchasing power that should be studied, too. Furthermore, Lebanon is passing through an economic recession that can influence the results, as people are rather targeting products with low prices due to inflation, which explains why people are shifting their purchases from international to local stores.

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The Impact of Digitalization and Industry 4.0 on Business. ERP Systems can be a Solution for Business?

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Abstract

The progress of the digitalization of the industry has motivated companies to increase investments in solutions and tools that allow the automation of processes so that they can develop and improve their performance. The impact of the digitalization concept on the business has become a very special topic for most companies that want to automate their processes and to have a sustainable business. The progress of the economic and IT environment has led to the emergence of digital transformation, which has an impact on the expectations and behaviour of companies.

The aim of this paper is to observe the impact of digitalization and industry 4.0 on business, and particularly whether ERP systems are a solution for business.

The research method used was the systematic review of the literature. The selected articles aim at defining the concepts of digitization and industry 4.0, the advantages and disadvantages of industry 4.0, but also at demonstrating that ERP systems are the best solution for process automation for companies.

The results showed that digitalization and industry 4.0 have a positive impact on the performance and sustainability of companies if they implement an ERP system within the company. In conclusion, ERP systems have a beneficial role for a company.

Keywords: ERP systems, digitalization, industry 4.0, flexibility, creativity.

JEL Classification: M10, M15, M40.

1. Introduction

The evolution of information systems and technology in general has favoured the progress of the digitalization of the industry, thus causing companies to increase investments in solutions and tools that allow the automation of processes within the company, which significantly improve their performance. Organizations around the world pay special attention to the company's development process, investing in new technologies adapted to their requirements.

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Neamțu et al. (2019) noted that "the evolution of human society is divided into 6 stages": the stone period, the iron period, the agricultural period, the industry period, the technology period and the knowledge period.

Coskun-Setirek and Tanrikulu (2021) believe that the digitization of technology has the role of "improving productivity, reducing costs and increasing innovation". The main implications and opportunities offered by the digitalization of technology are: "a new business model, new products, new forms of innovation and transformation" (Reuschke et al., 2021).

The concept of Industry 4.0 emerged after the digital revolution, this concept being based on a strong relationship of interconnectivity, automation and machine learning. The Industry 4.0 concept was first launched in 2011 due to the "strategic initiative of the German government" (Greensoft, 2019). The purpose of this industry is to digitize most of the activities performed by companies, exploiting the potential of new technologies.

According to Kandananond (2014), integrated ERP systems have the role of "automating and integrating all business processes and operations", because the processed information is stored in a database that is common to several categories of users in different departments so that access information is much easier.

The article is structured as follows: a section where I presented the problem to be researched, the questions and the research method, the main results identified based on the review of the literature specific to the researched problem and the conclusion of the article.

2. Problem Statement

The problem to be researched was to observe the impact of business digitalization and the emergence of the industry 4.0 concept. I also looked at whether cybersecurity can be ensured in the context of Industry 4.0, as well as the advantages and disadvantages of Industry 4.0.

3. Research Questions/Aims of the Research

The aim of this paper is to observe the impact of digitalization and industry 4.0 on business, thus observing whether ERP systems are a solution for business. I have established some research questions that I will analyse in the Findings section.

Q1: What does the concept of Industry 4.0 on business mean?
Q2: What are the advantages and disadvantages of the Industry 4.0 concept?
Q3: Can cybersecurity be ensured in the context of Industry 4.0?
Q4: What does the concept of business digitization mean?
Q5: Can ERP systems be a business solution?

4. Research Methodology

The research method used in the paper is the systematic review of the literature. I selected a sample of 25 papers by searching for the keywords "industry 4.0", "ERP systems", "solution" and "digitalization". Reading the selected articles, I noticed that

some did not essentially address the main concepts of "industry 4.0" and "ERP systems", so I removed those articles from the sample. The role of this literature review is to define the concepts of digitization and industry 4.0 and to demonstrate that ERP systems are a reliable solution for process automation. Technological evolution has a major impact in the development and study of the concepts of digitization and industry 4.0.

Thus, I followed the main effects of ERP systems on the digitization of business processes to observe the advantages and disadvantages of using these systems.

5. Findings

Q1: What does the concept of Industry 4.0 on business mean?

Due to the rapid development of information technology, most activities have been automated to increase the efficiency of companies. Organizations need to ensure "increased shareholder confidence" and cope with "industry pressure" (Fonseca, 2018).

The industry has undergone many changes over the period, or rather numerous "industrial revolutions" that aimed to increase complexity and productivity. There were 4 "industrial revolutions":

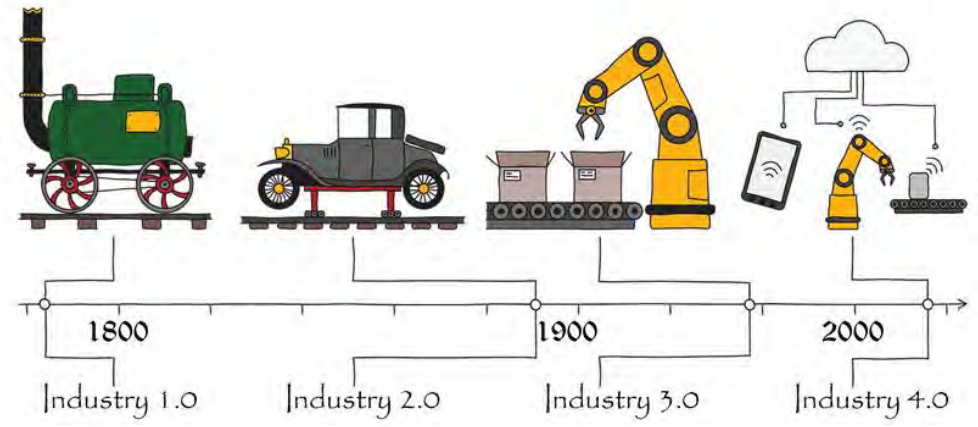


Figure 1. The four "industrial revolutions"
Source: Greensoft.ro, 2019.

Industry 1.0 has been between the years 1760 and 1840 and was called the industrial revolution that involved the transition from manual labour by humans with the help of working animals to a more optimized form of human labour (using water engines, steam engines and other machine tools)

Industry 2.0 was between the years 1870 and 1914 and was called the technological revolution. During this period, the extensive railway and telegraph networks appeared, which allowed the faster transmission of information and ideas.

Industry 3.0 appeared at the end of the 20th century and was called the digital revolution, because computers and process automation within companies appeared.

Industry 4.0 appeared between 2011 and 2015 and determined the emergence of the fusion of technologies in the physical, digital and biological spheres. The main role of Industry 4.0 was to improve technology.

Q2: What are the advantages and disadvantages of the Industry 4.0 concept?

In Table 1, I presented the main advantages and disadvantages of Industry 4.0 as follows:

Table 1. Advantages and disadvantages of Industry 4.0

Advantages	Disadvantages
+ improved efficiency + increased productivity + flexibility and agility due to the use of intelligent technologies + reduces costs (automation, systems integration, data management) + a better customer experience	- limited creativity - increase unemployment because most activities are automated and there is no need for employees to perform daily tasks - contribution to environmental issues (the use of modern technologies that automate activities can be polluting due to emissions of toxic gases and substances) - IoT security - long-term implementation of new technologies - high initial costs - requires maintenance and training

Source: Greensoft.ro, 2019.

Industry 4.0 has influenced the following aspects, as shown in Table 2:

Table 2. Application influenced by industry 4.0

3D Printing	**Drudge**
IoT	**SaaS / Cloud Computing**

Source: Own creation.

Q3: Can cybersecurity be ensured in the context of Industry 4.0?

Cybersecurity is one of the biggest challenges a company in Industry 4.0 faces. These companies in Industry 4.0 use intelligent and interconnected technologies that aim to "automate all phases / activities" of a company (Corallo et al., 2020).

According to Corallo et al. (2020), industry 4.0 transformations aim to "create value for companies using modern technologies."

In the past, the technologies used in companies were not connected to the Internet so all information was distributed between departments only in written format using many resources. Currently, approximately 90% of the technologies are connected to the Internet, so the company has a low consumption of resources but must ensure a high security of the data processed with the new technologies.

Cybersecurity standards and documentation are essential in building useful procedures and controls to ensure data security (European Network and Information Security Agency - ENISA, 2011).

Q4: What does the concept of business digitization mean?

Digital technology can be defined as a "combination of information, communication and connectivity technologies" (Bharadwaj et al., 2013, cited by Coskun-Setirek and Tanrikulu, 2021). It was found that digitalization has a significant impact on improving business performance and identifying new opportunities for company development.

The digital transformations of a business presuppose that a company will go through "different strategic transformations" (Caputo et al., 2021). More and more companies feel the need to achieve a digital transformation due to 3 reasons:

1. World Wide Web (the emergence of broadband internet, smartphones, web 2.0, cloud computing, speech recognition) that led to the emergence of e-commerce
2. New digital technologies that determine that approximately the entire activity to be performed in digital format.
3. The behaviour of the consumer who orders more online, causing the increase of online sales to the detriment of physical trade.

According to the study conducted by Ion (2021), Romania is on the last place in the European Union in terms of business digitalization. The ranking according to the level of digitization is: Denmark, France, Germany, Italy, the Netherlands, Poland, Spain, Great Britain, Romania.

Q5: Can ERP systems be a business solution?

Given that digitalization has evolved greatly in recent years, most companies have sought solutions to optimize their business using a single application that includes information from all departments. The best solution to meet the requirements of companies was the implementation of integrated ERP systems.

The main modules found in integrated ERP systems are: supply chain, finance, accounting, production, human resources, sales and specific activities for different customers (Weinrich and Ahmad (2009, cited by Rajan and Baral, 2015).

ERP systems have the ability to easily integrate business processes ensuring a fast processing of a large volume of information with the help of the functions contained in these ERP systems.

The role of ERP systems is to define the best and most detailed image of the company's situation, so that the company offers the most credible results to shareholders and managers.

In addition to integrating all processes, ERP systems allow the company to grow sustainably, as they reduce the consumption of electricity, paper and other resources. Companies must become as "socially responsible" as possible (Mirghafoori et al., 2017).

If a company wants to grow sustainably, before implementing an ERP system it must ensure that the system offers:

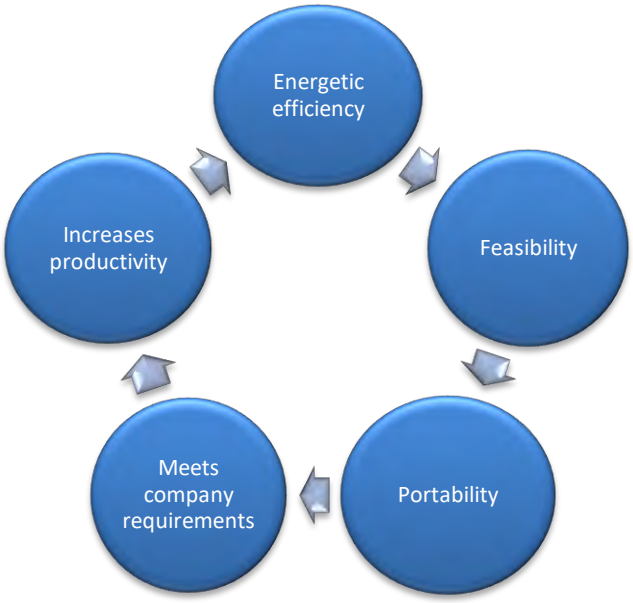


Figure 2. Elements of an ERP system to ensure sustainable growth
Source: Own creation.

ERP systems can provide a "multifunctional view of the entire organization" by providing support for sustainable good practices (Watson et al., 2010, in Bradford et al., 2012).

6. Conclusion

Considering the evolution of technological systems due to the digitalization and the appearance of the industry 4.0 phenomenon, the companies had to find solutions for optimizing the activity. The best solution that incorporates all the requirements and activities of the companies were the integrated ERP systems, because it incorporates all the modules specific to a company's activity, as well as adding specific modules depending on the specifics and requirements of the company, and information is available at all departments by simply querying the database.

In addition to the modules and functions of ERP systems, it offers the company the opportunity to grow sustainably, reducing inefficient resource consumption.

In conclusion, ERP systems can be a solution for businesses in the age of digitalization and the context of Industry 4.0.

Acknowledgment

The whole paper belongs to me and has not been published in another journal.

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Crytpo-Assets Regime in the European Area

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DOI: 10.2478/9788366675704-012

Abstract

Crypto-assets are one of the major applications of blockchain technology in finance and they have captured the attention of the European authorities in the last 10 years, examining the opportunities and challenges raised by these types of assets. Central banks have stated that the use of crypto-assets remains modest in size and it does not pose a threat to financial stability, therefore they stayed unregulated in the EU. Following a big surge in the market capitalization of crypto-assets starting 2015, national authorities have decided to take action. While some member states have implemented a bespoke regime to cover crypto-assets, in other member states they remain unregulated. This paperwork's aim is to present a picture of the European context with regard to crypto-assets and the approach taken by member states in order to mitigate the risks related to crypto-assets.

The information was collected from the available sources. The research was realized by using qualitative and thematic analysis.

Throughout this paper, we will present the first attempts to introduce legislative solutions to regulate crypto-assets and create an EU framework that both enables markets in crypto-assets and the tokenization of traditional financial services.

The main conclusion is that a common EU framework approaching uniform conditions for crypto-assets will provide the legal certainty necessary to promote innovation within the crypto-asset market and to ensure market integrity and financial stability.

Keywords: crypto-assets, crypto-assets regime, blockchain, crypto-currencies, crypto-assets risks, Bitcoin.

JEL Classification: E52, E58, G20, G23, O33.

1. Introduction

The financial system is going through rapid changes. We are experiencing an evolutionary process driven by Fintech innovations and affecting a wide range of financial services. Blockchain and crypto-currencies are in between the new form of

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services allowing the transfer of currencies and obligations. Globally, more and more virtual currency issuers have appeared, for example Bitcoin, Ethereum, Bitcoin Cash, Stellar and Ripple. Crypto-assets/currencies are a digital representation of value or rights that may be transferred and stored electronically, using distributed ledger technology or similar technology.

The use of the term "currency" when referring to such assets and their characteristics has been challenged over time by several researchers (Dwyer, 2015; Selgin, 2015; Schilling & Uhlig, 2019; Yermack, 2013). In addition, some studies showed that crypto-assets, especially Bitcoin, represent a hedge instrument for investors. For example, Paule-Vianez et al. (2020) argue that Bitcoin can act as a hedge or safe currency against economic uncertainty due to its independence from the existing economic and financial system.

Other researchers focused on studying the technology on which virtual currencies are based, namely blockchain, trying to explain how this innovative technology works and how to validate transactions with virtual currencies ensuring their traceability and security (Rella, 2020).

The benefits of this technology were also studied, with recommendations for regulators to accept technology and apply it in various areas, such as data collection through the blockchain that would allow instant dissemination of data to authorized persons with access rights, being at the same time protected against loss and manipulation (Jamison & Tariq, 2018). Crypto-assets/currencies (please take note that crypto-assets and crypto-currencies will be understood in the same sense in this paper) like Bitcoin are digitally encrypted tokens traded in peer-to-peer networks (Malcom, 2018). These types of crypto-assets have attracted the attention of regulators, companies and the public worldwide, generating concerns for regulators seeing crypto-assets as a potential instrument for illegal activities and with potential impact on the monetary policy and financial stability. Even so, regulators have not taken actions in regulating crypto-assets, referring especially to the European Area, and the authorities observed the challenges and opportunities presented by these innovative digital tokens.

Money is defined by three key properties: a medium of exchange, store of value, and unit of account, so we can support the fact that crypto-currencies are not widely used as media of exchange due to their limited acceptability and mostly to their high volatility. When it comes to store of value, difficulties in safely storing crypto-assets are known, as hackers have targeted them on many occasions (The record loss of 850,000 bitcoin from Tokyo-based Mt. Gox in 2014). Last function, the unit of account, as the European Central Bank expressed (2012, 2016), "given the low level of acceptance and the high volatility of their exchange rates and thus purchasing power make them unsuitable as a unit of account […] Bitcoin cannot be regarded as full form of money at the moment".

Taking into consideration the aspects mentioned above, it is obvious that crypto-assets are different from the money and the payment methods we know. Crypto-assets have a number of inherent and unique characteristics that pose challenges for policymakers. These challenges arise from their lack of centralized control

(technology is an innovative one based on decentralized control), anonymity, valuation difficulties, hybrid characteristics of payment and investment instruments (Jan, 2020).

To conclude, this paper will focus on presenting the implications of the crypto-currencies from three perspectives, i.e.: 1) tax policy implications and regulation; 2) money laundering implications and regulations and 3) activities involving crypto-assets and the need to regulate them at EU level.

2. Problem Statement

What implications do crypto-assets pose for the European and national markets? According to Coin Market Cap (Coinmarketcap - Bitcoin), the estimated annual transaction volume in Bitcoin grew from $2 million to over $55 billion between 2012 and 2020. Is it necessary to regulate this type of assets, including under de EU law in order to protect the financial markets?

Authorities (ABE, 2019, NBR, 2018) mentioned in the last years, crypto-asset activities are not regulated services within the scope of EU banking, payments and electronic money law, and the risks related to crypto-assets are not addressed in the EU.

It is important to mention that the European authorities observed in the EU a relatively low level of crypto-asset activity for the moment and so they argued that crypto-assets do not appear to give rise to implications for financial stability. However, they also outline the need to monitor and to address some of the risks related to activities involving crypto-assets. National regulatory initiatives have been developed in some countries and other member states reacted and published official positions on crypto-assets in order to raise concern for the population in relation to the use of these types of assets, especially related to the risk of losing the money invested due to the high volatility of crypto-assets.

2.1. Money Laundering Implication and Regulation

One of the most important issues related to the use of crypto-assets is the fraudulent activities that might be subject to money laundering rules. The possible implications of crypto-assets/currencies in criminal activities due to the lack of regulation in this field have made the authorities to assess the need of a coordinated global effort to mitigate the potential uses of crypto-assets/currencies for money laundering. For example, Fernholz (2015) presented in his study the position expressed by the Bank of International Settlements (BIS) which argued that digital currencies are by their nature, an online product without constraints to be used cross-border, therefore a global and coordinated approach is necessary for the regulation to be fully effective. In addition, other studies presented the idea that it is not possible to regulate crypto-assets effectively without cooperation between states that allow their usage (Porter, 2003).

Malcom (2018) noted in his study that applications of digital technologies have long sought to navigate between transparency and anonymity, being characterized

as *quasi-anonymous* technologies. Nevertheless, the technology of crypto-assets allows the record of the transactions in the public register. The same author outlined in his study that according to Europol, Bitcoin is subject to multiple investigations related to crime activities, accounting over 40% of all identified criminal-to-criminal payments, but no evidence has been provided to sustain the affirmation. The quasi-anonymity of crypto-assets challenges traditional anti-money laundering instruments from the perspective of the identification of individuals and companies involved in money laundering. First, the lack of 'Know Your Customer' rules (Know Your Customer rules are subject to Anti-money laundering directive, which can be accessed on the European union law website, EUR-lex) in the case of crypto-assets/currencies due to the fact that crypto-assets providers were not subject to the anti-money laundering regime. In other words, it is a very difficult challenge to monitor transactions if the parties involved in the transactions are not known. The second problem is related to knowing exactly what a suspicious transfer would 'look' like, in the sense that it is difficult for the authorities and financial institutions to identify suspicious uses of crypto-assets, when crypto-assets are not a traditional instrument. In response to these issues and trying to mitigate potential money laundering risks, some of the crypto-assets providers decided to implement their own voluntary anti-money laundering standards. Nevertheless, this approach has conducted to variance between the anti-money laundering rules applied by the companies and challenges for authorities in monitoring the use of crypto-assets in illegal transactions.

At European level, the authorities took action in order to mitigate the anti-money laundering risk associated with the use of crypto-assets, and the European Commission issued a set of requirements for providers offering exchange services between crypto-currencies and fiat currency and digital wallet providers. The authorities considered that Directive (EU) 2015/849 of the European Parliament and of the Council is the appropriate main legal instrument in the prevention of the use of the financial system for the purposes of money laundering and terrorist financing. The EU framework is creating the premises to avoid the use of crypto-assets for criminal purposes by extending the scope of the Directive and including providers engaged in exchange services between virtual currencies and fiat currencies and custodian wallet providers, as obliged entities in the same way, as the financial institutions. The Directive requires Member States to identify, understand and mitigate the risks related to money laundering and terrorist financing, establishing a set of common rules for the financial institutions operating in the EU market.

The European authorities also noted that this legislative act would not entirely address the issue of anonymity, as users can also transact without crypto-assets providers and a large part of the crypto-assets market will remain anonymous.

In 2018, the European Commission defined the virtual currencies as *a digital representation of value that is not issued or guaranteed by a central bank or a public authority, is not necessarily attached to a legally established currency and does not possess a legal status of currency or money, but is accepted by natural or legal*

persons as a means of exchange and which can be transferred, stored and traded electronically. Defining virtual currencies, the population should be aware and better understand this type of technology and make a clear distinction between the forms of regulated money, such as electronic money, which is a digital equivalent to cash. In addition, the scope of the Anti-money laundering Directive is to cover all the potential uses of crypto-assets/currencies, respectively means of payment, means of exchange, investment instrument and store-of-value products.

Nevertheless, some researchers, for example Bjerg (2016), argued that crypto-assets/currencies do not pose a significant risk to the global Anti-money laundering efforts, little evidence being provided to support this concern. The same analyst noted that money laundering did not originate with the advent of crypto-assets, national currencies, and other digital technologies currently present equal if not greater money laundering challenges. This affirmation has to be understood in a proper way in our opinion, in the sense that traditional money and technology are used at large scale, despite crypto-currencies, which recently entered the market and they are still modest in size compared to traditional form of money.

2.2. Tax Policy Implication and Regulation

Crypto-assets are in a permanent and rapid evolution, therefore in the last years, tax policymakers and authorities have tried to analyse the risks posed by these types of assets. Still, the Organization for Economic Co-operation and Development (2020) argue that for the moment, the tax policy implications remain unexplored, although they are an important element for the overall regulatory framework for crypto-assets.

An important aspect in regulating crypto-assets is to understand how this technology is functioning and who takes part in the process. For example, Houben & Snyers (2018) presented in their study the tax implication on crypto-assets considering all the parts involved in creating, using and exchanging of crypto-assets, such as miners, wallet providers and exchanging platforms. They also outlined in their study the need of information in order to be able to apply tax requirements to crypto-assets, which was complicated due to their anonymity. Still, the aspect of anonymity may be considered addressed, as we will present in the next section of our paper.

In the phase of creation, the main activity that implies registering income is Mining. Actually, this refers to the process that transactions are verified and added to the blockchain-based ledger (record of transactions). The person performing this activity is called "miner" and by validating, the transaction may be entitled to *(i)* a mining reward, paid through new tokens, and/or *(ii)* a protocol transaction fee, which is a percentage of the value of the transaction being processed (OECD, 2020). This seems to be the most complicated activity from the taxation treatment, as the authorities do not know the identity of the miners.

For the storage of the crypto-assets, it is necessary to use a wallet in order to hold a token, which are provided by different types of digital wallet providers and the service is subject to a fee paid to the provider. In this case, the providers may be legal

entities registered with the activity they perform, and this should be subject to the taxation regime.

In the exchanging phase, to find potential buyers or sellers, a user may use an exchanging platform or a broker through a peer-to-peer network or a third-party intermediary (OECD, 2020). These services may facilitate the exchange between fiat currency and crypto-assets, for another type of crypto-asset, or for fiat currency. These services are also offered in exchange of a fee paid to the exchange platform, which should be a legal entity, and therefore subject to the tax regime.

Another element to consider from the taxation perspective is related to the function/scope of the crypto-assets. For example, Organization for Economic Co-operation and Development (2020) presented 'crypto-assets/currencies' to cover three main categories of digital financial assets that are based on DLT technology, i.e.: 1) payment tokens (also known as cryptocurrencies), 2) utility tokens and 3) security tokens. According to Blockchain, payment tokens are aimed to be used to make payments, while according to Bitcoinwiki, utility tokens are being used to finance the network and they are not mineable as payment tokens. The third category, security tokens are created with an investment scope, being used as financial instruments and classified as security under applicable law.

In addition, according to Organization for Economic Co-operation and Development (2020), the accounting classification should be considered from the perspective of the taxation regime for crypto assets, the organizations noting that there is no formal guidance available that indicates how crypto-assets should be classified for accounting purposes. Consequently, the existing general accounting principles should be applied, and crypto-assets should be classified based on their economic properties.

Some countries have issued guidance on the treatment of crypto-assets, but still, in most countries, and in the academic literature, there is often a lack of comprehensive guidance or a framework for the treatment of these assets for tax purposes. This lack of guidance may be in part due to the complexity of defining the tax treatment for these assets in a way that covers their different facets, as well as their rapidly changing nature (OECD, 2020).

2.3. Activities Involving Crypto-Assets: Implication and Regulation

The last issue we will present in this paper is related to the activities involving crypto-assets and the implication on the financial system and financial stability, especially considering the increase of their market capitalization. Consequently, in the last years European authorities (European Commission, European Banking Authority, European Securities and Markets Authority) reminded the public the risks related to the use of crypto-assets. As a first step in order to regulate the activities involving crypto-assets, the European Commission in a joint statement with the European Council (2019) concluded that only some crypto-assets could fall within the scope of EU legislation depending on their business model. This can lead to regulatory arbitrage at EU level and leaving consumer and investor without protection for the type of crypto-assets remaining outside of the scope of legislation.

Moreover, they noted that the existing EU framework might inhibit the use of the new technology, respectively DLT. In the same statement, the two authorities noted that some Member States have issued regulation on crypto-assets leading to market fragmentation.

As presented in the above sections, crypto-assets/currencies are a revolutionary invention and they have attracted enough users to draw attention of authorities in certain countries, but also to the European one. The European Commission (2019) expressed in an open letter the need for *a common approach with Member States on cryptocurrencies to ensure the most of the opportunities they create and address the new risks they may pose*. The European authorities *are committed to put in place a framework that will harness the potential opportunities that some crypto-assets may offer*. Another aspect noted in the same letter by the European authorities is that some member states have recently issued regulation regarding some issues on crypto-assets leading to market fragmentation in the Union. Moreover, it is important to create a framework for the protection of the investors in crypto-assets. Consequently, the European Commission had issued in September 2020 a *Regulation on market in crypto-assets*, being the first initiative to regulate the activities with these types of assets. The text of the legislative proposal can be accessed on the website of the European Union law, EUR-lex, document 52020PC0593.

According to the text of the legislative act mentioned above there are four general and related objectives: 1) the legal certainty of crypto-assets, because for crypto-assets to develop within the EU there is a need to clearly define their regulatory regime, 2) to support innovation and promote the development of crypto-assets, 3) to ensure the protection of the consumers and investors, and 4) to ensure financial stability and monetary policy.

Additionally, in the same proposal the European authorities argue that there is a need for a legal framework for supporting the crypto-asset providers to reach fully the benefits of the internal market. Moreover, in the assessment of the legislative proposal, the European Commission also noted that some Member States have already implemented a bespoke regime to cover some crypto-asset service providers or parts of their activity; still in the majority of the Member States they operate outside any regulatory regime. Another consequence of being unregulated is the fact that crypto-assets service providers are not able to scale up their activity at EU level, and they need to adapt to different practices between member states, which results in high costs for crypto-assets service providers. The European Commission affirmed in the proposal that by introducing a common EU framework, the complexity and costs for firms operating in crypto-assets space will reduce.

Finally, the European Commission pointed out that the absence of a common EU framework, leaves consumers and investors without protection and exposed to substantial risks, the proposal creating the premises to address these risks and offering to consumers and investors a clear understanding of their rights, as well as ensuring financial stability. It is also expected that regulating the activities with crypto-assets will bring more clarity from the taxation regime applicable.

Also, G7 (2019) outlined that a new type of crypto-assets – the so-called 'stablecoins' – has recently been promoted by a big social platform and attracted the attention of both the public and regulators, with a potential impact on financial stability due to their potential stable value and the network effects stemming from the companies promoting these assets.

3. Research Questions/Aims of the Research

The academic literature studied on crypto-assets focuses especially on elements related to the trading of crypto-assets, leaving some gaps from the legislative aspects on these types of assets. The regime of crypto-assets is one of the main concerns for European authorities, including central banks. The proper functioning and the stability of the financial system are crucial for the economy, and authorities are facing new technologies and assets/currencies develop and are being used outside the financial system, yet they are capable to induce risks in the financial system.

For example, European Banking Authority (2014) presented a comprehensive summary of risks related to the use of crypto-assets/currencies. The European Banking Authority defined 70 risks, divided into several categories based on who or what they threaten. The threatened groups include: (A) users of cryptocurrencies for business transactions, (B) users of cryptocurrency repository services or cryptocurrency exchange offices, (C) financial integrity, including money laundering and other crime, (D) existing payment systems, (E) regulatory authorities.

The majority of the European countries issued warnings to raise concerns to the population regarding this new technology, as the European Central Bank (2016) shows it, and they are trying to study the technology and the implications on the financial system.

In addition, over the last 5 years, authorities continued to monitor the crypto-assets ecosystem in order to be ready to react and mitigate the most important risks, such as money laundering, taxation and unregulated activities with crypto-assets. The authorities have considered in the last years the challenges posed by crypto-assets, which according to Coin Market Cap represent an overall market capitalization of USD 1,834 billion as of March 2021. The use and level of market capitalization of these assets has been increasing, posing challenges for authorities and policymakers.

This paper intends to present the relevant aspects related to crypto-assets from the regulation perspective and the implications posed by these assets, focusing on the European countries. The objective of our paper is to present the regime of crypto-assets from three main perspectives: *(1) taxation*, *(2) money laundering* and *(3) regulating activities with these types of assets*. The importance of the study we consider to be of high relevance in the actual context of the expansion of the crypto-assets ecosystem and appearance of new types of crypto, the so-called *stablecoins* aiming at having a stable value and be used for payments.

4. Research Methods

For the purposes of this paper, the information was collected from the available sources in every jurisdiction of the member states, focusing on the information published over the last 10 years. Our analysis covers the European territory, in the sense of the regulation regime adopted by the 27 member states. We also used elements presented in the academic literature for crypto-assets.

The research was realized by using both qualitative and thematic analysis, as the information analysed in this paper is not a numerical one, but one focusing on qualitative characteristics of crypto-assets. Qualitative analysis is a suitable instrument for various context and data.

Using the qualitative approach we identified the research questions and formulated them in general terms, we have done a deeper presentation and understanding of the research topic and, consequently a more complex explanation of it. In addition, the qualitative method allowed us to be descriptive in explaining the implications of crypto-assets to the financial system. Taking into consideration the aim of the paper, the qualitative approach offered us the possibility to study and understand crypto-assets, a very complex and new element in the economy.

The methods applied to study the information collected for the purpose of this paper allowed us to understand crypto-assets and their consequences/implications in the financial ecosystem.

5. Findings

The paper presents the principal issues on crypto-assets regime at EU level. As it was shown in this paper and in the academic literature studied (Bjerg, 2016; Fernholz, 2015; Houben, 2018; Malcom, 2018), crypto-assets/currencies pose numerous risks but also numerous opportunities compared to conventional payment/investment methods. In order to address the most important risks related to crypto-assets the authorities have taken actions at EU level. In the case of anti-money laundering regime, all the EU member states apply the same rules established in Directive 5 for the anti-money laundering. For the tax treatment, the countries issued national rules, this aspect not being regulated under a common EU framework. Last, for the activities with crypto-assets, the proposal for market in crypto-assets is negotiated, which proposes a single common market for crypto-assets across the Union, with the same rules for providers offering services with these types of assets.

As it can also be seen in this paper, the majority of the countries and authorities focused on the risks posed by crypto-assets, not on opportunities that cryptocurrencies offer.

The main results obtained after applying the research methods mentioned above are presented in a structured manner in the table below. As it can be seen, at EU level there are rules in place for AML and tax supervision of crypto-assets, a gap from supervision of activities being in the majority of EU countries. Still, as we have presented in the paper, this element is also considered by the authorities, and the

European Commission has proposed an institutional EU framework with respect to the regime applicable for activities involving crypto-assets.

Table 1. Crypto-assets regime in the EU countries

EU Member States	AML regulation	Tax regulation	Activities involving crypto-assets regulation
Austria	Yes, AMLD5	Yes	No
Belgium	Yes, AMLD5	Yes	No
Bulgaria	Yes, AMLD5	Yes	No
Croatia	Yes, AMLD5	Yes	No
Cyprus	Yes, AMLD5	-	No
Czech Republic	Yes, AMLD5	Yes	No
Denmark	Yes, AMLD5	Yes	No
Estonia	Yes, AMLD5	Yes	No
Finland	Yes, AMLD5	Yes	No
France	Yes, AMLD5	Yes	Yes – activities with financial instruments related to crypto-assets
Germania	Yes, AMLD5	Yes	No
Greece	Yes, AMLD5	Yes	No
Hungary	Yes, AMLD5	-	No
Ireland	Yes, AMLD5	Yes	No
Italy	Yes, AMLD5	Yes	Yes
Latvia	Yes, AMLD5	Yes	Yes
Lithuania	Yes, AMLD5	Yes	-
Luxembourg	Yes, AMLD5	Yes	-
Malta	Yes, AMLD5	Yes	-
Netherlands	Yes, AMLD5	Yes	-
Poland	Yes, AMLD5	Yes	-
Portugal	Yes, AMLD5	-	-
Romania	Yes, AMLD5	Yes	-
Slovakia	Yes, AMLD5	Yes	-
Slovenia	Yes, AMLD5	-	-
Spain	Yes, AMLD5	Yes	-
Sweden	Yes, AMLD5	Yes	-

Source: Adapted by the authors after collecting the information from the public sources, which are indicated at the end of the paper.

Note: 1) The information for the taxation regime was collected from the document OECD (2020), Taxing Virtual Currencies: An Overview of Tax Treatments and Emerging Tax Policy Issues, OECD, based on the information provided by the delegates of the countries; 2) For the AML regime there is in place a European directive, so all the EU member states adopted the same rules; 3) for the activities involving crypto-assets, the information was collected form the available public sources and it is indicated accordingly.

To conclude, our results highlight the concerns of the authorities on crypto-assets and their impact on the financial system, presenting a clear intention to regulate these

types of assets in order to protect consumers/investors, promote innovation and ensure market integrity.

6. Conclusions

The developments from the last years indicate shifts in society of what is perceived as monetary value, which should not be understood as alarming ones, but as new services that entered the market and are here to remain and compete with the traditional form of money.

Crypto-assets are expanding globally and the authorities already reacted in order to mitigate the risks posed by this new technology, respectively from the perspective of taxation, anti-money laundering and activities with crypto-assets. These are the first steps made by authorities in order to regulate crypto-assets, addressing the main issues, but understanding at the same time that the financial system is facing important challenges and regulating crypto-assets will solve some of the issues, but will also identify other risks that are to be addressed in the future.

Until the moment this paper was written, we did not find evidence to indicate countries prohibiting the use of crypto-assets, so we can argue that crypto-assets are broadly considered to be 'legal' in the Union.

To conclude, we can state that it is obvious that the lack of regulation may contribute to risks related to the use of crypto-assets. The first step has been made at EU level by the issuance of the AML Directive and we can claim that all Member States implemented the requirements and a common approach and effort have been made from this perspective. Of course, as presented in this paper, additional measures may be needed in the future, some gaps remaining due to the technology, i.e. the fact that transactions with crypto-currencies can be performed in the blockchain without an intermediary, such as exchange/digital wallet provider.

The European Commission has made another additional step at the end of 2020 with the goal of regulating the activities with crypto-assets, supporting the innovation and protecting market integrity. The new EU framework on crypto-assets will contribute to the development of crypto-assets in a secure and safe manner for the consumer, offering at the same time proper instruments for authorities to ensure the suitable/appropriate function of the financial system.

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A Critical Review of Global Logistics Providers in Romania

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Abstract

For a long period of time, logistics has been restricted to local or, in best cases, to national level. This was due mainly to the fact that, for many businesses, logistics was only a cost driver, so the only concern was how to contain this cost. However, when management realized the value lost due to poor logistics, they became interested in integrating logistics in their strategic planning process. As such, logistics moved to a global level, at the same time with the customers that started to play globally.

The objective of the study is to understand how logistics expanded to a global level, what are the new market characteristics and what is the role of the global logistics players in this context. The paper presents the main global players in the industry and their evolution so far. In order to streamline their research, the authors will focus on the European market in general, and on the Romanian market, in particular. As such, a representative sample of global logistics providers with regional/local presence will be analysed. The results of the study present the strategic mapping of the global logistics providers in Romania.

Keywords: Global logistics, service providers, logistics market Romania, strategic mapping.

JEL Classification: L11, L21, L91, R40.

1. Introduction

The logistics industry in Romania is still in its inception. However, the Romanian logistics services market has experienced a significant growth in the last years. This has generated multiple opportunities for the market players, but also a lot of confusion. This confusion is present also with regard to the range of services provided on the market. Therefore, it is difficult to benchmark the suppliers of logistics services, as well as to establish their nature.

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The nature of a logistics service provider cannot be understood unless we investigate what outsourcing means. More specifically, one has to understand what outsourcing is, why companies outsource, what they outsource, to whom, etc. In just one sentence, outsourcing comes with the classic dilemma: make or buy.

In a study dedicated to logistics outsourcing in the UK, Rafiq and Jaafar (2005) explored the nature of outsourcing. Outsourcing is largely regarded as a tool aiming to achieve two main objectives: lowering the costs and gaining competitive advantage. The research of the Outsourcing Institute shows that that companies gain 9% costs saving and a 15% increase in capacity and quality, on average, due to outsourcing.

Finally, it should be mentioned that this kind of studies have not yet been performed in Romania. Very few authors have addressed this topic, mainly due to the infancy of the market. Therefore, the research will be primarily exploratory, using mainly qualitative methods.

2. Problem Statement

The literature review aims to identify the main trends that shape the industry, by comparing, contrasting and integrating the research done up to date.

Taylor (2005) identified five major reasons explaining why logistics extended to global level:

- Managing rising logistics cost – continuing the above ideas, logistics costs represent now about 10% of sales value and the value is increasing. Such rise is explained through internal factors (e.g. new technologies) or external factors (e.g., fuel, labour). A specific aspect is global sourcing: in order to purchase globally (thus getting the associated benefits) you also need to build the structures to deal with global sourcing. However, this increases complexity and, finally, logistics costs!
- Lean manufacturing – the emergence of lean concepts in manufacturing has "forced" logistics to adapt. The main impact on logistics was the reduction of inventories, as well as of costs. However, reducing inventories means also longer transport and transit times. Moreover, inbound and outbound supply chains have to be integrated. All of these come, again, at a cost…
- Operating as an on-demand business – coming from lean, many companies try now to maximize their reaction to customer needs. IBM defines an On-Demand Business "as an enterprise whose business processes — integrated end-to-end across the company and with key partners, suppliers and customers — can respond with speed to any customer demand, market opportunity or external threat". The key word here is flexibility and therefore outsourcing plays a major role, by also making the costs variable instead of fixed. Nevertheless, building such a structure requires a rigorous top-down planning process, as well as a permanent open eye on the market.
- Cross-functional sourcing decisions – global sourcing has become a reality of these days. However, in order to take the right decisions, you need to know the

logistics capabilities and costs. As such, building a global logistics network is the main enabler for an efficient global sourcing.

- Supply chain management – logistics is now part of a larger concept. According to Martin Christopher, "supply chain management is the management across a network of upstream and downstream organizations, information and resource flows that lead to the creation of value in the form of products and/or services". Such a view drives logistics on its path to globalization.

After seeing how logistics moved to globalization, it is now time to investigate what services are performed at a global scale, what are the differentiators, and what cross-border issues arise when logistics services are performed globally.

Mentzer et al. (2004) introduced the concept of LSQ (Logistics Service Quality) as a sum of elements that work towards customer satisfaction. Initially, LSQ was defined as a static construct with nine dimensions, separated in two categories (order placement and order receipt). However, in a subsequent research, LSQ is seen rather as a process, where suppliers can identify the drivers of quality.

Concerning to international services, Mentzer et al. (2004) maintained that cultural differences influenced logistics services; for example, each culture has its own perception with regard to timeliness and responsiveness. The author proposes a model, whereas national and regional characteristics are seen on the same scale of importance as organizational characteristics. Potential customers will always choose a logistics provider that takes into account all these special features.

However, in another research, Bhatnagar and Viswanathan (2000) argue that globalization is somewhat contradictory with the other major strategy in today's world, which is time-based competition. The authors studied the global alliances between manufacturing companies and global logistics services providers (GLSPs), maintaining that both groups of companies have developed complementary expertise in time. For example, GLSPs increased their expertise in technologies like warehouse automation, barcode scanning, etc., thus making them a strategic partner for the manufacturing companies. This relation evolved continuously to a strategic alliance, characterized by two attributes:

- Share costs and value opportunities for both parties;
- Utilize the competitive advantage of one party to increase the competitive advantage of the other party.

Bhatnagar and Viswanathan (2000) concluded that such an alliance usually brings a total re-engineering of the supply chain, too. The given example is the alliance between Motorola and UPS, which provided both significant benefits in terms of cost reduction and service increase (Motorola) and volumes consolidation (UPS).

Tan et al. (2006) bring the view of SMEs in relation to global supply chain. Given their small size, SMEs can take advantage of globalization only by working together (e.g., building strategic alliances). This also includes logistics partnership between a "normal" SME and a "logistics" SME. The authors gave the example of a small British producer of electronics who partnered very successfully with two Asian companies. The framework for this collaboration was:

- Jointly established objectives
- Supplier selection
- Management control
- Quality control
- Evaluation and feedback

Tan et al. (2006) also highlighted the cultural aspects involved in such a partnership. UK and China have very different cultural approaches (e.g., formal vs. informal) that should not be neglected.

Following the look-up on global logistics, a more detailed view on regional level is necessary. Europe has remained somehow behind US in terms of logistics services, especially with regard to concentration of suppliers. The European market is still dominated by local providers who manage to perform high quality services. This does not exclude the presence of large logistics providers, like DHL.

The same aspects were found by Carbone and Stone (2004), who captured the market heterogeneity very well. They argue that the industry is moving through evolutionary change, both in terms of capabilities and offers. Moreover, few logistics providers are making all revenues only from logistics services; many of them are still very active in transportation and/or courier services. However, the major European logistics providers are moving to horizontal integration and business diversification, especially by acquiring specialized companies. Due to this intense M&A activity, the landscape of European logistics has changed dramatically in the last years.

The outsourcing concept and the evolution of logistics providers is little widespread in Romania (Vasiliu and Dobrea, 2013). The authors carried out a research on the concept and its application in Romanian companies, concluding that the level is low and the role of logistics service providers is undervalued. The authors also note that research in this area is relatively rare, with few studies leaning on this market, recommending that the subject be approached at doctoral thesis level.

An analysis of the occupancy of storage facilities reveals that the main tenants are logistics providers (Ţarţavulea and Petrariu, 2013). However, the authors look at the subject from the point of view of the landlords, mentioning only by way of example a few logistics service providers, without going into details on their modus operandi. It is also worth noting that the market has experienced an accelerated development in recent years, which needs to be investigated.

3. Research Questions/Aims of the Research

The objective of the study is to understand how global logistics providers have adapted to the Romanian market. More specifically, the research hypotheses, rephrased as questions, are: 1. What is the preferred strategy used by global players in Romania? and 2. Is there any relation between strategic position and market winning?

4. Research Methods

The study is also an exploratory research, due to the novelty of the theme in Romania. Such a research aims to discover more about the market and develop some conclusions. According to Beal (2002), "an exploratory research can be defined as potentially useful knowledge building in a new area. This research often yields important competitive advantages as new opportunities emerge".

Other authors, like Saunders, Lewis, Thornhill (2007) maintained that "an exploratory study is a valuable means of finding out what's happening; to seek new insights, to ask questions".

The LSPs have been selected based on two cumulative criteria: global/regional presence and significant market share in Romania. In other words, global/regional players with no presence in Romania were excluded (ex. DHL); and the vice versa, strong providers with operations only in Romania were not taken into account. Public charts provided by specialty media (ex. Cargo Magazin, Traffic Media) were used also in selection of the LSP's. Last, but not least, the authors have worked for several years in the industry, therefore own judgment was also used.

Based on the above considerations, the selected sample is representative for the Romanian logistics providers industry.

The selected companies are:

- DSV Solutions
- DB Schenker
- Kuehne + Nagel
- Gebruder Weiss
- FM Logistic
- KLG
- H. Essers
- Quehenberger
- ID Logistics
- Hopi
- Yusen Logistics

5. Findings

The companies selected will be presented taking into account their main features and characteristics. Few important items will be highlighted, which differentiate them, in order to understand their position in the market.

DSV is a worldwide logistics provider with a good presence in Romania. The local initial company started back in 1994, being the first logistics company to operate in Romania. DSV acquired the local business in 2006, and further integrated it into DSV. Currently, DSV operates nine locations and manages over 100,000 sq.m Class A warehouses. Due to its size, DSV affords to operate in all the business sectors. Of course, this does not mean everything, but DSV has in its portfolio multiple customers from automotive to cosmetics and food & beverages. The range of services provided is also impressive: warehousing, domestic and

international transport, value added services (co-packing, kitting etc.). This strategy was intentionally chosen and proved correct especially during this time of crisis, allowing DSV to capitalize on the business fluctuations of their customers.

DB Schenker is a well-known worldwide logistics company. Their presence in Romania dates from the late 90's, but only in relation with activities mainly in the area of customs clearance and freight forwarding. In 2007, Schenker acquired and integrated the former transport state company, Romtrans. After Romtrans integration, the company pursued an aggressive development strategy. The company operates more than 70,000 sq.m Class A warehouses, with various customers from different industries. In terms of turnover, the company was the market leader in 2020.

Kuehne & Nagel is an international logistics company active mainly in freight forwarding, but with a substantial presence in contract logistics. Currently, they operate in Romania about 60,000 sqm with a focus on spare parts Logistics, E-Commerce, Co-Packing.

Gebruder Weiss is a regional company that places a great emphasis on outsourcing and partnership. Most of their customers are regional companies that follow them in the Eastern and Central Europe. The company offers intelligent logistics solutions for its customers and provides flexible distribution services by road, rail, air and sea. Present in Romania since 1994, Gebrüder Weiss is based on a national infrastructure with 9 logistics hubs located all over Romania. Since 2018, the company has launched a home delivery service in Romania, focused on cargo goods, and in 2020 it opened a logistics hub dedicated to this service, where cross-docking operations are managed, the logistic terminal serving the entire country. GW has launched a comprehensive digital strategy, aiming to improve visibility and traceability of its customers' shipments through myGW, a dedicated portal.

Founded in 1967, *FM Logistic* is a major global player in supply chain with expertise including warehousing, transport and co-packing. In Romania, FM entered in early the 2000s with three anchor customers: Nestle and P&G (in Timisoara) and Cora (Delhaize retailer, in Bucharest). After this start, FM Logistic further developed in a specialized logistics provider, with a focus on cosmetics and beauty, healthcare, home and personal care. Currently, they operate 102,000 sq.m owned warehousing area (the only exception, together with H. Essers, in the Romanian market, all the other operators are renting their warehouses from different landlords).

KLG Europe is a former Dutch family company, with operations in Western Europe. In 2006, the owners decided to also enter in Eastern Europe, using Romania as start-up. As it was the case with other foreign 3PLs, KLG started with an anchor customer – this was a major white-goods retailer, called Domo (now bankrupt). After a successful development in Romania, in which the company has reached more than 66,000 sqm of warehouse, it was acquired by Sinotrans, a Chinese company.

H.Essers Romania, part of H.Essers Group, is a Belgian company, headquartered in Oradea, Bihor, but with significant operations in Bucharest. H.Essers build and own their warehouses and currently they operate more than 105,000 sqm in Romania. Their focus is on pharma, chemicals and technical care, industries where security and compliance are extremely important.

Quehenberger is an Austrian logistics provider. Currently, they operate in Romania more than 200,000 sqm in several branches all over the country. They focus on industries like textiles, automotive, e-commerce.

ID Logistics is a French logistics provider, focused on the retail industry. In Romania, they entered few years ago through a contract with Carrefour, which helped them to expand to more than 100,000 sqm.

Hopi was founded in 2013, having its headquarters in Timisoara, and once the logistic contract with P&G was signed, it gradually expanded its customer portfolio. In 2017, it expanded to Bucharest area as a logistic service provider of Fater Romania. The company currently operates warehouses in Timisoara and Bucharest, for international and local clients, while also providing international transport services.

Formerly known as Tibbett Logistics, *Yusen Logistics* is specialized in various industries and operate more 150,000 sqm in Romania. They are one of few logistics providers that developed a multi-modal connection via rail, in their dedicated terminal in Bucharest.

In order to make a final assessment of their strategic position, we will use the well-known Porter classification of generic strategies, where companies described above will be pictured. Although challenged as being simplistic (Porter himself reviewed it several times), the clear distinction between cost leadership, differentiation and focus is still valid. The logistics providers were included in the Porter matrix based on their perceived main focus, which was judged according to information presented in their above description. As an example, DSV is playing broadly, with a distinct low-cost approach on cost, while ID Logistics is focused only on retail sector, but with the same attention to cost.

Table 1. Strategic map of Romanian logistics providers

Target market	**Competitive Advantage**	
	Low cost	**Product uniqueness**
Broad (industry wide)	Cost leadership strategy DSV DB Schenker KLG Europe	Differentiation strategy Gebruder Weiss Kuehne + Nagel FM Logistic
Narrow (market segment)	Focus strategy (low cost) ID Logistics Hopi	Focus strategy (differentiation) H. Essers Quehenberger

Source: Authors' own research.

First of all, it should be noted that the above classification is not strict. Some companies cannot fit exactly into only one category. Another particularity for logistics industry is that, for all the companies, the cost is extremely important - margins are very small here; in other words, without a major focus on costs, there is no profit.

On product uniqueness, it should be noted that, in logistics, there is no such thing like "unique" product. More or less, all the companies offer the same thing – how they offer it is different.

Another important aspect highly discussed in the literature and very significant in practice is the relation between the logistics service provider and the customer. Large (2007) proposed different steps of evolution in the relation with customers, from simple, contractual to partnership. The declared objective of all logistics providers interviewed is to become truly the logistics partner of their customer.

Large identified the integrator as the most advanced level of relationship. Sometimes called logistics service providers 4.0 (even the concept is challenged in the literature), these companies take over the management of logistics from the customer, often at regional or global scale. In Romania, however, the market has not reached this level, as none of the logistics service providers interviewed is acting as an integrator.

6. Conclusions

As can be seen, the logistics landscape is quite diverse in Romania. Fuelled by an impressive growth in the last period, it has allowed the development of several players and services. The global providers have seized the opportunity and penetrate the Romanian market in a professional and systematic way. They brought significant know-how and leverage their global expertise, but, at the same time, adapted it to the local realities. Without any doubt, the global logistics providers now dominate the Romanian market and it is very likely that they will continue to do so in the future.

The practical side of the research should also be highlighted. Many managers are looking for a guide when deciding to outsource. While business magazines provide them some insights, practitioners cannot find an integrated work, which aims also to compare the logistics providers. So, it can be concluded that the present research is highly desirable, both by academia and managers.

The aim of the study was to investigate the logistics market in Romania in a qualitative and exploratory study. Because of its limited scope, the findings of this research may not be extrapolated, without the risk of being deemed as irrelevant, to other industries or to other types of companies. The sample selected included almost all the logistics providers in Romania. It can be said that the entire market was covered during the research. Nevertheless, new players enter the market continuously or current ones change their strategy, so the study is limited to the current moment and needs to be re-assessed in time.

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Conceiving Resilient Solutions for Tourism during the COVID-19 Pandemic

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Abstract

Until 2019, tourism was one of the most dynamic economic activities in the world, holding the third place in the world for exports, after fuels and chemicals. In 2019, tourism registered a number of 1.460 million tourist arrivals and 1.481 USD billion tourism receipts, according to the United Nations World Tourism Organization (UNWTO). At the same time, tourism is a very sensitive activity to the occurrence of unforeseen factors, which can strongly affect this activity. The COVID-19 pandemic is one of the factors with a major impact on economic activity in general and on the tourism activity in particular. The negative effect of this unprecedented health crisis on tourism has been noticed from the very beginning. The pandemic has affected tourism worldwide, with major losses in tourist arrivals of 74% in 2020 compared to 2019. Despite all these difficulties, tourism is looking for solutions to resume business, and the administration of anti-COVID-19 vaccines offers a chance for economic recovery, some countries offering a new "all inclusive" package that includes the anti-COVID-19 vaccine. The paper aims to analyse how countries in which tourism plays an important role in the economy manage to find solutions for tourism recovery, sometimes using newer, atypical solutions.

Keywords: COVID-19 pandemic, domestic tourism, medical tourism, resilience, vaccine.

JEL Classification: I18, L83, L88, Z33.

1. Introduction

The tourism industry is one of the most important and dynamic industries, but in 2020, it was among the most affected by the COVID-19 pandemic. In fact, 2020 was the worst year in tourism history, with 1 billion fewer international tourists, down 74% from 2019, and losses were estimated at 1.3 trillion USD in export revenue (UNWTO, 2021). On the European continent, the total share of travel and tourism

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in GDP in 2020 decreased dramatically compared to 2019 due to the pandemic, from 2.191 billion USD to 1.065 billion USD (Statista, 2021a). The speed with which the virus spread led to a dramatic decrease in tourism activity, especially after the declaration of the pandemic by the World Health Organisation (WHO), on March 11, 2020. International tourism has been particularly affected, but in many countries domestic tourism has also suffered especially during the lockdown (WTTC, 2020).

The tourism industry is highly vulnerable to many factors, including natural disasters, pandemics, terrorist attacks and more (Yeh, 2020). Pandemics are not new to human history, and the twentieth century has been repeatedly affected by the spread of dangerous viruses, which have manifested themselves more regionally, with varying intensities. Influenza pandemics are not only unpredictable, but also periodic events that can have serious consequences both for human health and economically (Del Rio & Hernandez-Avila, 2009).

Although in the 1970s it was believed that infectious diseases were defeated and remained a thing of the past, the early 21st century was marked by such epidemics as Severe Acute Respiratory Syndrome (SARS) and avian influenza A (H5N1) in the 2000s, as well as Middle East Respiratory Syndrome (MERS) and Zika virus disease (ZVD) in the 2010s (Hall, Scott & Gössling, 2020; Yang et al., 2020). The COVID-19 Pandemic (Yeh, 2020) is also one of them, but much more threatening.

Countries that have gone through various epidemics have mastered some personal hygiene practices, such as hand washing, as a measure to stop the spread of the virus but also as a necessary first step in health education (Chia & Oyeniran, 2020). After all, in the absence of specific medical treatments for coronavirus dysfunction, prevention is the first course of action (Cucinotta & Vanelli, 2020; Oyeniran & Chia, 2020) and citizens should be informed so that they are aware of the importance of prevention. In addition, first aid kits have been devised to restrict the spread of the virus, and intensive training of medical staff in using appropriate infrastructure and specific equipment in the fight against the disease has been performed.

China's case for fighting infectious diseases (Liang et al., 2012) is worth mentioning in this respect. There has been remarkable progress in building a national public health system and hospitals for infectious diseases in China since the country faced the SARS epidemic in 2003. Even techniques of traditional Chinese medicine have been put into practice. Traditional Chinese medicine is attracting more and more tourists (many of them being Russians) who come for treatment. Traditional Chinese medicine can also make a difference for domestic tourism, to restore post-COVID-19 health, to former COVID patients (Wen, Wang & Kozak, 2021).

Another important lesson learned from the experience of states that have gone through flu epidemics has been communication (Liang et al., 2012), delivering information about the latest findings and preventive measures, which can be applied in potential pandemics or emergencies of the public health system. The resumption of safe tourist activities in tourist destinations, took into account, among other things, the request for negative Polymerasen Chain Reaction (PCR) tests. On November 1, 2020, 126 destinations, or 58% of the total, requested such a test from international

tourists, and 10 destinations required tourists to be quarantined on arrival (UNWTO, 2020).

This article aims to contribute to the burgeoning literature on tourism and health threats, especially infectious diseases that are spreading rapidly, affecting more and more large spaces and their longer-term implications. Since the Spanish flu, in the last century, until the current COVID-19 pandemic, there were no manifestations of such a great impact on a global scale on the conditions of modern medicine and advanced research in the field. -

2. Problem Statement

Sharma, Thomas and Paul (2021) propose a framework based on resilience for the revitalization of tourism, identifying four essential factors. Domestic tourism is a solution for resuming tourism activity and contributes to restoring the physical and mental health of COVID-19 patients (Osadchuk et al., 2020). Restoring domestic tourism through the development of traditional Chinese medicine is addressed by Wen, Wang and Kozak (2021). The need for patient rehabilitation for a shorter or longer period of time is particularly important (Amatya & Khan, 2020), in addition to health protection (Chhabra, 2020) and orientation towards therapeutic tourism. Last but not least, several authors present the vaccine as the best solution to travel with the lowest possible risk (Dubé & MacDonald, 2020; Liang et al., 2012; Loss, 2021; Martinez-Rodriguez, Gonzalez-Parra & Villanueva, 2021).

3. Aim of the Research

The research aims to highlight the way in which tourism identifies resilient solutions through the development of a tourism oriented towards health care, through medical spa or spa and wellness tourism, but also through safe travel conditions, based on vaccines.

4. Research Methods

To highlight how tourism has been affected by the pandemic, both the quantitative and qualitative methods – can help us make a comparison between the relevant data for 2019 and 2020. For tourism it is important to analyse the number of international and domestic arrivals, tourism revenues and the contribution of tourism to GDP. In order to carry out this research, data provided by WTTC, UNWTO, INS and Statista were used.

5. Findings

5.1. Domestic Tourism

Domestic tourism decreased globally, in 2020, by 45%, compared to 2019, achieving revenues of 2.36 trillion USD in 2020, compared to 4.29 trillion USD in 2019 (Statista, 2021b).

As travel restrictions began to rise, it was noticed that during the summer season, domestic tourism enjoyed more and more attention. Governments in several countries have encouraged this by providing aid in the form of vouchers (Poland, Croatia, Slovenia), tax breaks or other ways to support tourism in times of crisis (ETC, 2020; Osadchuk et al., 2020).

In Europe, in 2020, more tourists chose domestic tourism, which accounted for 73% of the total contribution to European GDP, compared to 2019, when participation was 66% (Statista, 2021c). However, spending by domestic travellers in Europe reached almost 631 billion USD in 2020, whereas it peaked at over 1.222 billion USD in 2019. Domestic tourism expenditure in Europe decreased by roughly 48 percent in 2020 over the previous year (Statista, 2021d). Among European Union (EU) member states, the highest spending on domestic tourism is recorded in Germany (54 billion euros on overnights trips, in 2019), followed by France, Spain, Italy, Sweden, Poland and others (Statista, 2020).

In the case of Russia, tourism is slowly recovering as a result of reduced restrictions and the possibility of domestic travel, and resorts in Crimea, the Baltic Sea, the North Caucasus and the Altai (Osadchuk et al., 2020).

In the United States, another country where domestic tourism has a very high share, various initiatives have been launched, such as "NYC-Cation", to encourage locals and regional visitors to stay and support the revitalization of New York exploration in these difficult times (WTTC, 2020).

Domestic tourism is a first step towards the resumption of tourist activity. It is deemed safer, from a health point of view, because it allows travel with the tourists' own means of transport, in a restricted environment, usually with family, thus avoiding congestion and enclosed spaces. Also, the fear of being quarantined has determined tourists to be more reserved in choosing remote destinations and to prefer destinations closer to home, which gives them more security. In Romania, throughout the COVID-19 pandemic, there has been a preference for more isolated, smaller accommodations, which involve smaller groups of tourists (Figure 1).

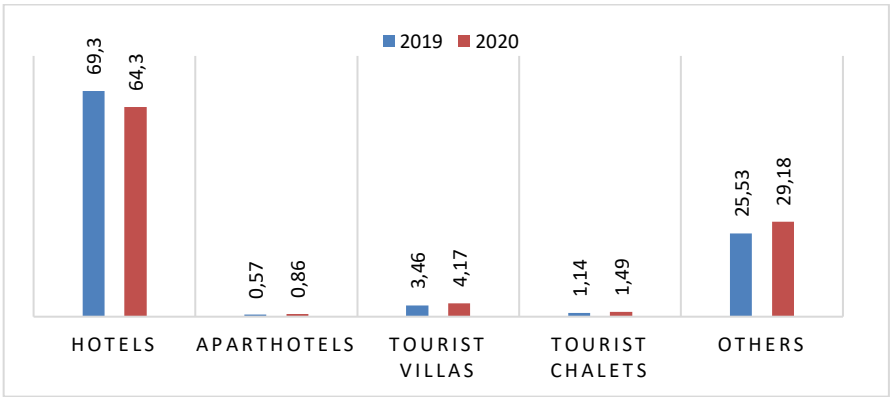


Figure 1. Establishments of tourists' reception with functions of tourist accommodation, 2019-2020 (%)

Source: The authors, using INS data (2021).

This tendency to choose domestic tourism has also been observed in China, which even before the pandemic practiced this form of tourism (WTTC, 2020). Among the preferences of tourists are outdoor destinations, less crowded, rural areas, or small towns, special attention being devoted to exercise and outdoor sports, activities that are also promoted by the European Travel Commission (ETC) (ETC, 2020).

5.2. Medical Tourism

The increasing susceptibility to the threat of pandemics at the beginning of the 21st century can be attributed to several reasons, such as increasing global mobility and numerical population growth worldwide; increasing population density in urban areas, more dependent on supply chains with food; and the nature of global transport networks (Hall, Scott & Gössling, 2020; Labonté, Mohindra & Schrecker, 2011), which have played an important role in the spread of the virus. Therefore, there is a need for a therapeutic oriented tourism, which has an important role in the recovery of patients or people affected by the restriction period. Restoring health can be quite expensive and time consuming (Amatya & Khan, 2020). Medical tourism, within the medical services provided, usually includes the diagnosis, treatment, cure, prevention and rehabilitation of the person traveling for this purpose (WTTC, 2020), and the purpose is to improve or rehabilitate health through medical interventions.

Health care abroad has grown rapidly, especially in the early 21st century, although medical tourism has been gaining ground since the 1980s, when several Latin American countries offered dental procedures, cosmetics and various surgeries to patients in the US and Europe, at cheap prices. The increase of the interest for medical interventions performed in another country that offers such medical services was possible also against the background of economic development, the increase of the population income from the countries that provide patients such procedures, and easier communication facilities. Among the main interventions are organ transplantation, cardiac and reproductive operations, but also cosmetic and dental procedures (Chen and Wilson, 2013). Health care abroad is associated with various issues, of a financial, legal, ethical nature and is closely linked to the process of globalization. Among the factors that determine patients to opt for medical interventions abroad are the type of medical intervention, infrastructure, modern equipment, the attention paid by medical staff and finally yet importantly the availability of medical service and especially lower costs (Mutalib et al., 2016). To these are added privacy and the opportunity to recover away from home, which combines an exotic vacation with a medical procedure (Chen & Wilson, 2013).

Nearby tourist attractions increase the decision, because many interventions involve spending more time in the area, and the natural setting facilitates the patient's recovery faster after a medical intervention. Countries that have turned to this form of tourism are located especially in Asia, such as India, Thailand, South Korea, Malaysia, Singapore, and Philippines; but there are also Latin American countries

that are practicing medical tourism, such as Argentina, Brazil, Costa Rica, Cuba, and the Dominican Republic.

Malaysia was poised to receive an estimated 2 million tourists for medical treatment in early 2020, but the onset of the pandemic has hit medical tourism and tourism in general. The number of tourists who chose Malaysia for medical tourism doubled in 2011-2018, from 643,000 USD to 1.2 million USD, most coming from countries such as China, the United Kingdom and the United States. Worldwide, the tourism market reached 87.5 billion USD annually. The same drastic decline hit Thailand in 2020 (Tatum, 2020).

One of the countries recognized for practicing medical tourism is Cuba. This activity has been supported by the Cuban government since the 1990s, when tourist packages accompanied by medical treatments were offered under the name of "sun and surgery", a package intended especially for cardiac and transplant operations (Mutalib et al., 2016). In the new pandemic context, Cuba is trying to expand its medical program by offering the COVID vaccine, Soberana-2, still in testing, which it wants to produce and which will be offered to foreigners who want to be vaccinated (Yaffe, 2021).

In medical tourism, India is one of the countries that receive a number of patients coming for health care, many of them patients from the UK, and one of the dilemmas is whether it is ethical to treat patients from another country rather than the country's own patients (Meghani, 2013).

Until the COVID-19 pandemic, medical tourism has migrated from developed countries to developing countries, especially to avoid high costs or to reduce the waiting period. However, in the context of the pandemic generated by SARS-CoV-2 virus, a change of direction has taken place, i.e. from developing countries to developed countries and especially to countries that are the main producers of vaccines, with the hope of obtaining faster anti-COVID-19 serum, shortening the waiting period in the country of origin.

In the conditions of the COVID-19 pandemic, tourism takes place in specific conditions of social distancing and self-protection, so that a new tourist model is required, based on wellness that facilitates the healing process, exploiting the overall therapeutic potential of tourism. Once a patient is cured of COVID-19, the recovery process should continue to regain lung health. In almost all cases, a complex recovery program based on movement and the practice of light exercises to strengthen the muscles, sufficient rest and a balanced diet are recommended.

Depending on the severity of the impact of COVID-19, patients may suffer a number of functional and psychological disorders in both acute and subacute stages, especially respiratory failure, dyskinesia, neuromuscular and cognitive disorders and stress, etc. (Khan & Amathya, 2020).

5.3. Spa Treatment and Medical Centres

In the new conditions created by the pandemic, the development of forms of tourism that can take place throughout the year becomes more and more attractive, which reduces the imbalances created by seasonality,. This is the case of medical

and spa tourism. Not only do COVID-19 patients require post-COVID recovery, but so do other people who have had to spend more time at home, in solitary confinement, or working from home. All these people need to restore their physical and mental capacity, and the treatments offered in the spa and wellness centres help to relax, together with the natural resources in the area (baths, mineral water cures, mud cures, etc.).

In different countries, several spas have prepared tourist packages especially for patients who have suffered from COVID-19, for a faster and total recovery. Thus, based on medical recommendations from the treatment bases, tourists benefit from various procedures designed to help them regain their basic functions, such as restoring lung capacity, blood oxygen saturation levels, muscle strength, tolerance to stress, but also a normal diet and a restful sleep (Osadchuk et al., 2020; WHO, 2020).

Natural resources are very important for the development of health tourism. Romania, for instance, has mineral springs, hydrothermal springs, and healing mud, among other. At Băile Govora, a resort with a respiratory and rheumatic profile, approximately 30% of the tourists who currently arrive in the accommodation units come for recovery after COVID (Ziarul Financiar, 2021). Băile Govora offers a post-COVID-19 treatment package, based on a recommendation from a pulmonologist, for a spa treatment for post-COVID-19 recovery which is 100%, naturally, through the power of healing factors and spa treatment, followed by respiratory gymnastics. One of the procedures followed by patients who have had COVID is performed in the area of inhalation therapy. Another procedure is ultrasonic aerosol. Characteristic for this area is the presence of mineral waters, which are natural therapeutic factors used in the treatment of various respiratory diseases. Very useful in treating respiratory diseases are sulphurous waters, with a very high concentration, but also iodized and brominated waters found in the area. Also, in post-COVID recovery, breathing exercises are very important, because they help to clear the airways and in a short time, significant improvements in the patient's condition can be noticed. Similar packages are to be found in other Romanian resorts such as Băile Herculane and Geoagiu Băi.

5.4. Vaccine Tourism

The emergence of COVID-19, as in the past with SARS or Ebola, highlights the vulnerability of people to infectious diseases (Dubé & MacDonald, 2020). As the very few known medical treatments are fundamentally contested, treatment isolation remains essential, until the vaccine is found. The administration of vaccines against coronavirus disease began in December 2020. Initially, only a few vaccines were approved, with different mechanisms of action (Martinez-Rodriguez, Gonzalez-Parra & Villanueva, 2021).

For those who want to receive the COVID-19 vaccine faster, in the hope of traveling in safer conditions, since the beginning of the administration of the vaccine, in different countries, tourist offers have been prepared, accompanied by vaccination. This new tourism concept was launched in some US states, Cuba and

the United Arab Emirates, but also by travel agencies, which have prepared luxury offers (Loss, 2021). In Florida, the vaccine was offered free and unconditionally to people over the age of 65 who could afford to come for vaccines from abroad, or who still had a home in that state. But since January 21, 2021 that opportunity has changed, and only those who have been in Florida for at least three months a year can enrol in a vaccination centre. Patients who can afford this type of tourism package, which includes the vaccine, come from developing countries, or less developed, to developed countries, which are also major producers of anti-COVID-19 serums.

The concept of tourism vaccines, which offer services similar to those associated with medical tourism, has been promoted since the end of 2020 in India by Gem Tours & Travels agency, which offered Indian tourists a four-day stay to receive the vaccine from Bombay to New York (Loss, 2021). Shortly afterwards, in January 2021, India launched the Vaccination Campaign. Travel agencies, such as Gem Tours & Travels or Zenith Holidays, offered all-inclusive packages for the United States, the United Kingdome or Russia (Loss, 2021). The offer included plane tickets, sometimes accommodation and a cultural visit and vaccination. The stay varies from 3 to 12 weeks, to receive the second dose, or, two trips, to receive the second dose.

Cuba has even made a new tourist attraction out of vaccination. At the beginning of 2021, there were four vaccines in Cuba at an advanced stage of testing, and Cuban authorities planned to produce 100 million doses of Soberana 2, more than necessary for the total population of the island (Loss, 2021).

Maldives was one of the countries that opened up completely to visitors, and now it wants to be one of the pioneers for vaccination tourism. However, for now, visitors who want to "visit and get vaccinated" have to wait a little longer. The scheme will start after the country's population of 550,000 is immunized.

The resumption of international tourism will largely depend on vaccination and the vaccination certificate or passport, which will facilitate the access of tourists to different destinations and will exempt them from quarantine (European Commission, 2021).

6. Conclusions

The tourism industry is highly vulnerable to many factors and is looking for resilient solutions. Domestic tourism is a first step towards the resumption of tourist activity and has become significant in more and more countries worldwide.

In the new conditions created by the pandemic, the development of new forms of tourism that can take place throughout the year, and which reduce the imbalances created by seasonality, becomes more and more attractive. This is the case of medical, spa or spa and wellness tourism. In various countries, several spas have prepared tourist packages especially for patients who have suffered from COVID-19, in order to facilitate a faster and total recovery.

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Building Resilience Through the Use of Intelligent Technologies: A Qualitative Research

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Abstract

In the actual business context, characterized by a high degree of volatility, uncertainty and complexity, resilience represents an important characteristic of any work system, regardless of organizational level (workplace, department/project, organization, network/alliance or industry). Resilience of a work system depends on how technical components, especially those based on intelligent technologies, are integrated with the social components of the system. Using the social-technical system theory, the authors conducted a qualitative research, in order to identify the relevance of different intelligent technologies and integration solutions for building resilience in organizations. Several managers, mainly finance chief officers, were interviewed, and their responses were analysed. The main findings of the research refer to the acknowledgement of the importance of the resilience within a limited organizational resources context as well as narrow short-term perspective, in connection with a digital transformation mindset and initiatives based on use of intelligent technologies.

Keywords: Resilience, social-technical system theory, intelligent technologies, analytics.

JEL Classification: M15, M21, O33.

1. Introduction

The concept of resilience, a frequently discussed topic in the present fierce environment, is becoming an essential part of a company's strategy, an objective to be achieved or even a new way a company should act and perform. When discussing about resilience as a concept, it is described as the company's adaptive capacity and its ability to cope with, adapt to and recover after a disruption (Gallopin, 2006). Moreover, it is discussed the fact that companies are required to reduce the complexity of their infrastructure in order to adjust to potential risks and

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tolerate disruptions.

Resilience, from the perspective of the financial field, and vulnerability are directly related one to another, given that they "are two sides of the same coin" (Jacobsen et al., 2009), thence building financial resilience starts by understanding the vulnerabilities that result from exposure to risk and lack of access to appropriate resources. Resilience helps top performers thrive through downturns and, furthermore, resilient companies enjoy gains that last longer after an economic crisis (https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/stronger-for-longer-how-top-performers-thrive-through-downturns). A key point mentioned by McKinsey consultants is how the organizations are handling the EBITDA margins – fast adaptation in reducing operating costs, building on the recovery momentum and taking advantage of the increasing revenues, once the recovery period has started. In addition to the operational agility, resilient companies have been part of internal digital disruptions, applying new ways of increasing productivity through artificial intelligence, advanced analytics, and digital techniques.

The paper aims to identify connections between digital transformation initiatives and resilience through the dimension of the financial area, which represents the place where most disruptions reside – either the triggering point where a change decision is taken or the end point where consequences have to be handled.

2. Problem Statement

Resilience, from a literature review perspective, is approached from different angles – either different means for measurement or framework proposals or connected with different other concepts that contribute to its enhancement – sociotechnical systems, competitiveness, and adaptive salesforce.

There are several measurement methodologies for resilience, as well as proposals for new modes of evaluation, by defining the company's resilience as how an enterprise can decrease the level of its vulnerability to expected and unexpected risks, the flexibility in reorganizing itself in a changing environment and the ability to recover in the least possible time as well as with least possible costs (Erol et al., 2010).

Based on this definition, three evaluation areas are targeted: – (1) the ability of a company to decrease its level of vulnerability to expected and unexpected events; - (2) the ability to change and adapt to a changing environment; (3) – the ability to recover in the least possible time from a disruptive event. The proposed metrics for measuring resilience refer to the following:

Recovery time, which is the time a company needs to overcome disruption and return to its normal state

Level of recovery, which can be used in connection with the time factor to create a dimensional understanding of predictable outcomes; for this metric certain premises are being discussed; recovery level is considered by comparison or timeframe of the recovery is taken into account.

Level of vulnerability to potential disruptions, which is based on a qualitative measure when considering two or more companies, with a debate on including the type of disruption that leads to various kinds of vulnerabilities.

The proposed metrics consider dynamic and organic features of the complex systems, but are limited to a somehow general approach since particular disruptive events have not been considered, leaving the field open to other extended modes of measurement as well as identification of the correlations between various aspects of a company's resilience.

Taking as a starting point the metrics proposal described above, together with other similar papers which consider the same premises, Sanchis and Poler (2013) have defined a framework to support strategic decisions to improve the resilience connected with aforementioned areas – vulnerability, adaptive capacity and recovery ability. The framework aims to identify properties of resilience to determine different indicators for each of the identified areas and to sketch a global overview of a company's resilience, as follows:

Vulnerability is connected with predictability, likelihood/frequency, preparedness, coverage, criticality and degree of tolerance

Adaptive capacity relates to flexibility, agility, robustness, and redundancy.

Recovery ability depicts the level of recovery, time to recovery and cost to recovery.

Still, the proposed framework is lacking the implementation of a pilot in a real scenario with the inclusion of other fields (e.g.: finance, business continuity, risk management) for a complete picture of what resilience should look like in an integrated approach of a company.

A necessary step in further conceptualizing a framework around artificial intelligence, big data, flexibility, agility, and resilience is underlined because information systems like big data analytics may be fundamental and give some preliminary insights on the importance of such transformations in achieving organizational resilience (Ciampi et al., 2018). The focus of this approach is mainly to review the existing research in this field by formulating findings that emerged in the existing literature, thereby having a gap in addressing the practical/business part, further investigation with qualitative methodologies being one of the necessities.

When considering a company a large sociotechnical system with multiple stakeholders and different perspectives that lead to an overall resilience, new insights about relating system interfaces, types of change, and interaction between social and technical systems are brought into perspective. By comparing stakeholder angles, different understandings have been depicted as to what resilience means with respect to system domain, stakeholder purpose, system abstraction and timescales (Taysom and Crilly, 2017).

Although the study is based on a development project, by approaching the sub-systems – social and technical, and using the three dimensions of resilience – resisting influences, recovery from influences and changing to accommodate influences – the authors expect that the findings would have a general applicability

to all sociotechnical systems.

Another concept connected with resilience is competitiveness. By using qualitative analysis, Sabatino (2015) builds a rational model to understand resilience of the manufacturing facilities, identifying some principal determinants categorized in two variables: organizational structure of the company and relationship with the reference market.

The identified elementary factors of resilience from an organizational structure point of view are structure of costs, timelines – anticipation and rapidity of business decisions, involvement, and efficient system of the incentives with strategic objectives, simple organizational structure, and control system on a clan model. Within the variable relationship with the reference market, the following factors can be mentioned: ability of focusing on the customer, product focalization and quality management, business culture of national imprinting and value system, geographical focalization, and internalization strategies.

As a conclusion, the paper builds a model to identify the vulnerable factors and the reaction abilities of a company, and proposes new ways of measuring resilience. The research presents limitations when generalizing the conclusions, but provides an opportunity of adaption of the theoretical framework of resiliency to specific company necessary abilities.

One last significant concept linked to resilience identified in the context of COVID-19 pandemic is adaptive salesforce with an emphasis on flexibility of the sales process and its contribution in building resilience (Sharma et al., 2020). The paper presents the results of a qualitative research addressed through academics who are active in sales executive education and sales executives and consultants, hereby underlining the most important aspects of adaptive selling from both academic/theoretical perspective and practical/business viewpoint. The result of the analysis suggests that adaptive sales force should focus on improvements in the following areas: flexibility and adaptiveness in the salesperson functions, adaptiveness of scales, and technology adaptiveness.

The cited papers ensure a proper starting base for future research as well as for tackling a wide range of resilience approaches - definition of resilience and ways to measure it, artificial intelligence and big data analytics and their contribution to build resilience, sociotechnical systems and multilateral stakeholder perspectives on resilience, competitiveness, and adaptive salesforce as integrative parts of organizational resilience.

The niche addressed by the authors of this paper is the perception of resilience and digital transformation as linked components within a company and what these two concepts look like from a financial perspective with a focus on identifying particularities for this field while addressing sustainable growth in the described context.

3. The Research Aims

An essential difference between holding financial information and understanding financial data is the fact that the former is based on uniformity and

structure as compared with the latter, which is the starting point on identifying opportunities and furthermore making use of digital tools to discover the unseen from a bundle of figures.

Traditional finance role has emerged in the last couple of years into a central position within a company by incorporating knowledge from market, sales, finance, and digital technologies, thereby confirming a paradigm shift of how finance could contribute to developing and achieving attributes like agility, flexibility, and resilience.

The questions addressed in this paper refer to how companies perceive resilience as a concept, the linkage with digital transformation and more specifically, how this is seen from a corporate finance perspective with the possible identification of particularities of the field.

4. Research Method

Considering the limited theoretical background on the research topic, the authors decided to use the inductive inquiry, as research approach. Data was collected using four semi-structured interviews. Table 1 presents the interviewees' profile.

Table 1. The interviewees' profile

No.	Position	Experience (no. of years)	Industry	Company size (MM euro)
1	Head of accounting and controlling	> 15	Technology	> 100
2	Internal audit manager	> 10	Automotive	> 100
3	Service center leader	> 10	Technology	> 100
4	Fintech company co-founder	> 10	Digital learning	< 10

Source: Authors' contribution.

The following interview sections were defined:

1. Resilience and digital transformation perception (How is the resilience perceived? Is resilience important? Which are the difficulties during building the resilience?)
2. Digital transformation strategy, as defined or being defined (Did the company already define or is interested in defining a strategy for digital transformation? Which are the determining factors that would lead to a digital transformation strategy? What kind of technologies can be considered as part of the digital transformation? Which are the relevant changes when implementing different tools/technologies/applications? How does the actual mindset/culture of the company fit to the digital transformation trends and digital transformation strategy, if there is one? Are there any initiatives designed for a cultural transformation, too, and if yes, could you please provide an example?)
3. Digital transformation and financial resilience (How does financial resilience contribute to an overall company resilience? How does the digital

transformation process lead to building resilience in the finance field? Are there any particularities of digital transformation in the finance field? Which are the emerging digital trends in the finance field?)

4. Build resilience through digital transformation (Would resilience lead to sustainable growth of the company? How can it reshape the future of the company for the next 5-10 years?)

Before starting the interviews, a verbal consent (by phone) for participation was obtained, along with an agreement of non-disclosure of the name or company to be used for the current research. The interview protocol was sent via email to each of the respondents before the interview. The interviews took place in March 2021 either via online meetings or over the phone with direct transcript of the conversation. On average, an interview lasted between 30 to 40 minutes.

The transcripts of the interviews were analysed using the coding technique. Based on the first codes, the groups of codes and the associated concepts were defined. These results were used for discussing the research findings.

5. The Research Findings

The analysis was divided into several parts oriented on resilience connected with digital transformation at a company level and from the perspective of finance field. The following tables present the coding results for the resilience definition and the digital transformation perception.

Table 2. The coding results for the resilience definition

Preliminary Codes	Code groups	Category
• Process assessment and changing • Positive and efficient reaction to change • Overcoming the resistance to change	Dealing with changes	Resilience definition
• Efficient solutions for challenges/risks • Risk management • Survival, especially in the case of young business • Business survival in VUCA environments • Continuing to provide added value	Dealing with challenges	
• Holistic view about the business • Long term approach • Organizational, team and. individual levels • Multiple perspectives • The need for a strategy • Proper allocation of the resources	Approach	
• Increasing the market share	Effects of resilience	
• Organizational learning		
• Cultural transformation		
• Effects are achieved in time		
• Depend on the size of company and its inertia		

Source: Authors' contribution.

All the respondents agreed that resilience has a key position within an organization, but it is also seen as a competence that requires continuous improvement, either being part of a long-term strategy or addressing short term necessities like adaption to disruptive events and agility to identify opportunities created by such an event. The main obstacles in achieving resilience refer to the lack of a long-term approach, limited resources, resistance to change and building confidence connected to achieving resilience on a company level.

Digital transformation applies to all aspects of human society (Kaplan et al., 2004) and forces companies and industries into organizational changes and critical business adaptions if they want to survive and prosper (Porfirio et al., 2020). Even so, the answers of the qualitative research underline mostly specific, short-term needs, sometimes part of a centralized company strategy, mostly with a silo orientation, required by the market, industry or by the customers.

When discussing digital transformation technologies, most of the respondents mentioned robotic process automation, cloud-based technologies and share point or they mentioned digitalization as a part of the products and services that the company offers, proving that the concept of digital business strategy is associated either with organization's exploitation of its digital resources to develop market differentiation (Bharadwaj et al., 2013) or to the improvement of its operational efficiency (Matt et al., 2015), as shown in Table 3.

Table 3. The coding results for Digital transformation perception

Preliminary Codes	Code groups	Category
• General strategy and specific initiatives	Approach	Perception of the digital transformation
• Silos approach		
• Impact on customers and partners		
• Related to risk management, regulatory changes (such as audit approach) and competition		
• Covering and transforming the entire business model		
• Payroll, payments, tax reporting,	Examples of applications	
• Applications for remote business		
• Cloud technologies	Technologies	
• Collaborative technologies		
• Green technologies and connectivity		
• Profitability	Effects of adopting technologies	
• Increasing the market share		
• Organizational learning and employees' professional development		
• Cultural transformation		
• Effects are achieved in time		
• Depend on the size of company and its inertia		

Source: Authors' contribution.

When discussing about a digital transformation culture, management characteristics like democratic leadership and higher levels of coherence related to the company's mission can counterbalance the characteristics of the company (Porfirio et al., 2020). The respondents' answers mentioned there is a limited orientation towards digital transformation due to the time that needs to be spent in this direction, to the inertia of the company due to its size and external factors (pandemics) that pushed the company into a digital transformation process.

The resilience coming from finance area is seen as a key point in connection with the rest of the company by providing mechanisms for survival, as well as addressing the human level by reducing stress and building confidence. Digital transformation in finance is seen as a contributor in providing the necessary information for decisions or adjustments in disruption period, and the main means mentioned as part of the digital finance are robots, AI, neuronal systems, cloud computing, big data, and predictive analytics.

Related to the future of companies in the context of digital transformation, it is expected that it will increase flexibility to respond faster to market and shareholders requirements, and will enhance knowledge transfer, technological innovations, and sustainable growth.

6. Conclusions

The intent of the present research was to bring to attention present-day concepts like resilience and digital transformation, focusing on the identification of the linkages between them with a particular interest in the corporate finance area. One of the limitations of the study is represented by the narrow domain in which the respondents' profiles concentrate - technology/industry and fintech solution provider as well as the fact that the profiles cover different responsibilities within the organizations – the only common point being the full or partial financial responsibility.

Despite acknowledged limitations, the results of the interviews reveal joined points in each of the sections of the interview – resilience is a key point in a company, and the difficulties in achieving it refer to change resistance, limited resources, and narrow short-term perspective.

Digital transformation strategies do exist at a company level, but actually most of the initiatives in this field address limited, stringent needs or just parts of the company. As for the mindset, there is still a finite orientation towards digital transformation coming mainly from restrained resources or from the fact that achieving results in this field may be difficult due to inertness of large-sized companies. Even so, the commonly used technologies in the field of digital transformation refer to robotics, process automation and cloud-based technologies.

As for the finance area, the identified means as part of the digital transformation actions are AI, predictive analytics, neuronal systems; in an organizational approach, finance is considered a main pillar in building resilience mainly to the predictive component, which used for rapid decision making especially in disruptive situations.

A proposal for future research includes respondents from a wider range of industries, with a focus on full financial responsibility positions (chief financial officers, head of finance etc.) concentrated on gaining a deeper understanding on how digital finance contributes to overall company resilience and on formulating a general statement on this subject.

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Digital Marketing Communication for Actual Context of Romanian Modern Grocery Retailing

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Abstract

The purpose of this paper is to present the most recent digital communication channels and the level of their implementation by Romanian modern grocery retailers in the context of the new customers' expectations.

The literature review presents the most recent inputs on digital marketing communication. The paper also presents the Romanian actual context for modern grocery retailers, the digital communication channels used by top 5 Romanian modern grocery retailers and the imminent forecasts for Romanian modern grocery retailers. Finally, conclusion and recommendations are presented.

Corroborating the literature review with the actual customers' expectations, the paper presents as recommendations the use of large social media campaigns in order to reach a high level of engagement, value-added services, useful information and the enhancing of word-of-mouth.

The paper is conceptual, so future research will be necessary to empirically validate these findings.

This study is an important instrument for further research and for retail managers. It offers a valuable response to the new customers' expectations.

Keywords: Digital marketing, Marketing communication, Customer expectations, Modern grocery retailers, Retailing.

JEL Classification: L81, M31.

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1. Introduction

The rapid developments in technology have determined the emergence of the new digital communication channels such as online and social media and the decline of traditional communication tools. Retailers are using smart technologies to improve consumer shopping experiences and to stay competitive (Priporas et al., 2017).

In the face of the Internet revolution, marketing communications today increasingly occur as a kind of personal dialogue between the company and its customers. Companies must ask not only "How should we reach our customers?" but also "How should our customers reach us?" and "How can our customers reach each other?" New technologies have encouraged companies to move from mass communication to more targeted, two-way communications (Kotler & Keller, 2016).

Thus, considering the dual sense of digital communications, should retailers base on it to find and meet customer expectations?

The purpose of the paper is to see Romanian modern grocery retailers' level of enhancing digital communication and how they approach the most demanding customer expectations in the context of changes determined by the COVID-19 pandemic.

2. Problem Statement

The world of retailing is reconfiguring very intensively due to new technologies, as well as due to changes in consumer purchasing behaviour determined by the COVID-19 pandemic (Grewal et al., 2021a), which has also caused the hyper-acceleration of retailer dependence on digital retailing and digital advertising/ marketing communications (Villanova et al., 2021).

New forms of retailing such as omni-channel retailing, digital marketing and click & collect facilities have emerged and changed the customers' shopping experience. Customer can now have access to purchasing and browsing goods 'on the go' through mobile applications, and although some demographics prefer physical 'brick and mortar' retailing, a hybrid combination of online and physical channels has become increasingly popular (Patano & Priporas, 2016).

Retailers are using smart technologies to improve consumer shopping experiences and to stay competitive. The biggest future challenge for marketing and consequently for retailing seems to be generation Z, since members of this generation seem to behave differently as consumers and are more focused on innovation (Priporas et al., 2017).

Digital communication describes any electronic transmission of information that has been encoded digitally and transmitted via digital media (Grewal et al., 2021b).

Over the past decade, the use of newer forms of media, such as online (e.g., websites, e-mail and mobile) and social media (e.g., Youtube, Facebook, blogs and Twitter) has exploded (Levy et al., 2019).

The literature globally abounds in research of digital retail communication, especially social media, and the topics are related to consumer and market trends (Samoggia et al.,2019; Bălan, 2021), in order to reach a high level of interest and

customer engagement. Smart technologies and social media help retailers to know how and when to communicate with customers and according to Villanova et al. (2021), the customer journey points should be considered by retailers for deciding strategically about when, what and where to communicate their messages to customers.

Social media is a key digital marketing strategy. It was shown that larger social media campaigns, especially on Facebook, determined a significantly higher number of orders and sale income (Dolega et al., 2021). Considered to be a strong option for building relationships with customers, it is necessary to integrate social media in the integrated marketing communication strategy of organizations (Valos et al., 2016).

Digital communications are the link between brand acceptance and consumer engagement (Peltier et al., 2020; Vohra & Bhardwaj, 2019). The so-called online brand communities are facilitating consumers' engagement, which determines positive word of mouth, purchase intentions and loyalty (Islam et al., 2018).

Another important digital communication channel, except social media and corporate websites, is e-mail marketing, which is very appreciated for its benefits such as relevance (Morhart et al., 2015) and education and entertainment (Lieb, 2012).

A very recent important contribution to retail digital communication research (Grewal et al, 2021b) revealed four consumer–retailer domains relevant for digital communication, which in turn frame their discussion of the properties of communication dynamics (e.g., trends, variations) within messages, communicators, and their interaction, as well as communication multimodality (i.e., numeric heuristics, text, audio, image, and video).

3. Research Questions/Aims of the Research

The need for digitalization has persisted for some time and the pandemic has highlighted its importance in the Romanian modern grocery retailing. The aim of the research is to see how Romanian modern grocery retailers implemented and responded accordingly to customer new expectations in the context of the COVID-19 pression of digitalization acceleration. Which are the digital communication tools used by modern grocery retailers?

4. Research Methods

The paper presents the actual context for Romanian grocery retailers based on the data reports published by Euromonitor Country Reports (2021) on retailing, e-commerce and mobile e-commerce. Next, we presented the media channels communication used by the top 5 Romanian modern grocery retailers based on the data published on retailers' websites, as they are operating multi format and omnichannel. Thirdly, based on Euromonitor data reports, we presented the imminent changes that are following and how modern grocery retailers should respond accordingly.

5. Findings

5.1. Romanian Modern Grocery Retailer's Context

According to Romania Country Report (Euromonitor, 2021), modern grocery retailers continued the expansion in the Romanian market in 2020 at a slower pace compared to 2019. The most dynamic channel was supermarket, with an increase in selling space for the new openings and intention to compete more directly with hypermarkets. The most active brands were Profi and Mega Image. Supermarkets, convenience stores and discounters benefited from consumers, who considered them to be proximity stores. Prior to the pandemic, these were increasingly satisfying changes in purchasing habits towards more frequent, lower value shopping trips. During the COVID-19 crisis, consumers favoured the same proximity stores because of restrictions on the time they could spend away from home and concerns about increasing their risk of exposure to the novel coronavirus the longer they were outside their homes. The expansion of modern retailing in smaller formats is leading to the continued replacement of traditional grocery retailers, several of which have had to close or to operate as various owners under branded networks/chains, such as La Doi Pasi from Metro, CBA from CBA and Carrefour Express from Carrefour (Euromonitor, 2021).

E-commerce was already on a growing trend in Romania before the outbreak of COVID-19 thanks to the wide spread of the internet in all the country, the high level of smart devices ownership and the increasing role of digital media in consumers' daily lives. People getting busier also supported the channel's growth, the new convenience of 24/7 ordering and home delivery was very appreciated and desired by consumers. These have also been applied to mobile e-commerce, which benefited from changes IN consumer lifestyles, behaviours and restrictions on the operations of brick-and-mortars during the COVID-19 lockdown (Euromonitor, 2021).

Grocery retailers such as Kaufland and Carrefour have introduced Scan & Pay mobile apps, which allow consumers to use their smartphones to scan the products they put in their baskets and pay for them at a special cashier. Loyalty card mobile apps are also available through Kaufland and Lidl, and the success of such programmes is likely to encourage other players to develop their own mobile apps. The fact that mobile apps are becoming increasingly central to consumers' everyday lives across a range of activities is likely to support their increased usage in e-commerce during the forecast period (Euromonitor, 2021).

5.2. Digital Communications Channels of Top 5 International Grocery Retailers in Romania

Below we present the digital communication tools and technologies implemented by top 5 international grocery retailers (Euromonitor, 2021) that are operating in Romania different formats:

Table 1. Top 5 Modern Grocery Retailers Media channels communication

Media/ Retailer	Kaufland	Lidl	Carrefour	Profi	Mega Image
Facebook	✓	✓	✓	✓	✓
Instagram	✓	✓	✓		✓
Twitter	✓				✓
Youtube	✓	✓	✓		✓
Linkedin	✓	✓	✓		✓
Pinterest	✓				✓
Shopping App			✓		✓
Info App	✓	✓			
E-mail	✓	✓	✓	✓	✓
Website	✓	✓	✓	✓	✓
E-commerce	✓		✓		✓

Source: Own research based on retailers' websites information.

The research above broadly revealed a high level of digital communication implemented by the first five most successful grocery retailers. Despite the pandemic, all chains have maintained their pace of expansion, due to the need to accelerate digitalization and e-commerce. The discounter Lidl, which switched the second place with Carrefour, and came closer to the leader Kaufland, is the big surprise of the year 2020. With no e-commerce implemented, Lidl exceeded Carrefour results with private labels and low prices. Also, with no e-commerce implemented and fewer digital communications, Profi was based on proximity, high expansion the rural area, too, and best offers with discount coupons (Cuponescu campaign). All the chains are very popular on Facebook, with a high level of engagement, especially during the lockdown (Strătilă & Mehedințu, 2020).

5.3. What is Following for Retailers?

Some of the developments observed on the Romanian retail market during the COVID-19 crisis are expected to have a lasting impact. The most relevant example is for sure the strong penetration of e-commerce in consumers' lives. E-commerce will continue to grow within total retailing share, but the brick-and-mortars will be also important. Most physical stores will start to operate multi-channel in order to have a more flexible response to evolving consumer behaviours and to be ready for possible similar future disease scenarios. This could mean a changing role for brick-and-mortar stores, potentially transforming them into showrooms for online sales. Click & collect is expected to become more prominent, determining a high number of collection boxes placed in different city areas. Because wearing a mask and social distancing may become recommended or even mandatory inside stores, it is possible that in-store retailing will lose the function of social activity and e-commerce will increase its functional relevance (Euromonitor, 2021).

To avoid the future risk of spreading viruses and microbes, cashless payments will continue to be widely promoted and increasingly accepted by consumers, even

for small payments. Also, new technologies such as "shopping while scanning" or "self-checkout" will not only be more widely available, but will also increasingly be seen as preferable. A first step to the full digitalisation of retailing was taken in 2020 with the opening of the first Grab & Go concept store, with no employees and a fully digital process from access to payment. As a result of such developments, investment in digital technologies is expected to grow rapidly and become increasingly relevant to smaller players as well as larger ones (Euromonitor, 2021).

6. Conclusion and Recommendations

COVID-19 accelerated the digitalization of retailers in Romania, although the evolution of technology had required it even before the beginning of the pandemic. The change of lifestyle, the convenience, the adaptation to the new as well as the desire to keep up with innovation, characterize the modern consumer, ready to give up experiences now, and rather to stay safe, regardless of which generation he belongs to. Brick-and-mortar grocery stores, except convenience and proximity, will need to restart and get back to what happened in the period 2008-2012 during the Economic Crisis.

Retailers should look for advantages, develop new market opportunities based on technology, modernize and adapt to the new and permanently changing customer expectations (Ferreira et al., 2020).

The question for modern grocery retailers is if there is a need to adopt a communication strategy for crises or more, which are the most suitable messages in a crisis and how they can be efficiently delivered (Villanova et al., 2021) in order to reach consumer engagement and loyalty (Bowden & Mirzaei, 2020).

Social media might be the latest and greatest innovation for retail strategy, but even so it still needs to provide a consistent, compelling experience, to reach long-term loyal customers (Grewal, 2019). Useful information, value-added services and customer education should be applied by innovative retailers for enhancing the benefits they provide relative to the benefits that customers desire (Grewal, 2019).

Providing efficient customer assistance during and after purchase both in store and online increases the satisfaction and enhances behavioural intentions and word-of-mouth (Duarte et al., 2018). Word-of-mouth ''has been and will always remain for marketers one of the strongest elements in the battle for the hearts and minds of consumers, and it is essential to be able to use it to the advantage of your brand" (Temple, 2020). As Nielsen "Digital vs. Real Life" report (2020) revealed that although consumers are actively engaging in online platforms, personal recommendations or real-life conversations have a stronger influence on consumers' minds, and therefore on purchasing decisions.

This paper is an important instrument for further research and for retail managers. It offers a valuable response to the new customers' expectations. The study limitations are related with the dynamic character of retail marketing determined by the technology development and highlights the importance for continued research.

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Empowering Students to Save Energy through a Behavioural Change Campaign in University Accommodation

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Abstract

Energy awareness campaigns are critical in enabling students to become more aware of the impacts of energy use and to effectively establish sustainable habits and lifestyle practices. They can provide a foundation of energy literacy and sustainability to students living in university dormitories and can help them reduce energy wastage even when they move out into the private sector. In this work we aim to investigate the impact of an energy awareness campaign, Student Switch Off (SSO), on university students by quantifying the behaviour changes that may be attributed to it. Changes in the behaviour of students in participating dormitories were evaluated through four rounds of questionnaire surveys during the academic years 2018-19 and 2019-20. In total, more than 9,000 students living in participating university accommodation answered the questionnaires. The findings show positive signs of impact of the SSO campaign with the most indicative sign being that a higher share of students tried to save energy in most things or even in everything they did by the end of the evaluation period compared to the beginning.

Keywords: university students, energy campaign, energy saving, behaviour assessment.

JEL Classification: D14, E21, I23, Q40, Q56.

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1. Introduction

The role of human behaviour in energy efficiency should be considered in all aspects of the energy transition. Energy saving lifestyles, which are of societal interest, require conscious decisions from energy users. However, long term behavioural change, which is triggered by training, awareness activities, incentives and feedback, remains a major challenge (Interreg Europe, 2018). Therefore, energy efficiency campaigns should be aligned with the motivations of energy consumers and any recommended energy saving action should be easily integrated into their daily routine to be effective. Within this context, in this study we analyse the impact of the Student Switch Off (SSO) information campaign on students who had been involved with the campaign during their stay in their university's dormitories from September 2018 to June 2020.

Student Switch Off (SSO) is an annual inter-dormitory energy-saving campaign that runs in fourteen universities in seven European countries (Bulgaria, Cyprus, Greece, Ireland, Lithuania, Romania and the United Kingdom) and focuses on a predefined set of activities, encouraging students to save energy in their dormitories. Through SSO a number of engagement activities and instruments are used in order to enable, empower and motivate students to save energy in their dormitories and to change their everyday habits to more energy conscious ones. The campaign encourages any action that can help save energy with specific attention given to six energy conservation actions which are: i) switch off lights in empty rooms, ii) avoid leaving electronic equipment on stand-by, iii) put a lid on the pan when cooking, iv) boil the kettle only with the amount of water you intend to use, v) put on a jumper or an extra blanket instead of turning on the heating, vi) open windows to cool down instead of using a cooling device or system.

2. Problem Statement

Preparing and empowering current and future energy consumers to recognize the adverse effects of energy wastage should be key when planning on how Europe will achieve its sustainable energy goals (Bertoldi, 2020). At the same time, in order to achieve the goal of limiting the rise in global temperature below the critical level of 2oC by the end of the century, a series of actions are needed, including the shaping of citizens' behaviour on issues related to environmental protection (IPCC, 2018). The term "behaviour change" describes how behaviour is the result of behaviour interventions (Susan & Johnston, 2012). Such interventions delivered through educational campaigns on energy awareness could play a vital role in helping university students achieve valuable energy savings and form appropriate habits and eco-friendly lifestyle practices, especially when coupled with formal educational programs (Iordache – Platis & Romanowicz, 2020).

At the same time, the phenomenon of energy poverty is observed either in the form of insufficient access to energy services for developing countries or in the form of excessive energy costs in relation to the disposable income of households in developed countries (Nussbaumer et al., 2012). Although the main drivers of energy

poverty are well documented, up to this date little attention has been given to students as a vulnerable group affected by energy poverty (Kousis et al., 2020); student energy poverty is often under-reported and under-supported (Ntouros et al., 2019). Thus, the adoption of environmentally conscious behaviour among university students as a result of informative campaigns, coupled with educational programs aiming to promote energy saving lifestyles and environmental consciousness to students, contributes significantly to energy saving, alleviates exposure to energy poverty and paves the way for decarbonization (Tsagarakis et al., 2011).

Verplanken and Wood (2006) in their habit discontinuity hypothesis, stated that there are specific moments of change in one's life (e.g. leaving home for the first time, having a first child) during which individuals are more open to making other changes in their lifestyles that can become habitual – including pro-environmental changes. Focusing specifically on students and using the moment of change in their life associated with leaving their homes for the first time and moving into dormitories, the SSO campaign aims to encourage them to get into positive energy-saving habits. At this point of their life, university students are generally embarking on the start of their adult life and so the habits formed can have a considerable long-term benefit for them through both minimizing their long-term energy expenditure and in terms of the associated carbon emission reductions from their energy usage. Furthermore, by increasing students' energy literacy it is likely that the probability of them falling into energy poverty, either in the present or in future, is significantly reduced.

3. Research Questions/Aims of the Research

In this work, we aim to investigate the impact of the Student Switch Off information campaign on university students by quantifying the behaviour changes that may be attributed to it. The quantification is based on self-reported assessment and the evaluation period is the academic years 2018-2019 and 2019-2020.

4. Research Methods

Changes in the behaviour of students in participating dormitories, and thus the impact of the SSO campaign, were evaluated through pre- and post-competition questionnaire surveys. Students in participating dormitories were encouraged to complete a baseline survey at the beginning of the academic year, to identify existing energy-saving attitudes, behaviours and habits, and a follow-up survey at the end of the academic year. Most questions in the follow-up questionnaire were identical to those asked in the baseline survey in order to allow for comparison and evaluation of possible change from the beginning to the end of the academic year.

Online versions of the questionnaire surveys were created on LimeSurvey in Bulgarian, English, Greek, Lithuanian and Romanian. Channels used to disseminate the questionnaire surveys were mainly university and students' unions mailing lists. Moreover, questionnaire surveys were also distributed through social media platforms and in hardcopy format. The target response rate for the baseline

and the follow-up surveys was 15% of students living in each country's dormitories at the beginning of the academic year. In both surveys the criteria for inclusion in the analysis were: i) the respondent lives in a participating university dormitory, ii) the respondent is older than 18 years old and iii) the respondent answers at least one question related to the current lifestyle about saving energy. Table 1 presents the valid answers collected in each survey period as well as the targets and the number of students living in SSO dormitories.

The questionnaire included multiple-choice and rating scale questions. In the first type of close-ended questions, participants were offered a set of answers they had to choose from, while the second type of questions was Likert-scale type. In Likert scale questions, respondents were asked about the level of agreement with specific statements. Each option was given a score, which was used to analyse results. Descriptive statistics were used to analyse the collected data. Mean values and percentages are presented in the results section as quantitative indicators to measure the level of SSO campaign's impact.

Table 1. Number of students living in SSO dormitories, target responses for the baseline and follow-up surveys and valid responses per year

Number of students living in SSO dormitories, survey targets and valid entries received per year	Year 1 2018-19	Year 2 2019-20
Total number of students living in SSO dorms in the beginning of each academic year	45,385	35,767
Surveys' target: 15% of students living in dorms per academic year	6,808	5,366
Baseline Survey Valid Entries	2,200	3,249
Follow-up Survey Valid Entries	2,157	1,466

Source: Authors' own contribution.

5. Findings

In the following paragraphs the main findings of this work are presented. The aspects of students' daily energy saving routines are examined in sections 5.1 and 5.4, the frequency of energy saving actions is explored in section 5.2, while the reasons that might prevent them from being more energy conscious are investigated in section 5.3.

5.1. Energy Saving in Everyday Life

Respondents were asked to choose which of the six targeted behaviours presented in Figure 1 can help save energy.

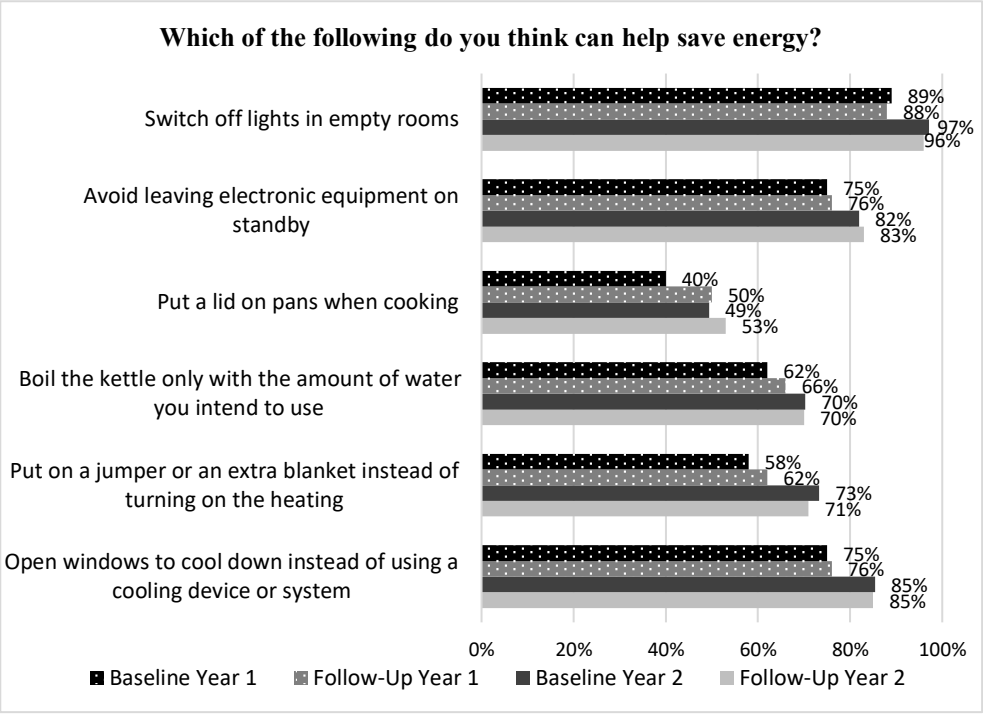


Figure 1. Energy saving in students' everyday life
Source: Authors' own contribution.

At the end of the evaluation period, switching off lights in empty rooms was selected by the highest share of respondents (96%) as an action that can help save energy with a +7% increase between the beginning and the end of the evaluation period. "Put on a jumper or an extra blanket instead of turning on the heating" and "Put a lid on pans when cooking" were the actions with the biggest differences between the first and the last conducted survey, +13% increase respectively, followed by "Open windows to cool down instead of using a cooling device" (+10% increase). The findings also showed that by the end of the evaluation period all actions were considered helpful in energy saving by at least +7% more respondents compared to the beginning.

5.2. Frequency of Energy Saving Actions

Respondents were asked to rate the frequency of a number of energy saving actions they perform, on a scale of 1 to 5. The higher the mean value (M), the higher the frequency of the action performed. The results are illustrated in Figure 2.

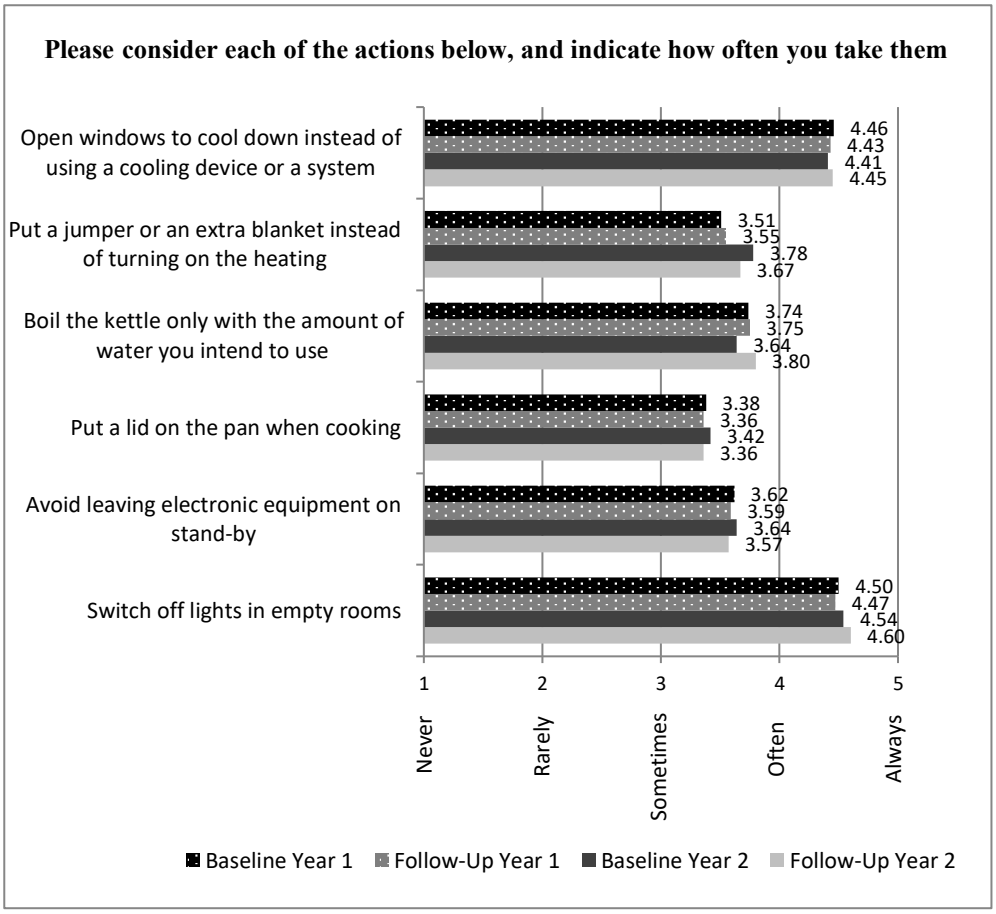


Figure 2. Frequency of energy saving actions
Source: Authors' own contribution.

By the end of the evaluation period (Year 2 follow-up survey) respondents undertook the following actions more frequently: "Switch off lights in empty rooms", (+2% increase) "Boil the kettle only with the amount of water you intend to use", (+2% increase) and "Put a jumper or an extra blanket instead of turning on the heating" (+5% increase). On the other hand, the actions, "Avoid leaving electronic equipment on stand-by" (-1% decrease) and "Put a lid on the pan when cooking" (-1% decrease) were slightly less frequently undertaken by the end of the evaluation period, while the action "Open windows to cool down instead of using a cooling device or a system" was undertaken almost as frequently as in the beginning with a minor decrease of -0.2%.

5.3. Barriers to Energy Saving Behaviour

Respondents were asked to select the three most important reasons that prevent them from being more conscious about their energy use from a list provided to them. The results are illustrated in Figure 3.

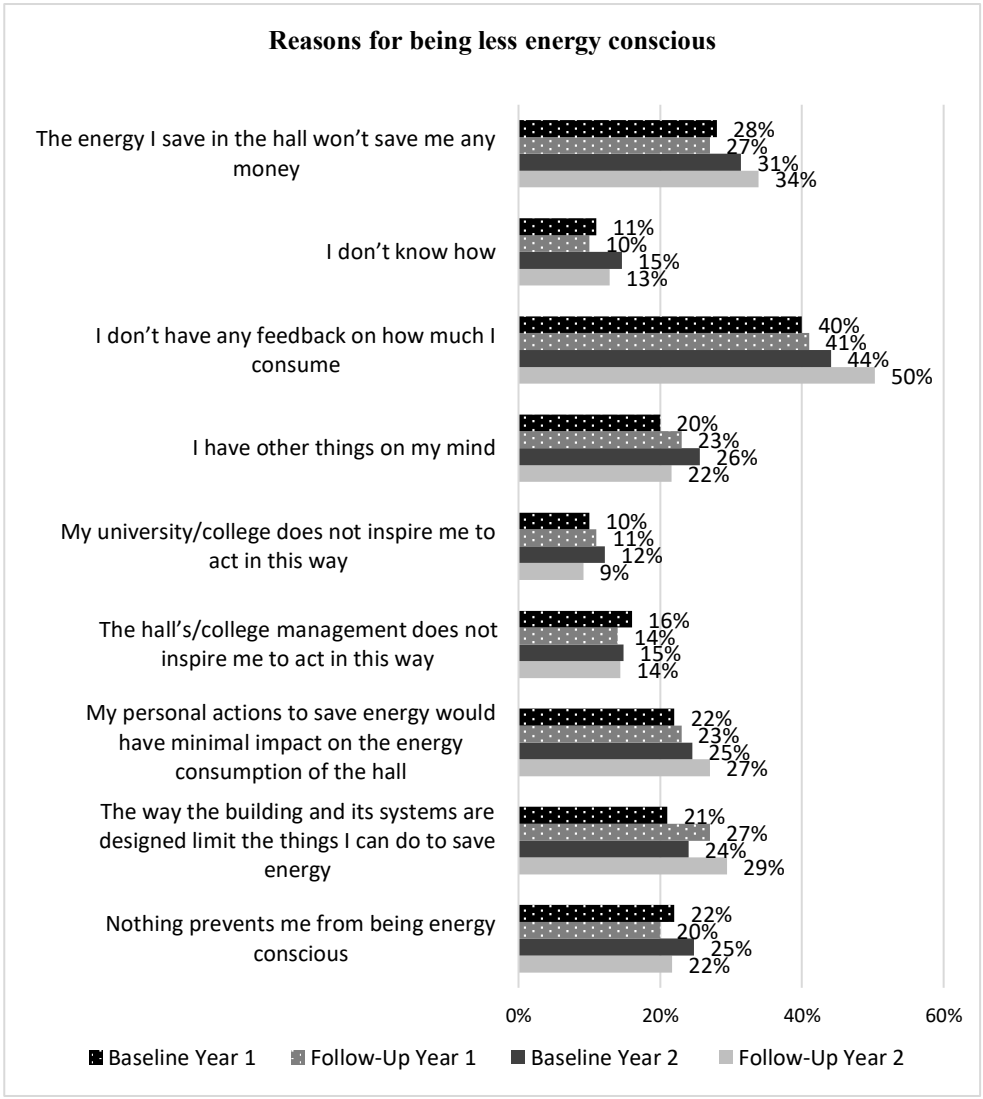


Figure 3. Reasons for students to be less energy conscious
Source: Authors' own contribution.

Between the baseline survey of Year 1 and the follow-up survey of Year 2, the biggest observed differences are the following: A higher share of student respondents (+10%) replied that not having any feedback on the amount of energy they consumed was a barrier that prevented them from being more energy conscious, while +8%

more student respondents showcased the role a building's poor design play as a limiting factor towards higher levels of energy consciousness. By the end of Year 2, +6% more respondents stated that the energy they save in their hall would not save them any money and this was a reason preventing them from being more energy conscious, whereas +5% more of those surveyed said that their personal actions to save energy would have minimal impact on the energy consumption of their hall. Interestingly, by the end of the second year, less students stated that their university/college or the hall's/college's management did not inspire them to act in an environmentally conscious way (-1% and -2% decrease respectively). This might be an indication of students' acknowledgement of their university's effort to inspire them to adopt positive environmental lifestyles with the deployment of the SSO campaign. Another interesting result is the consistently increased share of students who mentioned the lack of feedback on how much energy they consumed as a barrier on their path to adopt pro-environmental behaviours. This is possibly attributed to the fact that the SSO campaign's targeted messages to students that often check their energy consumption were well received and helped students to recognize the importance of feedback about energy use.

5.4. Energy Lifestyles During the Evaluation Period

Students were asked to rate their energy saving effort in their everyday life out of a predefined list of options. Findings are illustrated in Figure 4.

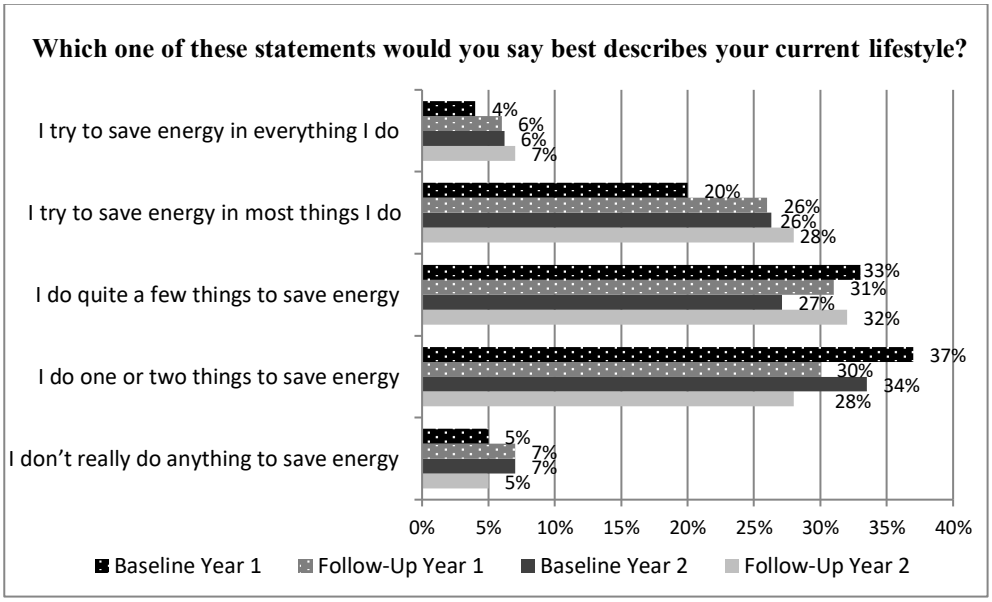


Figure 4. Students' energy saving efforts during 2018-2020
Source: Authors' own contribution.

The findings have revealed that at the end of the evaluation period (follow-up questionnaire 2020) a higher share of students compared to the beginning (baseline 2018) tried to save energy in everything they did (+2%), whereas this share was constantly on the rise during the three subsequent surveys. Interestingly, the biggest differences (-9% decrease and +8% increase) were observed with regard to the options "I do one or two things to save energy" and "I try to save energy in most things I do", respectively. The percentage of those who stated "I do quite a few things to save energy" (no difference) and "I don't really do anything to save energy" (-1% decrease) remained almost stable between the beginning and the end of the evaluation period although some differences were observed in the two middle-term surveys. Overall, the findings from this question might be an indication of the SSO campaign's effectiveness in encouraging students to enhance their efforts towards energy saving actions.

6. Conclusions

To capture the behaviour change in students, four rounds of survey questionnaires were circulated during the 2018-20 academic years; one at the start (baseline survey) and one at the end (follow-up survey) of each year. In total, more than 9,000 students living in halls of residence, answered the questionnaires. Although the 15% targets per survey were not met, this work is among the largest relevant academic works targeting students as a social group. The below-target participation might be attributed to i) the inability to get an all student email sent in some cases, as was the case in Year 2 follow up survey due to the COVID-19 pandemic and other emails being prioritized (i.e., for their studies moving online) and ii) the fact that no hardcopies of the surveys were used in some universities taking part in the SSO campaign, an effective tool to increase the number of participants, as it was the case in some other universities.

The findings show signs of a positive impact of the SSO campaign on students, with higher shares of students adopting pro-environmental behaviours by the end of the evaluation period compared to the beginning. In addition, a higher share of students increased their efforts to save energy, while students also showed a better understanding of the barriers that prevented them from undertaking energy saving actions. Findings also show growing interest and concern among the student population about the climate and ecological crisis.

In terms of limitations, campaigns like SSO can seem a bit too narrow for student activists, with a focus on energy only, therefore, to encourage further student participation and to increase their impact in the community, campaigns should be framed around climate action. Actions could be wider, not solely focusing on energy use, but on waste and water, as well, thinking about whole systems change in the wider society and about climate justice. The campaign could link directly with on-going world events & news (e.g. United Nation's Conference of the Parties), to make it more timely, and give students the sense of urgency and of the fact that they are part of a wider solution and campaign.

As this study confirms, energy saving campaigns are an important element to support energy efficiency and energy savings. Therefore, it is recommended to higher education institutions, policy makers, and other relevant stakeholders and parties, to take appropriate measures to promote and facilitate efficient use of energy to domestic customers, such as students, in order to better shape the European internal energy market and to protect the environment from the adverse effects of carbon emissions.

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Media Literacy Education and Digital Transformation. New Challenges for Civic Universities

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Abstract

It is necessary to increase media literacy education to minimize prejudice, violence, languages of hate and religious intolerance and to promote social justice and respect for human rights. Universities' role, in this sense, such as the schools' one, is manifold also in promoting peace and spreading peaceful development because all educational institutions have the task of educating to reflexivity, encouraging responsible citizenship and not merely of transmitting knowledge.

We propose to investigate, as researchers involved in the academic "RUniPace" Italian network, support by contrast to the hate speech in the university social media and the consequent civic protagonism of the universities in their students' education. In particular, universities are promoting a specific language, and a consequent behaviour oriented towards respect for human rights and social justice. MLE, supports and educates the recognition, awareness and avoidance of potentially harmful content spreading online, hate speech inciting violence. At the same time, MLE promotes justice, peaceful and inclusive societies and provides access to justice for all, and builds effective, accountable and inclusive institutions at all levels. It is important to promote peace through digital technologies, especially social media, which are a privileged tool of choice, especially for teenagers and young adults.

We conducted a teaching research laboratory. Our students explored Facebook, TikTok and Instagram and specifically unofficial groups that have many college students as users. In the second phase we conducted a qualitative analysis of the content found (60 items) in university groups, pages, and profiles by collecting news, posts, photos, and comments contained on social media. The last phase was intended to encourage students' awareness of productive social media use and content.

Hateful content, violent language, controversy and resentment prevail on unofficial Facebook, Instagram and TikTok university pages, profiles and groups. Students rarely post peace content. The spread and use of violent language also have consequences in non-digital relationships. There is a need for education to produce and understand digital contents, especially on social

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JEL Classification: I2.

1. Introduction

We live in a digital society (Lupton, 2014) and hate speech is a menace to democratic values, social stability, and peace have for individuals, understood as virtual reality separated from real life. The world of social media is perceived as virtual, and therefore, it is not necessary to follow the standard rules of social behaviour, respect and civil coexistence. However, even in virtual reality, it is necessary to translate sustainable development principles, and it is necessary to educate to live according to precise social rules through educational media literacy.

Goal 16 for a Global Sustainable Development promotes justice, peaceful and inclusive societies, and provides access to justice for all, and builds effective, accountable and inclusive institutions at all levels (ONU, 2015).

Several studies show that people exposed to hate speech, hoax news, and religious intolerance on social media have low educational media literacy levels (MacAveney et al., 2019; Muhid et al., 2019; Waqas et al., 2019).

The exponential growth of digitization in the world has led to various advantages, related to the possibility of immediate exchange of information worldwide and between all citizens of the world, especially through the world of social media. At the same time, this exponential growth in digitization is fraught with risks. The risks are mainly related to hate speech, which threatens democratic values, social stability, and peace (Wahyuningsih, 2018). For many people, social media is experienced as a virtual world, which is different from the real world. It is like a "virtual place" that does not exist, where social behaviour, respect, and civil coexistence are unnecessary (Ferdorov, 20155).

So, it is vital in the social media world to support and educate to translate the rules of the real world into the virtual world to live according to precise social rules. Educational media literacy plays a leading role in promoting social justice. In this sense, the educational task of universities is the real challenge of this historical period [UN, 2019].

This research is aligned with UNESCO's overall strategy to combat disinformation by fostering the information as a public good and strengthening the transparency of the internet ecosystem." (Tse, 2015).

The study will contribute to promote just, peaceful, and inclusive societies and to combat xenophobia, racism and intolerance (Michukyan, 2016).

Digital communications are fundamental in the life of every individual. It is crucial to train people by promoting digital literacy in general as well as media and information literacy.

According to UNESCO's reflection on the "Futures of Education, " media and computer literacy development offer meaningful solutions for counter hate speech. Media and computer literacy provide a dimension of how education could be

rethought through awareness of freedom of expression, knowledge of one's rights online, fighting online against hate speech and cyberbullying. Media and computer literacy appear as an essential tool that crosses educational and cultural social contexts.

2. Problem Statement

2.1. Around the World in a few Minutes: the Spread of Hate Speech

Social media are becoming instrumental platforms to spread harmful content with a significant impact on conflict dynamics and peace. Furthermore, social media, apart from spreading hate speech, are also used to spread disinformation. Through social media, it takes just a few minutes for false and dangerous news to go around the world and become viral (Lupton, 2014). When it comes to social media, the term "viral" comes up very often. By viral, we mean content that spreads very quickly through new means and social media. The term viral comes from the word "virus" because the message, like the exponential spread of a virus, is transmitted by expanding very quickly, from person to person, through the principle of sharing and re-sharing information, messages, or photos. What makes a content viral is undoubtedly the intense degree of involvement it brings with it and the ability to "take root" in one or more virtual communities, transmitting it quickly and, above all, for free (Wahyuningsih, 2018).

Users tend to underestimate the concrete effects of hate speech and what happens in the virtual and viral world. The problem is that some users do not seem to be aware enough of their social media behaviours (Barry et al., 2017). Many do not seem to realizethe psychological gravity that offenses and insults, even if received online, can have on the recipients. There are also numerous studies in this sense: some, focused on ethnic-racial offenses, show, for example, how in the long-term minorities tend to recognize themselves in the characteristics, albeit negative, attributed to them (Michikyan & Suarez-Orozco, 2016).

There is also an effect of group extremism that makes hate speech such a widespread phenomenon on the web, when everyone is sure of addressing selected audiences such as someone's social circles or users who share someone's positions, everyone has once again less hesitation in manifesting even the most extreme and less respectful positions of the other, sure to enjoy the protection of one's own echo chamber (Council of Europe, 2020). The echo chambers are those contexts and those conditions which, on the media, lead to the creation of a state of ideological isolation of individuals. Inside the so-called echo chambers, in fact, mostly news and sources would circulate with a confirming nature of political, religious positions, etc. of individuals. In the echo chambers, the dissemination of news, contents, photos and information is therefore more viral (Bergsma & Carney, 2008).

2.2. Hate Speech in Social Media World

Hate speech is a set of behaviours, verbal and non-verbal, or attitudes and gestures, that incite violence or are discriminatory of a group (or an individual belonging to a group) based on ethnic-racial, political-religious, sexual orientation (Lupton, 2014). However, in its most common use, the expression "hate speech" refers to all those behaviours, primarily verbal, violent, threatening, and disrespectful of the other, which create a climate of hostility and an environment more generally not favourable to minorities of the kind (Michikyan & Suarez-Orozco, 2016).

Experts distinguish between two primary forms of hate speech. In the first form, the threat does not go beyond the mere verbal dimension; it can be, in a sort of primordial heritage, a response to dangers that come from the environment and involves transformations in the voice, gestures, posture. In the second form, however, the intentions of those who make hate speech ignore only the verbal level, and threats can also be physical and corporeal (UN, 2015).

Hate speech is an older phenomenon than the web, although this expression is used today, and it refers mainly to Internet hate speech (or online hate speech) (Lupton, 2014). The possibility of falling into hate speech, after all, has always been a concrete risk when confronted with others in a public space.

Digital environments, such as is social media, would seem more predisposed to the proliferation of offences, exasperated and provocative tones, disrespectful and discriminating attitudes. The first, more traditional, indicted the anonymity of this type of environment (Hobbs & Jensen, 2009). When everyone hides behind the nick and avatar of a social profile, and if someone is protected behind someone screens, everyone would have less hesitation in expressing even the most extreme and less politically correct positions. This was a problem that existed in the old "thematic forums of web 1.0, after all, the so-called flaming (i.e. the publication of messages with hostile and provocative tones) was one of the worries of the moderators (Ferdorov, 2015).

2.3. Peace Speech in Social Media World

In the dialogue for peace, social media takes on extraordinary importance. In recent years, there are examples in social media of campaigns that have successfully mobilized and empowered people, notably the youth, to allow an inclusive dialogue on issues such as climate change (Muhid et al., 2019).

In 2019, thousands of students around the world took to the streets "physically" to demand stronger action on climate change by their governments. Yet they have created a movement that has continued to live on the web above all through social media and through the network they have actively continued to protest. It is called "Global strike for future". It is the global movement of young people who shout loudly: "We do not want your hopes, we want you to join us". The demonstrations, inspired in particular by the young activist Greta Thunberg, will cover more than 100 countries, with young people ready to ask for an intensification of actions to tackle climate change on a global level. A social impetus on the part of young people,

which many would not have expected, used to thinking of today's teenagers as constantly focused on their devices and not very attentive to what is happening in the world (Schilder et al., 2016).

Yet, the demonstrations of these young people seem to be a sign that the great social movements are increasingly starting from the web and social media and are constructively influencing governments. Additionally, there are examples on social media of initiatives and narratives that create incentives for peace rather than violence. There are discussion forums on peace building that encourage that there can be a positive way to "live" in the world of social media (UN, 2015).

2.4. Media Literacy: the Digitization of Educational Processes

Literacy (translated into Italian with the somewhat reductive term of "literacy") indicates the ability of an individual reading and writing and calculation skills (Tse et al., 2015).Media literacy assumes strategic importance, especially for the young population. It has been statistically proven, in fact, that children and adolescents spend most of their time in contact with different media: from television to the internet, to mobile telephony. The use of the media, especially in recent years with the advent of smartphones, represents the activity that covers most of the hours of a teenager's day (Council of Europe, 2020).

And, by the media, young people are continually influenced, both in their intellectual life and in their emotional and social life. It is from there that they draw important elements to build their own identity, their own models of health and well-being, and of social behaviour. It is clear, therefore, that from an educational and training point of view, it is necessary not so much to protect young people from unwanted messages, but to make them skilled in using the media and the information conveyed there in a critical and creative way to promote their individual and social development (Maghsoudi et al., 2020).

For several years, the world of public health has recognized the role and influence that the media exert on people's health choices and behaviours in terms of information conveyed and models of reference. With the advent of social media, smartphones, and new technologies in general, the media are increasingly rooted and pervasive in our daily life, and therefore they must be considered to all intents and purposes as social and cultural determinants of health (MacAvaney et al., 2019).

The media have the power to influence our values, attitudes and behaviours. The images and words that reach us daily reproduce behavioural codes and cultural meanings, and spread stereotypes about life, health, and illness. In the literature, the negative influences of the media on health behaviours have been studied, with respect to the following areas: sexual risk behaviours, obesity, perception of body image and eating disorders, tobacco smoking and alcohol consumption (Schilder et al., 2016).

The need and importance of stimulating people is evident. Individuals, particularly younger people, use critical thinking in relation to the messages, images and values conveyed by the media to understand how and to what extent they can

influence health choices. It is for these reasons that media literacy education (MLE) must be integrated into school and university programs (UNESCO, 2021).

When literacy enters the sphere of mass communication, we speak of media literacy, or the competence in knowing how to read, decode and process the information conveyed by the various media communication: from television to the internet; from music videos to print (Brunori & Pediconi, 2019).

MLE (MLE) is an educational and didactic activity aimed at developing information and critical understanding in young people about the nature and categories of media. The techniques are used by the media to construct, interpret, and disseminate specific messages and languages. The MLE indicates education with the media considered as tools to be used in general educational processes. Media education, which refers to the critical understanding of the media, is understood not only as tools, but as language and culture. The purpose of media education is to offer new generations the keys to understanding the media, but also to promote better media quality and a constructive contribution to the relationships that young people build on the media. The term MLE means "media literacy", i.e. the set of knowledge and skills that allows everyone to use the media and their contents in a conscious, effective and safe way. It is a fundamental element of individual training, which schools and universities should also promote. MLE is that education that is an integral part of the cultural background of an active and responsible digital citizen (Bergsma & Carney, 2008).

Young people spend a lot of time on social media, hence the need to be educated in a careful and conscious way. Young people, with their smartphone or notebook, receive a large number of messages that they do not always fully understand. The MLE is an effective way to teach young people to apply critical thinking to these communications. It is important to find an effective teaching method for MLE. Among these, an effective method could be to start from the current news and guide them in a path of analysis that helps them to reflect on the sources, the language used, the symbols, the visual aspects (UNESCO, 2021).

Another area in which to apply an effective MLE method is the analysis of advertising messages, which can be useful to reflect on how the media are also used to persuade and influence opinions and actions. The media need a literacy process, which is why the promotion of skills for reading and writing MLE media is necessary. Furthermore, students must be supported in such a way that they can develop critical and responsible thinking about the media (Maghsoudi, Shapka & Wisniewski, 2020).

Based on these theoretical premises, the MLE needs its own space in schools and universities. Some argue that they need to be integrated into a subject curriculum in which MLE is taught as a single subject by trained and specialized teachers. There are others who argue that research projects are needed to support students in this constructive learning path of MLE. Hence, MLE is the ability to enable young people to learn how to access, analyse, construct and evaluate media messages in all their forms (positive or negative) (Bergsma & Carney, 2008).

3. Research Questions/Aims of the Research

This research aims to strengthen the attention of Civic Universities such as LUMSA in promoting sustainable development, social justice, and human rights. This is done by promoting MLE, which supports and educates the recognition, awareness, and avoidance of potentially harmful content spread online and hate speech inciting violence. At the same time, MLE promotes justice, peaceful and inclusive societies, provides access to justice for all, and builds effective, accountable, and inclusive institutions. It is essential to promote peace through digital technologies, especially social media, which are a privileged tool of choice, especially for teenagers and young adults (MacAvaney et al., 2019). In this paper, designed by researchers involved in the academic "RUniPace" Italian network, the strategies to contrast hate speech promote a culture of peace through increased educational media literacy to minimize prejudice and religious intolerance and promote social justice. In this sense, Universities' role in promoting peace is to encourage responsible citizenship and not merely to transmit knowledge (Bergsma & Carney, 2008).

4. Research Methods

We conducted research divided into three phases.

In Phase1, we conducted a teaching laboratory called "the analysis of the world of social media" during class hours. In this phase, we involved students enrolled at LUMSA in the degree courses of general sociology and developmental psychology, and we studied together (faculty/students) the world of social media. During this phase, the support of the students was essential as they are the primary users of social media. Students explored Facebook, TikTok and Instagram and specifically those (unofficial) groups that have many college students as users.

In Phase2, we conducted a qualitative analysis of the content found (60 items) in university groups, pages, and profiles by collecting news, posts, photos, and comments on social media. In this phase, we used a Google form to collect the data that allowed us to express an opinion if the message coming from social media was connoted by hate speech or not. Students who participated in the first phase focused on content analysis through personal, qualitative research of information from social media.

The Phase 3 consisted of sharing (teachers/students) the qualitative results of analysing the 60 items collected in social media with students. This was to promote and support the constructive use of social media in college students. This phase was intended to encourage students' awareness of productive social media use and content. Specifically, the effects of training on mitigating social media risks include misinformation and disinformation, echo chamber and filter bubble, and misuse of artificial intelligence algorithms.

5. Findings

The principal results of this preliminary survey are as follows.

Hate content, violent language, controversy, and resentment prevail in unofficial university Facebook, Instagram, and TikTok pages, profiles, and groups. Students rarely post peacemaking content. Often, social media is the tool for venting frustrations with the university institution, course organization, and professors. Content of this type has high engagement and finds much acceptance. Hate content is often disguised as polemic language that, while not violent, contributes to the spread of a style of language that is not pacifying and collaborative, but instead one of resentment and social hatred. This has repercussions in every sphere of relational life, and not only in the university.



Figure 1. Polemic speech example
Source: Instagram. Unofficial students group (2021).



Figure 2. Body shaming example
Translate: Dear F.B. Cover that nose... mare!
Source: Facebook. Unofficial spotted students group (2021).

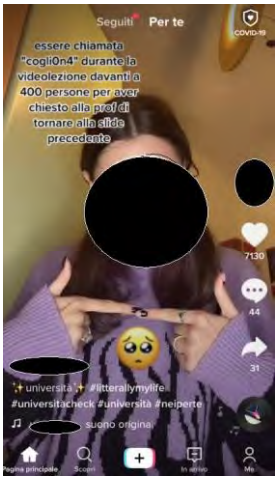


Figure 3. Hate speech example
Translate: Being called a "cunt" during the videolesson in front of 400 people for having asked the teacher to go back to the previous slide.
Source: TikTok. Unofficial students group (2021).

Indeed, the spread of hate language feeds the closure towards the other, prevents the search for solutions for social change and therefore is, in our opinion, the main problem that prevents social and economic innovation. In light of these preliminary

results, we believe that the role of Universities, also in promoting MLE and the conscious and critical use of social media, is central in encouraging civic engagement, the collaboration between citizens and institutions, and the spread of collaborative practices between companies and communities.

6. Conclusions

It is necessary to increase educational media literacy to minimize prejudice and religious intolerance and to promote social justice. Universities' role, in this sense, such as the schools' one, is manifold also in promoting peace and spreading peaceful development because all educational institutions have the task of educating to reflexivity, encouraging responsible citizenship and not merely transmitting knowledge. This is what the post-COVID society needs.

To promote peace and spread peaceful development and promote social and economic innovation, this research follows the Sustainable Development Goals (SDGs), which are a series of 17 interconnected goals, defined by the UN (2015) as a strategy "to achieve a better and more sustainable future for all".

They are also known as the 2030 Agenda, from the name of the document entitled *Transforming our world. The 2030 Agenda for Sustainable Development*, which recognizes the close link between human well-being, the health of natural systems and the presence of common challenges for all countries. The Report highlighted some guidelines that could determine significant progress, such as, for example, the development of sustainable finance, institutional modernization, effective international cooperation and multilateral action, better use of statistical data and the enhancement of science, technology and innovation, with a greater focus on digital transformation. Digital education is essential within the 2030 Agenda. In this sense, digital literacy is important, as it aims to guarantee education in the conscious use of digital devices, being an important factor in improving people's lives and making sustainable development feasible.

Furthermore, regardless of the forms taken (written or oral, verbal or non-verbal, explicit or implicit) and the legal scope (any "hate crimes"), it may fall within the definition: hate speech - any violent or discriminatory expression towards other people or groups of people.

Precisely because hate speech affects people for their personal characteristics and/or conditions, actions to combat the phenomenon need to adapt to the context and to the social, economic, political and technological phenomena in progress.

In this sense, the university has a crucial role in combating hate speech today, which crosses the dilemmas and contradictions of the nascent digital age. In a recently published report, the Council of Europe (2020) has included hate speech within the broader problem of information disorder, a pollution of content on a global scale that sees the "pathologies" of hate speech intertwine and of the so-called fake news: disinformation would arise from the encounter between misinformation (dissemination of false but harmless news) and mal information (true news but spread with the intention of striking). In particular, the Council of Europe (2020) argues: *"Over the years, the Council of Europe has worked in multiple manners to*

counter hate speech. The media and internet division's work in this area is based on a <<freedom of expression perspective>>, which focuses on co-operation with member states in preparing, assessing, reviewing and bringing in line with the European Convention on Human Rights any laws and practices that place restrictions on freedom of expression. [...]. Hate speech in the online space requires further reflection and action on the regulation and new ways for combating it."

Thus, the role of University education for the prevention of hate speech is essential because through training, students build the bases of essential principles of media literacy education. In this sense, University training will be essential for the creation of the society of tomorrow based on the promotion of social justice and respect for human rights.

7. Limitations

We also want to highlight another possible limitation that concerns active involvement in the early stages of our very young students, who we immediately considered active researchers. We are aware that young newcomers may not be equipped with social research methodological tools. We know that it is difficult for them to carry out punctual recognition of phenomena with awareness and competence. However, in reality, this limitation is perhaps the value added of this research. If we had not entrusted ourselves to young students who know the language and rules of social media very well, and if we had not delegated to them the exploration and understanding of the digital content of the platforms, perhaps we would not have been able to delve so deeply in these digital spaces closed to many adults. These spaces are a new level of reality that is added to the non-digital one. We must consider them as such and try, as much as possible, to understand the mechanisms of operation. Perhaps we can prevent them from becoming containers of hatred and violence. Perhaps they can be a space to experiment new relationships and new socialities marked by civil and peaceful confrontation.

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We thank the students enrolled at LUMSA in the degree courses of general sociology (first year) and developmental psychology (second year). With them, we are currently still working on detecting hate speech on digital platforms and social networks. Thank you for the precious support that has allowed us to carry out this research. Furthermore, we thank Professor Calogero Caltagirone, Coordinator of the

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Academic Journals' Performance: Opportunities for Research Visibility

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Abstract

Researchers prefer to disseminate their work through high quality journals. For some, publishing in a prestigious journal might ensure a promotion or the international recognition they need in their career. However, in the Central and Eastern European (CEE) region, such publishing options for Core Economics research are scarce. This paper investigates the performance of the Core Economics journals published by the CEE countries and identifies the main success factors in improving journal performance, by assessing these journals' experiences based on Journal Citation Reports (JCR) key indicators and Web of Science (WoS) paper citation data, as well as through information provided on the journals' websites. The key indicators analysis looked at the article influence score (AIS) evolution in the past five years (i.e., the 2016-2020 period), the impact factor (IF) for 2020, the total cites in 2020, the citable items published in 2020 (i.e., the number of articles and reviews published in 2020), and the rank based on the 2020 IF. Journals benefiting from (1) funding, (2) publishing at prestigious publishers, (3) inter-university partnerships, and (4) journal management and publishing software could potentially achieve higher performance.

Keywords: academic journal, bibliometric, core economics, research visibility.

JEL Classification: A19, I29, O39.

1. Introduction

The scientific development of a country is partially defined by the number of papers it publishes in prestigious scholarly journals (Tonta & Akbulut, 2020).

The Thomson Reuters ISI Web of Science database is a leading high-quality database for evaluating the research performance of individual researchers and the quality of academic journals (Chang et al., 2011). Jurajda et al. (2017) compared the publication performance in more than 200 Web of Science (WoS) scientific disciplines for six of the post-communist European Union (EU) states with six

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similarly sized EU states, and concluded that, as of 2010-2014, the post-communist countries were still lagging behind, their research mainly focusing on quantity, rather than quality. Examining whether monetary support could increase journal performance metrics, Tonta and Akbulut (2020) discovered that although subsidies could slightly increase the number of citations, they are not effective in improving the citation impact of a journal. However, looking specifically at the Romanian journals, Pisoschi et al. (2020) showed that paper awarding programs and fiscal incentives, as well as a favourable institutional management and good researcher capabilities could lead to better bibliometric performance.

Studying the publication success of 102 countries, out of which ~50% are Western European and ~30% North American, Erfanmanesh et al. (2017) concluded that the scientific productivity of a country depends on the number of journals they have indexed in citation databases.

Academic journals are important research and knowledge disseminators, prominent journals being especially sought after by researchers. Still, as data manipulation is one of the greatest disadvantages of bibliometrics, some authors recommend combining bibliometrics with altmetrics (i.e., engagement metrics, beyond citations) as an alternative when assessing paper/journal impact (Karanatsiou et al., 2017). Other authors suggest that new ways of ranking academic journals should be implemented. For example, Rosenthal and Weiss (2017) created a model for ranking business journals from different Journal Citation Reports (JCR) categories, instead of focusing on only one field, and concluded that the business publication ranking lists should introduce new journals and exclude some others. Moreover, the COVID-19 experience sparked new trends in the research landscape (Science et al., 2020; Minciu et al., 2020; Maulana, 2020).

Journals are mainly assessed using a number of quantitative performance metrics. One of the most widely used indicators, the impact factor (IF), provides the average number of citations received by articles published in a particular journal in the past two years compared to the reference year. However, as the IF has its shortcomings in evaluating a journal's performance, other indices were introduced, such as the article influence score (AIS). The AIS formula integrates the Eigenfactor, and thus, it overcomes the limitations of the IF by removing self-citations, using five years instead of two years data, considering the quality of the citing journals and adjusting for the differences in citation patterns among disciplines. A value of AIS above 1.00 indicates an above average influence of the journal in its discipline (InCites, 2021).

The Romanian legislation requires higher education and research professionals to publish their work in academic journals with AIS > .15, as a prerequisite for promotion to university professor or scientific researcher I (Annex no. 27, 2016). However, considering the AIS calculated for 2020, only one Romanian academic journal in the Core Economics categories has an AIS > .15 (JCR, 2021).

The paper investigates the performance of the Core Economics journals published by the Central and Eastern European (CEE) countries and identifies the main success factors in improving journal performance, based on these journals' experiences.

International academic rankings are very important tools for assessment of university performance based on journals' visibility and classification (Q1 to Q4). The classification of the journals on the four categories (Q1, Q2, Q3, Q4) is based on the AIS and IF values published every year. An important factor for academic rankings (Shanghai Ranking) is the correspondence of the specialization with the journal category. In the Core Economics field, the most appreciated journals should be in the Q1 category according to AIS, in the management, business, economics or finance categories.

2. Methodology

The objective of this research is to further develop an assessment model for journal classification and performance evaluation. This paper will particularly analyse the experience of the CEE countries in the region and set up some lessons for Romanian journals.

The investigation was divided into three steps.

Firstly, CEE journals' data was extracted from the Journals by Rank section of the Web of Science (WoS) InCites Journal Citation Reports (JCR) platform (JCR, 2021). The following search criteria were defined: (1) Categories: Core Economics (i.e., Business; Business, Finance; Economics; Management), (2) JCR year: 2020 (i.e., the newest scores available), (3) Edition: Social Sciences Citation Index (SSCI), Science Citation Index Expanded (SCIE), (4) Open access: not mandatory, (5) Category schema: Web of Science, (6) Countries: the CEE region (i.e., Romania, Bulgaria, Hungary, Poland, Czech Republic, Estonia, Lithuania, Latvia, Slovenia, Slovak Republic), and (7) Impact Factor range, Average JIF percentile range, JIF Quartile, and Publisher: undefined.

Secondly, Web of Science citation data was exported for each journal and used for creating a citation network in VOSviewer.

Finally, the analysis was rounded through the publishing information available on the journals' websites.

3. Findings

The search on the JCR platform returned 19 journals. The key indicators analysis looked at the AIS evolution in the past five years (i.e., the 2016-2020 period), the IF for 2020, the total cites in 2020, the citable items published in 2020 (i.e., the number of articles and reviews published in 2020), and the rank based on the 2020 IF.

Table 1 provides an overview of the 19 CEE journals, sorted in descending order by their 2020 AIS. The journal names were coded throughout the paper, in order to unbiasedly focus on their performance.

Table 1. Overview of selected key indicators for the 19 CEE journals indexed in Core Economics, WoS. Table sorted in descending order of the 2020 AIS

	Journal	Country	AIS*					2020 IF	Total cites in 2020	Citable items pub. in 2020	Rank **
			2016	2017	2018	2019	2020				
1	JC1	Czech Rep.	AIS not available for 2016-2019				0.502	4.725	849	40	Q1 Ec Q2 B Q2 M
2	JL1	Lithuania	0.507	0.442	0.457	0.352	0.498	3.970	2213	62	Q1 Ec
3	JL2	Lithuania	0.189	0.174	0.183	0.190	0.361	2.028	1579	84	Q2 Ec Q4 B
4	JL3	Lithuania	0.150	0.221	0.186	0.182	0.322	2.093	769	33	Q4 M
5	JP1	Poland	AIS not available for 2016-2019				0.305	4.274	476	32	Q1 Ec
6	JLa	Latvia	0.099	0.110	0.150	0.194	0.286	2.150	133	10	Q2 Ec
7	JC2	Czech Rep.	0.115	0.067	0.095	0.112	0.204	1.711	792	58	Q3 Ec
8	JL4	Lithuania	0.097	0.092	0.086	0.088	0.181	1.292	765	50	Q3 Ec
9	JL5	Lithuania	0.043	0.085	0.056	0.070	0.171	1.725	668	32	Q3 Ec Q4 B
10	JR1	Romania	0.049	0.062	0.060	0.057	0.169	1.983	768	72	Q2 Ec Q4 B Q4 M
11	JC3	Czech Rep.	0.067	0.090	0.070	0.086	0.164	1.446	551	55	Q3 Ec Q4 M
12	JHu	Hungary	0.048	0.049	0.057	0.052	0.153	0.875	275	37	Q4 Ec
13	JR2	Romania	0.039	0.093	0.100	0.100	0.143	0.885	464	76	Q4 Ec
14	JR3	Romania	0.038	0.025	0.051	0.070	0.133	0.831	346	40	Q4 Ec
15	JC4	Czech Rep.	0.108	0.086	0.088	0.100	0.126	0.481	308	35	Q4 Ec
16	JC5	Czech Rep.	0.133	0.123	0.084	0.099	0.124	0.792	268	20	Q4 B, Fin
17	JSv	Slovak Rep	0.043	0.031	0.045	0.065	0.093	0.690	309	53	Q4 Ec
18	JC6	Czech Rep.	0.053	0.043	0.038	0.035	0.074	0.319	172	29	Q4 Ec
19	JP2	Poland	0.047	0.025	0.020	0.030	0.071	0.368	94	27	Q4 Ec

* Green shading => AIS > .15

** Rank by JCR IF; Ec=Economics; B=Business; B, Fin= Business, Finance; M=Management

Source: Selected InCites JCR data.

It can be observed that out of the ten CEE countries, Bulgaria, Slovenia and Estonia do not have any journals indexed in the Core Economics categories of WoS, in the SSCI or SCIE indexes.

Out of the 19 CEE journals returned by the search, 12 had an AIS >.15 in 2020, and only three out of them consistently did so in the past four-five years (these three journals are all Lithuanian).

The Czech "JC1" and the Polish "JP1" got their first AIS score in 2020, as their WoS data did not cover five years until then. Both journals also had high IF scores

compared to the other journals in Table 1, and are ranked as Q1 or Q2 in their respective Core Economics categories.

The 19 journals have an average 2020 AIS of .214, an average 2020 IF of 1.717, average total cites in 2020 = 621, and an average of 45 citable items published in 2020 (i.e., articles and reviews), as presented in Table 2.

Table 2. Descriptive statistics of the 19 CEE journals indexed in WoS, the Core Economics categories

	N	Min.	Max.	Mean
AIS (2020)	19	.071	.502	.214
2020 IF	19	.319	4.725	1.717
Total cites in 2020	19	94	2213	621
Citable items pub. in 2020	19	10	84	45

Source: SPSS analysis of InCites JCR data.

The analysis was expanded by consulting the WoS citation data on the 19 CEE journals for all years available (i.e., the 1975 - July 2021 period). The search returned 16,334 papers (i.e., articles, review articles and proceedings papers) published by the 19 journals as part of the Core Economics categories. A number of 11,222 papers are written in English.

Out of the total 16,334 papers, 16 papers are considered highly cited at the end of July 2021, having 1,436 citations total (excluding self-citations), with an average of 101 citations per paper and *h*-index = 15. The authors of these papers come from the People's Republic of China, Lithuania, Saudi Arabia, Spain, Iran, Montenegro and the USA. A number of 13 out of the 16 highly cited papers were published in "JL1", while "JL2", "JR2" and "JL5" have each published one of these papers. The highly cited paper (cited 134 times) published in 2016 in the Romanian journal "JR2" was written by authors with affiliation to Vilnius Gediminas Technical University – Lithuania and Allameh Tabataba'i University – Iran. Two of this paper's authors also published the highest cited paper in the whole set of 16,334 papers, cited 390 times since it was published in "JL1" in 2011.

Looking at the full set of 16,334 papers, authors with affiliation to the Bucharest University of Economic Studies have published the highest number of papers (i.e., 1,171 papers, ~ 7.17% out of 16,334), followed by the Czech Academy of Sciences with 867 papers (~ 5.31%). The papers with Bucharest University of Economic Studies affiliation have an average of 3.97 citations per item, with *h*-index=22, a visual representation of their citation evolution being available in Figure 1. The highest cited paper out of them has 80 citations (as of the end of July 2021) and was published in "JR1" in 2010.

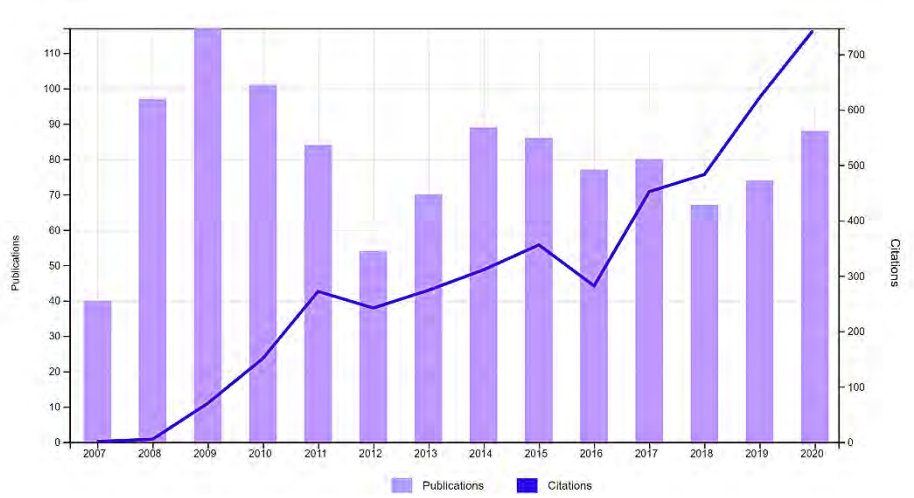


Figure 1. Citation evolution of the papers with Bucharest University of Economic Studies affiliation indexed in WoS, the Core Economics categories

Source: WoS, 2021.

The citation evolution of all the open access papers (5,836 papers out of 16,334) is available in Figure 2.

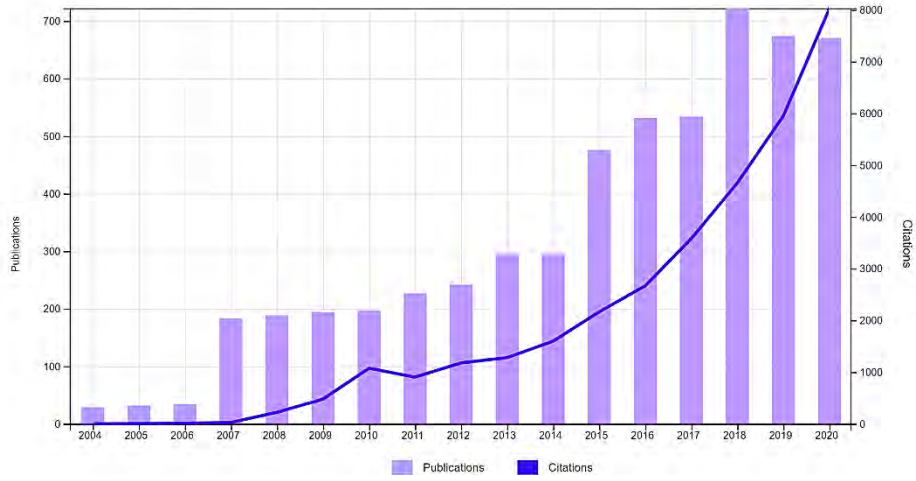


Figure 2. Citation evolution of the open access papers published by the 19 CEE academic journals indexed in WoS, the Core Economics categories

Source: WoS, 2021.

As for the number of papers published by each journal, "JSv" published the most papers (i.e., 2,734), followed by "JC6" with 2,701. The Romanian journals "JR2", "JR1" and "JR3" are on the 5th (943 papers), 6th (897 papers) and 12th (657 papers) places, respectively.

The "Slovak Academic Press Ltd" has published the most papers (i.e., 2,792, ~16.% out of 16,334). These papers have an average of 1.36 citations per item, *h*-index = 18. They are followed by "Vilnius Gediminas Tech Univ", which has published 1,955 papers (i.e., ~12% out of 16,334) having 12.32 average citations per item, *h*-index = 58.

The top three funding agencies based on the number of financed papers are: "National Natural Science Foundation of China – NSFC" (with ~1.61% out of 16,334 papers), "Grant Agency of the Czech Republic" (~0.96%) and "European Commission" (~0.8%), as of the end of July 2021. These papers have an average of 6.23 citations per item, *h*-index = 26.

A citation network of the journals was created in VOSviewer based on the citation activity of the 19 journals in the past five years (i.e., 2016-2020, with 4,462 paper records for the period), as available in Figure 3.

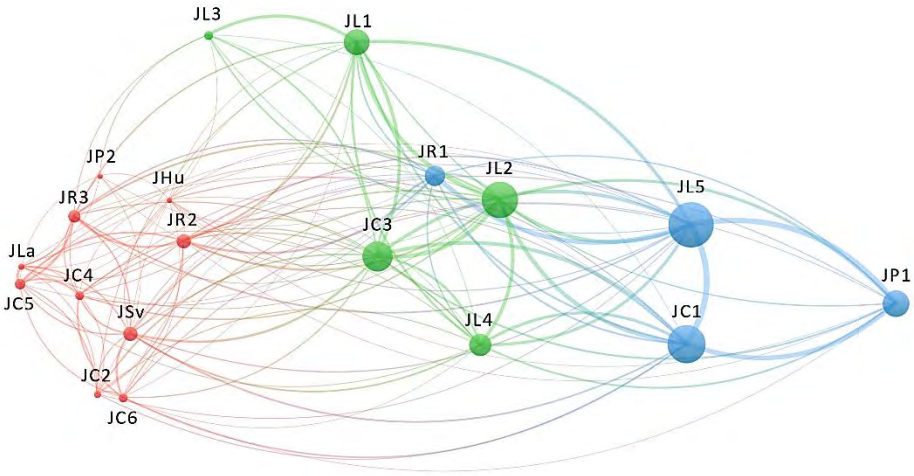


Figure 3. Citation network of the 19 CEE academic journals indexed in WoS, the Core Economics categories, for the 2016-2020 period

Source: VOSviewer analysis of WoS data, 2021.

Each circle in *Figure 3* represents one of the 19 CEE journals. The circle size represents the total link strength of the journal (i.e., the total number of times their papers published in the period were citing/being cited by the other journals in the network). The distance between the journals and the clustering show their relatedness. A thicker line between two journals represents a higher number of citations between their papers.

One of the Lithuanian journals, JL5, has the highest total link strength for 2016-2020, its 448 papers published in the period citing/being cited 417 times in 17 out of the other 18 CEE journals. The Romanian journals had total link strengths of:

96 (with 14 links and 371 papers published in the period), 154 (16 links, 317 papers), and 83 (13 links, 203 papers).

Some of the 19 CEE journals are self-published and work as revenue generators for their institutions. For example, "JL1" is owned and published by Vilnius Gediminas Technical University and is publishing open source under a fee of 45EUR/page + 21%VAT rate. For an article of approximately 23 pages, as of the 2019 information provided by the journal, the authors, or their funding institutions, have to pay 1,253 EUR. According to the JCR data provided in Table 1, "JL1" published 62 articles in 2020, attracting revenues of approximately 77,686 EUR with VAT, if the papers had ~23 pages. More details on the publishing aspects of the journals are available in Table 3. With the exception of "JL5", all journals are (or have the option for) open access, as of May 2021 information published on their websites.

Table 3. Publishing information for the 19 CEE journals indexed in WoS, the Core Economics categories

	Journal	Institution	Publisher	Fees (2021)
1	JC1	Tomas Bata University in Zlín	Tomas Bata University in Zlín	450 EUR/art + VAT for publishing
2	JL1	Vilnius Gediminas Technical University	Vilnius Gediminas Technical University	45 EUR/page + VAT 21%
3	JL2	Vilnius Gediminas Technical University	Vilnius Tech Press (2003–). Co-published with Taylor & Francis in 2011–2017.	60 EUR/page + VAT 21%
4	JL3	Vilnius Gediminas Technical University	Vilnius Gediminas Technical University (1997–). Co-published with Taylor & Francis (2011–2017).	60 EUR/page + VAT 21%
5	JP1	Institute of Economic Research (Poland) and Polish Economic Society, in collaboration with universities in the Czech Republic, Romania („Constantin Brâncuşi" University in Târgu Jiu), Hungary, the Russian Federation, Ukraine, Spain, Slovak Republic and Lithuania	Institute of Economic Research (Poland)	40 EUR/art for submission, and 500 EUR/art for publishing
6	JLa	Stockholm School of Economics in Riga, and the Baltic International Centre for Economic Policy Studies	Taylor&Francis and Routledge	-
7	JC2	Czech Academy of Agricultural Sciences	Czech Academy of Agricultural Sciences	320 EUR/art + VAT
8	JL4	Kaunas University of Technology	Kaunas University of Technology	322.31 EUR/art + VAT 21%
9	JL5	Vilnius University (Lithuania), Brno University of Technology (Czech Republic), University of Latvia (Latvia)	Vilnius University (Lithuania), Brno University of Technology (Czech Republic), University of Latvia (Latvia)	-

	Journal	Institution	Publisher	Fees (2021)
10	JR1	Bucharest University of Economic Studies	ASE Publishing House	-
11	JC3	Technická univerzita v Liberci Studentská 2	Technická univerzita v Liberci Studentská 2 and Wolters Kluver	100 EUR (incl. VAT) for review + 500 EUR (incl. VAT) for publishing
12	JHu	Hungarian Academy of Sciences	Hungarian Academy of Sciences	749 EUR/article + VAT for open access
13	JR2	Bucharest University of Economic Studies	ASE Publishing House	-
14	JR3	Institute for Economic Forecasting	Institute for Economic Forecasting	-
15	JC4	Prague University of Economics and Business	Prague University of Economics and Business	60 EUR submission fee
16	JC5	Charles University	Charles University	-
17	JSv	Institute of Economics of the Slovak Academy of Sciences, and the Institute of Forecasting of the Slovak Academy of Sciences of the Slovak Republic	Institute of Economics of the Slovak Academy of Sciences, and the Institute of Forecasting of the Slovak Academy of Sciences of the Slovak Republic	-
18	JC6	University of Economics in Prague	University of Economics in Prague	-
19	JP2	Worclaw Univeristy of Economics and Business	Worclaw Univeristy of Economics and Business	100 EUR/art + VAT 23% for submission, and 200 EUR/art + VAT 23% for publishing

* Table sorted in descending order of the 2020 AIS.

Source: Authors' analysis as of May 2021 information published on the journals' websites.

3.1. Lessons from the Best Performers and Successful Partnerships

Table 4 offers an overview of the partnerships the 16 foreign academic journals have, along with information on their funding and their use of article management systems. Academic journals benefiting from (1) funding, (2) publishing at prestigious publishers, (3) inter-university partnerships, and (4) journal management and publishing software could potentially achieve a higher AIS and better positions in the academia preferences for publishing.

Table 4. Partnerships, funding and article management systems of the 16 foreign CEE journals indexed in WoS, the Core Economics categories

	Journal	Partnerships	Funding	Article management sys.
1	JC1	Has partnerships with nine European universities and a Vietnamese university.	*unspecified*	Uses Open Journal Systems 3.3.0.3 for journal management and publishing. The author(s) is/are required to provide an editing certificate from a reputable publisher, certifying that the manuscript has received proofreading.

	Journal	Partnerships	Funding	Article management sys.
2	JP1	Has partnerships with several universities and institutions in Poland, the Czech Republic, Romania ("Constantin Brâncuşi" University of Târgu-Jiu), Hungary, the Russian Federation, Ukraine, Spain, the Slovak Republic and Lithuania.	*unspecified*	Submitting articles for review is performed through a form available on the journal's website.
3	JL1, JL2, JL3	The three Lithuanian journals, which consistently had an AIS > .15 in the past four-five years, have been published by (or in collaboration with) Taylor & Francis.	JL1 had its publishing fees partially covered by the "Publication and Coordination of Scientific Periodicals, 2016–2019" (Code No. 09.3.3-ESFA-V-711-01-0004, No. PML-2016/03) project in the 2016-2019 period (JL1, 2021a). The project was implemented by the Lithuanian Academy of Sciences in partnership with the Vilnius Gediminas Technical University and other Lithuanian institutions, and had a budget of more than 2 million EUR, funding 22 publications, six of which being in the Social Sciences.	These journals use the ScholarOne platform for uploading and managing articles.
4	JLa	*unspecified*	The journal does not charge taxes. The article publication is supported by the Bank of Latvia, the Bank of Lithuania and the Bank of Estonia.	The Taylor & Francis platform is used for loading and managing articles.
5	JC2	*unspecified*	Funded by the Ministry of Agriculture of the Czech Republic.	It uses a platform to centralize received items.
6	JC4, JC6	*unspecified*	Sponsored by the Czech National Bank, Česká spořitelna Bank (Erste Group), and Komerční banka (Société Générale).	Articles are uploaded through their websites.
7	JC3	Has partnerships with nine universities in the Czech Republic and Slovak Republic.	*unspecified*	Uses its own platform to centralize articles.
8	JP2	*unspecified*	Receives funding from the Polish Ministry of Science and Higher Education.	Is uses the Worclaw University of Economics and Business' portal for article submission.
9	JHu, Jsv, JL4, JC5	*unspecified*	*unspecified*	Article submission is performed through their websites or e-mail.

Source: Authors' analysis as of May 2021 information published on the journals' websites.

3.2. Romania's Core Economics Academic Journals' Experience

The Romanian journals indexed in WoS, Core Economics, are published by the institutions they belong to and do not charge fees. The manuscripts are either submitted through a form or e-mail. They have a number of issues per year and are also outlets for papers presented in some international conferences.

The Romanian journals do not provide information on their websites regarding any external funding or inter-university partnerships they might have. Based on WoS data accessed at the end of July 2021, the top three funding agencies for the Romanian Core Economics journals, considering the number of financed papers, are: "National Natural Science Foundation of China – NSFC" (~2.2% out of the 2,497 papers), "National Council for Scientific Research – CNCS" (~1.2%) and "European Social Fund through Sectoral Operational Programme Human Resources Development" (~1.08%).

All of the Romanian Core Economics journals had in 2020 their highest AIS for the past five years, according to JCR (2021) data. "JR1" is the only Romanian Core Economics journal with a 2020 AIS > .15.

As of the end of July 2021, these journals have published 2,497 articles, review articles and proceedings papers since 2007, ~60.2% having Romanian affiliation, and 98% being written in English. The 2,497 papers received 7,632 citations (excluding self-citations), with an average of 3.72 citations per item, *h*-index = 29. The citation evolution is presented in Figure 4.

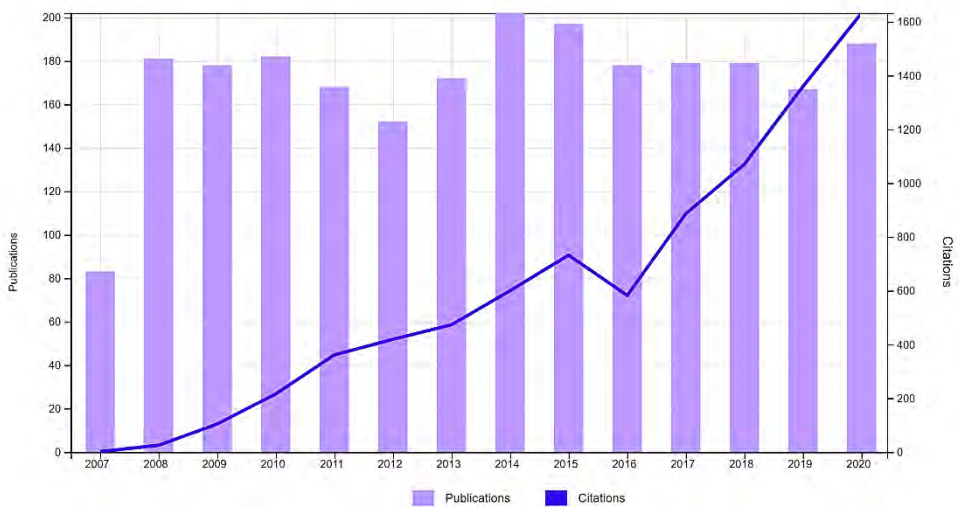


Figure 4. Citation evolution of the papers published by the Romanian academic journals indexed in WoS, the Core Economics categories

Source: WoS, 2021.

4. Conclusions

The perceived research performance of individual researchers is very important for hiring, firing, tenure and promotion decisions (Chang et al., 2011). Thus the journal evaluation should be analysed according to the academic criteria for evaluation, selection, and promotion in different countries.

The experience of the CEE countries showed that academic journals benefiting from (1) funding, (2) publishing at prestigious publishers, (3) inter-university partnerships, and (4) journal management and publishing software could potentially achieve a higher AIS and better positions in the academia preferences for publishing.

It should be noted that a fast-growing journal could have a temporary decline in its AIS, as its papers might need more time to be cited, while journals that choose to publish fewer papers could have an artificial increase in their AIS.

Country wise, the research showed that Lithuania, the Czech Republic, Poland and Latvia had the best AIS results for their WoS Core Economics journals in the 2016-2020 period, compared to the other CEE countries.

The study is limited by using only WoS key indicators and analysing the citation network based only on the relationships between the 19 journals. Further research could investigate more indicators, data from other databases, the 19 journals' relationships with other journals, or focus on the trends in their papers' themes or affiliations in correlation with their citing performance.

The investment in the journal international visibility through partnerships with recognized academic publishers, digital submission platforms would provide a preliminary status for attracting high quality papers and citations for better positioning in the journal classifications.

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Urban Natural Areas, from Nature Conservation to Well-being Assets

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Abstract

The increased density of human population globally and the negative impact of some human actions put pressure on the components of natural capital and its ability to regulate and support the effects of human activities. The high complexity of urban systems, multidisciplinarity of issues and multiple impacts they face (resulting from overpopulation, pollution, climate change and, more recently, pandemics) pose an increased challenge for the management of urban agglomerations. In this context, terms such as resilience and sustainability or environmental protection are increasingly used in public administrations. In this review, we want to highlight the importance of green urban areas in providing cultural and regulating benefits to society and the role students' play in identifying and raising awareness on the services that natural capital offers to human communities. The reviewed literature emphasizes the multifunctional role of urban natural areas, including biodiversity conservation and provision of benefits essential for human population well-being. Despite the general recognition of the positive role of civic engagement for the development of highly qualified and better adapted human resources, our review revealed the limited civic engagement of universities in assessing and raising awareness on the role of green areas for urban communities. We also noticed an increased interest of universities in growing their impact on society and giving students opportunities for civic engagement.

Keywords: urban natural areas, stakeholders, ecosystem services, students, social factor.

JEL Classification: I310.

1. Introduction

The highest rate of human population density is currently found in cities. It increased to 47% by 2000 and is expected to reach 60% by 2030. The increase will be predominant for the urban environment and is caused by the migration of the

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population from the rural area, which will lead either to the formation of new cities or to the increase of the surface of the existing cities (Decker et al., 2007; Montambault et al., 2018).

The growth and development of urban territories lead to a reduction in the area covered by the natural capital and, consequently, to a decrease in the supply of ecosystem services it provides to the human population. More and more countries or cities have called for local, national, or regional actions to enhance the services provided by green urban areas (Bertram & Rehdanz, 2015). To minimize the impact on the quantity and quality of ecosystem services, development and enhancement of the "green infrastructure" of urban agglomerations is essential (Wagner et al., 2019). "Green Infrastructure" is a general term for a network of green areas, conservation sites (e.g., urban protected natural areas) or water bodies, able of delivering a wide range of benefits to people, in addition to conserving the natural capital (Grădinaru & Hersperger, 2019).

The scientific literature highlights the importance of green urban areas for the well-being of the inhabitants. Many articles in medicine and psychology emphasize the connection between green areas and the inhabitants who benefit from the services offered. Research shows that green areas positively affect human health by reducing stress, improving health and increasing recovery from certain diseases and longevity, etc. (Bertram & Rehdanz, 2015). Therefore, their role is not only to conserve nature but also to improve the well-being of the human population. Studies also show a link between population density in cities and the demand for green spaces. At a particular value of the human population density, the surface of green space per capita may change, with effects on the sustainable development and resilience of cities (Westerink et al., 2013; Wolff & Haase, 2019).

It is widely acknowledged that natural capital provides several benefits that condition human well-being, sustainable development and resilience of urban agglomerations, and that human influences affect each system and natural flow (Lowe et al., 2009; Rădulescu et al., 2016). This is why the active involvement of the social factor is required in urban management and governance. Apart from this, a conceptual change from sectoral issues such as air and water pollution or overexploitation of natural resources to a more complex approach addressing global problems such as climate change, nitrogen and carbon circuit, biodiversity and multidisciplinary and multi-stakeholder perspectives is essential. The perceptions and values of stakeholder categories differ with their interest and the social, cultural, environmental and political context, and can influence the use of natural capital components. Their involvement in the management of natural resources allows the identification of trade-offs and conflicts. The identification and analysis of stakeholder groups must be made in such a way as to avoid the marginalization of certain categories and to be fair for the representation of their various interests (Prell et al., 2009).

Raising awareness of the benefits that natural capital offers to the human population is seen as an opportunity to achieve sustainable use of natural resources. It focuses on the values that nature provides to the people and integrates social,

ecological, and economic aspects. The increased impact to which natural capital is subject and the complex interrelationships between humans and nature challenge the collaboration of specialists in social, economic, political, and natural sciences for the sustainable management of coupled natural-social-economic urban systems. In these interdisciplinary efforts, ecologists play a major role (Lowe et al., 2009).

In this context, the interest of universities is focused on identifying and developing new ways to provide civic engagement opportunities for students, faculty, and the civil society. Educational institutions transition from the theory (e.g., the impact of resource exploitation or pollution on the system's capacity to supply ecosystem services) to a more applied approach includes various forms of active civic involvement. Whether it is the encouragement of service learning activities or the development of OPENLABs, it means the engagement of a large number of undergraduate, master, or doctoral students and professors in civic actions. In this way, the universities may bring a considerable contribution in terms of identification and valuation of the benefits offered by the natural capital. Service learning provides students opportunities to develop civic engagement skills. By working with community members in similar or different fields, students develop group, organizational, and interpersonal skills. Service learning motivates students to support their own ideas concerning a particular topic (Helicke, 2014). The OPENLABs initiative contributes to the development of participatory, inclusive, and open universities in their territory, serving the interests of citizens at local, regional, and international levels by connecting civil society representative members with the university to find together solutions to major common challenges (OPEN LAB, 2021).

2. Problem Statement

Considering the complexity of issues raised by the interrelationships between nature and society and given that the social factor cannot be excluded from the study of natural capital, and from the process of identification and valuation of the benefits provided by urban natural areas, universities join and move towards this approach. The involvement of universities in the current context brings opportunities for the wise use of natural resources, sustainability and the resilience of cities, not only by contributing knowledge, but also by practical application.

In this context, in this review we aim to present a critical analysis of the literature on the provision of cultural and regulatory services by urban green areas and the involvement of human communities or stakeholders from the urban environment in their identification and evaluation. We keep a particular focus on the participation and the role that universities play in the process of identifying green urban areas and the benefits resulting from their involvement.

3. Research Questions/Aims of the Research

Acknowledging that urban natural areas not only play a role in biodiversity conservation, but they can significantly contribute to economic well-being, social

integration, and human health, this paper aims to answer, based on the analysis of the literature, the following questions:

- What are the main cultural and regulatory benefits provided by urban natural areas?
- How can they be engaged, and what is the role of students in identifying, evaluating, and raising community awareness of these benefits?
- Do universities, and especially, students benefit from their involvement in such processes?

4. Methods

To answer the research questions, we performed a critical analysis of the literature. We search the Web of Knowledge database using on the following keywords: urban natural area* OR urban green area OR green infrastructure OR urban terrestrial area AND importance OR relevance AND cultural services OR regulating services AND students OR universities AND Openlab AND service learning OR awareness raising OR civic engagement NOT supporting services NOT production services NOT habitat services.

We examined the geographical areas in which the research was realized, the journals where they were published, the type of benefits provided to the human population, and the involvement of students and universities. We based our research on generally accepted meaning of notions. According to the definition given by the Millennium Ecosystem Assessment, ecosystem services are defined as the benefits that the human population obtains from nature in the form of tangible or intangible goods (MA - Millennium Ecosystem Assessment. Ecosystems and human well-being: synthesis report., 2005). Regulating services incorporate how ecosystems control or modify biotic or abiotic parameters that define the biophysical environment around the people (Acharya & Maraseni, 2019). Cultural services are a subcategory of benefits with tangible (recreation and tourism) and intangibles values (spiritual enrichment, cognitive development) (Brown et al., 2015; Maczka et al., 2019).

Kovács et al. (2015), citing the global initiative TEEB (The Economics of Ecosystems and Biodiversity), define the term “stakeholders” as individuals, groups, or organizations that have an interest in how certain ecosystem services are used or managed (Kovács et al., 2015). Students can be considered an important category of stakeholders, but the role of their involvement should not be limited to that. We search for identifying different ways of engaging students in the process of identifying, evaluating, and raising awareness of the benefits green urban areas provide. We search for educational formats, such as service learning and OPENLABs, because they are frequently cited as offering students the chance to apply practically all the theoretical knowledge, stimulate students' active involvement and critical thinking to solve problems of today's society.

We expect that in the critical analysis stage of the literature, we will also identify how universities participate, especially by involving students in stages that include identifying or evaluating the benefits provided by natural urban areas,

awareness raising, or civic involvement. This is why we introduced the terms "students, universities, service learning, awareness raising, civic engagement" in the search string.

Our research does not include the papers published in national languages, in reports or conference papers. Still, we believe that our selection method covers most of the relevant literature available in the field.

5. Findings and Discussions

5.1 What are the Main Cultural and Regulatory Benefits Provided by Urban Natural Areas?

A total of 29 out of the 31 studies under analysis were carried out in cities and capitals from countries or regions with a high index of human development (according to the UN classification), in densely populated areas: 19 works in Europe, six in Asia, and three in cities or regions in North America. Two papers address natural areas in cities and the benefits they provide to the human population in general, without a particular case study. Most papers have been published in Sustainability (10), Urban Forestry & Urban Greening (6), and Landscape and Urban Planning (4). The Journal of Cleaner Production and Urban Ecosystems each published two papers, while other journals (e.g., Sustainable Cities and Society, Agriculture and Agricultural Science Procedia, Handbook on Green Infrastructure: Planning, Design and Implementation, Journal of Land Use, Mobility and Environment, Ecological Indicators, Materials Science and Engineering) have published one paper each.

As expected, all the analysed studies identified cultural or regulatory benefits offered by green urban areas. These include climate and temperature regulation (8 studies, 24.8%), water and precipitation regulation (8 studies, 24.8%), air quality regulation (7 studies, 21.7%), storage of chemical elements in soil or biomass in urban natural areas (4 studies, 12.4%). In all 31 papers, the benefits provided by green urban areas to the human population were identified through a series of social methods such as questionnaires, surveys, interviews, or workshops. Only 15 scientific papers (46.5%) assessed the specified ecosystem services using biophysical, social, or economic methods.

The revised literature highlights that green urban natural areas are an oasis of recreation (34.11%) for local communities and offer benefits for tourists and businesses (Terkenli et al., 2020; Terkenli et al., 2017). Among the roles of green areas, sanitation is the most important (15.5%), contributing to the health of the city's inhabitants. In the current pandemic context, the locals' perception regarding the sanitary role of urban areas has changed (Bellezoni et al., 2021; Carpentieri et al., 2020; Vaeztavakoli et al., 2018). As quarantine led to limited social and physical contact, isolation had a negative impact on physical and mental health. Because restrictions have influenced long-distance movements of the human population, the existence of urban green areas has provided the local community with several benefits for physical and mental health (Ugolini et al., 2020).

Specialized studies show that people who regularly visit green areas are more likely to report better health than those who do not (Xie et al., 2020). Grima et al. (2020) point out that a part of the human population perceives green urban areas as places of recreation in times of global chaos. In addition to the mental health, urban and peri-urban green areas benefit the cardiovascular health and lung function. However, additional research is needed to understand the effects of these areas on the COVID-19 pandemic, but we can say that the demand for ecosystem services provided by green areas for the well-being of people has been growing continuously lately (Grima et al., 2020).

5.2 How Can They Be Engaged, and What Is the Role of Students in Identifying and Evaluating Ecosystem Services and Raising Community Awareness of These Benefits?

Our review has highlighted a low concern for student involvement in actions and researches concerning the importance of urban green infrastructure. The participation of students to identify the services provided by natural urban areas was found in a single paper (Gavrilidis et al., 2020) and was based on the application of survey. The students had the role of a survey plot among other categories of identified stakeholders. However, the literature emphasizes that student engagement as a category of stakeholders and their active participation may bring value added, both in identifying the role of green urban areas and in their management (Argento et al., 2020; North American Association for Environmental Education, 2017). The academic community and students can contribute to identifying and evaluating the benefits provided by green urban areas, not only from the perspective of stakeholders (Gregory et al., 2020). Their engagement in planning and development of green urban infrastructure, through service learning activities or OPENLABs, may allow the development of skills, such as applying knowledge of ecology at the local level, developing and implementing environmental policies in urban areas, organizing time and resources to perform tasks or entrepreneurial skills (Bendt et al., 2013). Moreover, Nugroho (2017) shows that students involved in service learning activities have identified appropriate solutions to the today's society problems.

According to the literature, the implementation of the concept offers multiple pedagogical and managerial opportunities. The activities carried out through service learning are among the high-impact practices known to increase the retention of notions through the active involvement of students (Argento et al., 2020). Learning of this type has been applied in a wide variety of subjects and courses, such as writing and composition, financial education, engineering, psychology, science and mathematics, accounting, healthcare, geography, political science, public relations, and teacher training (Nugroho, 2017). Due to the links between ecological, social, and economic systems, students can understand and conceptualize the complexity of the interrelationships and the holistic nature of the socio-economic and ecological systems so that they can contribute towards

resilience and urban sustainability, realizing that their voices and actions also matter (Helicke, 2014).

Following the service-learning approach, students can be involved (e.g., through mini research projects, debates, social surveys, interdisciplinary team activities) in different activities, from identifying and assessing the benefits offered by green urban areas up to communication and dissemination of the results to stakeholders. They may apply different social, biophysical, or economic methods and find solutions for socially acknowledged needs. Cooperation with specialists and students from the same or other fields of study represents another opportunity for their professional and civic development. Similarly, OPENLABs' activities aim to encourage students' and citizens' engagement to find solutions to local problems, promote civic values such as solidarity and equality, combine academic content with practical experience for students (OPEN LAB, 2021).

5.3 Do Universities and Especially Students Benefit from their Involvement in such Processes?

No studies have been identified showing the involvement of academia, apart from Gavrilidis et al. (2020), in which students participated as stakeholders in the benefit identification stages. However, universities have been more and more interested in civic activities, understanding that they can contribute to planning and promoting sustainable and resilient cities and gain multiple benefits for students and professors. Universities have the necessary technical infrastructure and human resources to support local authorities and play an important role in urban planning and development of urban strategies. The involvement of their infrastructure, researchers and students can become an advantage in transforming urban space. However, studies that describe the impacts of the university are weakly connected to urban development (Fernández-Esquinas & Pinto, 2014).

Still, academic performance is a predictor of health, well-being, civic engagement, and socio-economic status in adulthood (Browning & Rigolon, 2019). The benefits that students can have from urban green areas are multiple. The academic performance itself is related to green urban areas. Some studies identified that students who live or teach on campuses with green areas have better scores on their exams than other students (Browning & Rigolon, 2019; Leung et al., 2019). Moreover, built environment education includes participatory processes that facilitate group action and action competence, it provides a holistic framework in which young people can explore nature, integrate multiple capabilities, and think about care of the social, cultural, and natural environment (Derr, 2018;Leung et al., 2019). Soon, service-learning will consolidate a productive teaching methodology that takes students beyond the classroom to engage with and address actual community needs (Chambers & Lavery, 2017).

Whether we are talking about students, teachers, or civil society, all categories benefit from exchanging knowledge through service-learning or OPENLABs. Through the active involvement of students in civic activities, they become more aware of the importance of nature in the urban environment for the well-being of

the human population (Argento et al., 2020). By actively participating in service learning stages or OPENLABs, a bridge is created between students, academics, practitioners, and people. Among the opportunities that students have, the application in practice of theoretical knowledge, the development of managerial, organizational, and communication skills, exchanges of experience, the possibility of affirmation are often highlighted (Helicke, 2014). The literature shows that after participating in service-learning activities, students gain greater confidence to apply theoretical notions acquired in courses, develop skills for the future job, have a higher interest in civic engagement, and even widen their general knowledge (Ellerton et al., 2015). Therefore, service-learning gives benefits to the students as future employees and future employers who will benefit from highly qualified human resources in the team. Another benefit that students receive through such learning activities is their intentions to engage in future volunteer activities. Ellerton et al. (2015) show that a third of students participating in service learning, surveyed in their paper, are interested in participating in volunteering in their community in the future. Civic engagement of students in identifying, evaluating, and raising community awareness of benefits provided by green urban areas allows students to change their perspectives and maybe their life. It opens the opportunity to explore real life situations, boost their leadership skills and apply the newly gained skills and knowledge by creating impactful projects aimed to solve acknowledged social needs.

6. Conclusions

The reviewed literature emphasizes the multifunctional role of urban natural areas, consisting of conserving species and habitats and providing benefits essential for the human population well-being. Despite the general recognition of the positive role of civic engagement for the development of highly qualified and better adapted human resources, our review revealed the limited civic engagement of universities in assessing and raising awareness on the role of the green areas for urban communities. By implementing the concept of service learning and participating in OPENLABs activities, students can translate the theoretical knowledge into practice.

An increased interest of universities to give students opportunities for civic engagement was noticed. Nevertheless, further efforts are needed if universities are to increase their impact on society. They have to adapt their curricular approach, develop and implement new educational formats, encourage collaborative (mini)research projects and activities (e.g., debates, social surveys, interdisciplinary team activities) that allow students to be actively involved, explore real-life situations, draw conclusions, learn from experience and get fresh insights about real needs of communities.

Involving students in the identification of the ecosystem services, evaluating the benefits provided by urban natural areas, and disseminating the results to people may increase the impact the universities may have at local and regional levels and boost the scientific and civic role of students. Such an approach helps identifying

practical solutions to societal problems and offers students short-term (e.g., multicultural and multidisciplinary environment, skills to apply theoretical knowledge, communication skills) and long-term (e.g., increased interest in civic activities, sense of place, better health status) advantages. In this endeavour, relevant stakeholders, governments, or other nominal parties are universities' partners that play a crucial role. Further research and a review of best practices concerning the students' engagement in different society-relevant fields may be beneficial for overpassing the limited civic engagement of universities in assessing and raising awareness on the role of the green areas for urban communities.

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Civic Universities and Their Impact on Green Infrastructure Governance in Cities: A Principles-Based Framework for Human Well-Being

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Abstract

The fast growth of the human population and its preference for living in urban areas pose a great challenge on governance to find solutions addressing urban resilience and sustainability objectives. In the transition toward resilient cities, the concept of ecosystem services offered by natural systems is considered an efficient tool of interconnection between the components of natural capital and the well-being of human communities. This paper presents and discusses the main components of a conceptual framework designed to guide the urban planning and governance response to the urban ecosystem services concept implementation. The role universities can play to benefit students, professors and societies is discussed. Mapping the natural systems and identifying and evaluating the range of services they provide by involving different socio-economic actors (including those in the field of development and implementation of environmental and economic policies, urban plans and urban development strategies) are presented as crucial preliminary steps to raise awareness, identify trade-offs and prioritize urban planning goals. The relevance of the scientific knowledge and expertise in defining actions and alternative options toward resilient cities, conditions and means of concept implementations, and accountability of urban planning are discussed. The proposed framework in this paper may help universities to frame and strengthen their strategic partnerships with the decision-makers and other relevant stakeholders in urban areas, promote renewed curricula and different forms of active civic engagement and produce human capital assets in the field of the governance of urban green infrastructure in the region.

Keywords: urban ecosystem services, universities, civic engagement, resilient cities, sustainability, blue-green infrastructure.

JEL Classification: I300.

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1. Introduction

More than half of the world's human population (55%, UN, 2019) live in urban areas. The share of the population living in cities and the number and size of cities will continue to grow (UN, 2019). A major consequence of urbanization is an increased environmental degradation with potential adverse impacts on natural habitats and biodiversity. Inadequately governed urban areas combined with unsustainable production and consumption patterns and a failure of public institutions to raise awareness and consider the benefits provided by nature in strategic documents can impair sustainability due to urban sprawl, pollution and environmental degradation (Kronenberg, 2015, Gavrilidis et al., 2017).

Historically, urbanization has been closely linked to economic growth, poverty reduction and human development (Bairoch, 1988, Grübler & Fisk, 2013). However, urban dwellers face greater exposure to environmental hazards (e.g., pollution, climate change) and health and well-being disparities (Gaigbe-Togbe, 2015, Sicard et al., 2021). Sustainable Development Goal 11 is a commitment to make cities inclusive, safe, resilient and sustainable (UN, 2015). Sustainable urbanization requires that cities preserve a healthy environment in the city and surrounding areas (UN, 2019).

McPhearson et al. (2015) reported the ecosystem services concept as a flexible concept, able to bridge science, planning and governance in the process of transition toward resilience. It may help translate complex functions and processes of ecosystems into indicators for urban planning and governance (Inostroza, 2017). Ecosystem services are outputs, conditions, or processes of natural systems that directly or indirectly, consciously or unconsciously, benefit humans or enhance social well-fare (Costanza et al., 1998, MEA, 2005). Services offered by the green-blue ecological structures of the urban areas (e.g., parks, gardens, forests, lakes, rivers, meadows, green roofs, farmed areas, street trees) are defined as urban ecosystem services (Gómez-Baggethun & Barton, 2013).

Based on the Millennium Ecosystem Assessment (MEA, 2005) and The Economics of Ecosystems and Biodiversity (TEEB, 2011), there are four categories of ecosystem services: provision, regulating, supporting and cultural services. An entire range of services is listed under these categories, including food production, regulation of river and water flows, a decrease of rainfall speed, regulation of urban temperature, noise reduction, air purification, moderation of climate extremes, pollination, seed dispersion, biodiversity and habitats, recreation, affective and cognitive development, animal watching (Gómez-Baggethun & Barton, 2013, Shrestha et al., 2021). This means that cities become places where not only first-class public and private services (e.g., education, health, cultural, information, transportation services, supply of goods etc.) are available, but also the highest quality of ecosystem services are provided by the green-blue infrastructure.

During the last decade, there is a growing interest in the research issues related to urban ecology, from the interactions between organisms and their environment to the evolutionary, social and economic consequences they have at different spatial scales (Barot et al., 2019, Shrestha et al., 2021). Additionally, we noticed a growing

interest in putting ecosystem services into the urban planning and governance practice. However, the operationalization of the ecosystem services concept still faces serious limitations and has limited influence on the urban planning and governance practice (Haase et al., 2014, Higgins et al., 2019).

Planning for the delivery of ecosystem services to urban dwellers should consider different scenarios for the future growth of urban centres and challenges raised by unavoidable social and environmental changes. In this process, the participatory approach from a cross-disciplinary and cross-sectorial perspective can play an important role. It may help understand the complexity of socio-ecological systems, raise awareness and implement the appropriate, effective and socially certified solutions. In this context, we aim to propose a general framework to guide governance toward resilient and sustainable cities. We focus on the relationship between the ecosystem services concept and governance. Universities may play a role in successive phases of the decision-making process, and the practical opportunities and challenges for their institutional development are highlighted.

2. Aims of the Research

Considering the context presented above and the challenges urban planners face dealing with the complexity and multidisciplinary of issues that need to be considered and addressed for achieving the goal of sustainable and resilient cities, this paper aims to propose a general conceptual framework to guide the decision-making process and governance in urban areas.

Given the multitude and the diversity of approaches and actors involved, we believe that a general integrated framework for the decision-making cycle, based on the participatory process, could promote the integration of ecology, society, policy and urban governance. The framework we propose is also meant to guide universities as they develop new institutional practices to exploit their innovative capacity and potential for active engagement, while directly addressing local needs.

3. Research Methods

We present the results of an interdisciplinary research, which is based on theoretical approaches developed around the concepts of ecosystem services, participatory governance and civic universities. We focus on the relationship between the ecosystem services concept and the area of governance and public policy. We grouped the issues of urban planning and governance into four clusters, which may guide the response to urban ecosystem concept implementation. To define the clusters of issues, we adapted the approach promoted by the Convention of Biological Diversity in the Report of the Open-Ended Working Group on the Post-2020 Global Biodiversity Framework on its First Meeting, Nairobi, 2019 (CBG/WG, 2020). The four clusters are: i) identify the main goals and targets for urban management, ii) define actions and alternative options, iii) identify conditions and means of implementations, iv) analyse the planning and accountability. The stakeholder involvement was considered a cross-cutting issue. The role of the civic

university and practical challenges for their institutional development are discussed in relation to the clusters mentioned above.

4. Findings

Understanding the complex interactions between humans and nature and getting aware of the benefits nature provides for human well-being is a critical preliminary condition to achieve sustainable development and resilient cities (Barot et al., 2019). The ecosystem service concept proved practical to help conceptualize complex human-environment interactions and bridge science, planning, and governance (Inostroza, 2017, McPhearson et al., 2015). However, the operationalization of this concept is deeply conditioned by its integration in the decision-making process and urban planning (Hansen et al., 2015). The scientific literature acknowledges that there is a gap between the knowledge in the field of urban ecosystem services, the expectations of citizens and the perception of urban practitioners, which still allows shrinking and deterioration of urban green infrastructure, with consequences for the development of sustainable and resilient cities.

To guide the urban planning and governance response to urban ecosystem services concept implementation, we propose an integrated framework, adapted based on the Potential Elements on Structure and Scope of the Post-2020 Global Biodiversity Framework (CBG/WG, 2020) and concepts defined in the literature (e.g., Reichert et al., 2015). An entire range of issues the urban planners face in the decision-making process for sustainable and resilient cities was grouped into clusters of issues, as presented in Figure 1. Public participation (stakeholder involvement) was considered a cross-cutting issue.

Within the proposed framework, we emphasize the role the civic universities may play in the process, not only as stakeholders but also in solving issues in the four clusters. Partnerships between relevant stakeholders (including those in the field of development and implementation of environmental, biodiversity conservation and economic policies, urban plans and development strategies) and civic universities may boost both the universities' innovation capacity and effectiveness of governance towards sustainable and resilient cities in the context of rapid changes (Figure 2).

4.1. Identify Goals and Targets for Urban Planning

To make the theory of ecosystem services accessible for practical support of the decision-making, universities may play an essential role (Figure 1). They help urban planners establish clear, measurable and easy-to-communicate-and-understand goals and targets (CBG/WG, 2020) for resilient cities in a particular social, economic and environmental context. Frequently, it is hard for urban planners to identify and prioritise the desired governance goals and outcomes for their cities due to the high complexity of the urban socio-ecological systems and interconnected nature of the context and objectives. A holistic understanding of the different pillars of sustainable development and various competencies and skills are needed (Taylor et al., 2021). Besides, as social certification and compliance with the decision are critical components for effective governance, the priorities have to be based on value-focus

thinking of an entire range of stakeholders using a multi-criteria decision analysis (Reichert et al., 2015). Among other conditions, this laborious process needs qualified human resources and multi- and trans-disciplinary approaches. The involvement of universities (students and professors with different scientific backgrounds) is an opportunity (Figure 2).

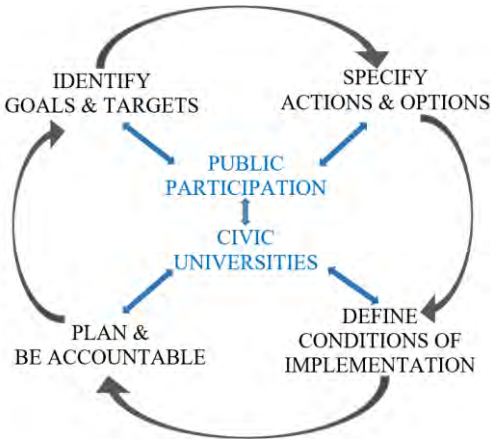


Figure 1. A conceptual framework for the operationalization of ecosystem services concept showing the clusters of issues the decision-makers face in the process of urban planning and governance. The central position of public participation underlines the cross-cutting nature of this cluster. Civic universities may play a role not only as stakeholders, but also in solving issues in the other four clusters (for details please see sections 4.1-4.5).

Source: Authors' contribution.

During the last decades, universities are placing a renewed emphasis on the importance of service and community engagement, and are more and more open to address local society challenges (Bowman et al., 2010). A continuous institutional process for active civic engagement, including initiatives as OpenLabs and Service learning (an engaged form of learning), is under development. Acknowledging their educational and societal benefits, several international programmes (e.g., Erasmus +, Horizon 2020) fostering such initiatives become active and functional.

Engaging students in identifying, assessing, and raising awareness on the ecosystem services and benefits the blue-green urban areas supply to societies offers students not only the chance to apply practically the theoretical knowledge, but also to increase their professional capacity, stimulate critical thinking, and develop skills and competencies (Balsiger 2015, Argento et al., 2020).

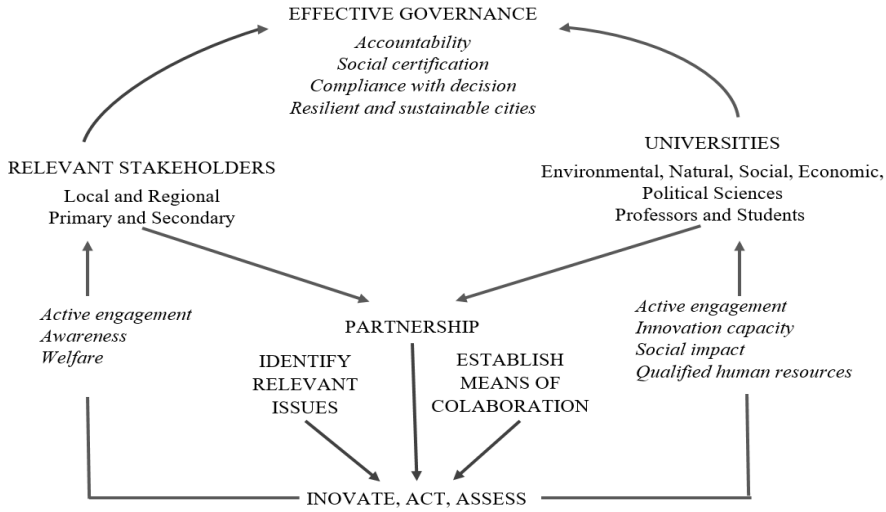


Figure 2. The role played by partnerships between relevant stakeholders and civic universities for effective governance towards sustainable and resilient cities. The added values of cooperation are marked in italics.

Source: Authors' contribution.

The level of qualification of the human resources produced by the civic universities is enhanced, allowing further support for operationalization of urban ecosystem services and targeting of policies in the context of rapid change. The innovation capacity, self-confidence, pro-social orientation and willingness to act as volunteers to solve socially relevant problems of adults who have been actively involved in engaged learning activities, are enhanced in the benefit of universities, employers, urban planners, and people well-being (Bowman et al., 2010, Fenn et al., 2021). Active engagement increases the impact the universities have on society and brings supplementary added value for urban planners. Universities may synthetize current understandings and knowledge on urban blue-green areas relative to the resilience and sustainability-related ecosystem services outcome from a cross-sectoral and cross-disciplinary perspective. This is a preliminary condition for the identification and prioritisation of the context-based development goals and targets (e.g., good air and water quality; good quality of ecological structure; good accessibility to green-blue spaces; high biodiversity; wisely used green structures, good health of inhabitants; good recreational services; deliver essential ecosystem services for inhabitants, etc.), and raising awareness and active engagement of inhabitants in the decision-making process for sustainable cities (Figure 2).

4.2. Define Actions and Alternative Options

The practice-oriented approach of the framework we propose demonstrates the social relevance of research in universities. It offers students a better understanding of the structure and function of social-ecological systems, complex interactions across scales and contexts, and nature's contribution to people. It is intended to

increase students' knowledge and abilities to identify, tackle and develop their own ideas concerning socially acknowledged needs. The multi-functionality of blue-green urban infrastructure serves as a key concept for solving resource-use conflicts, emphasizing trade-offs between different environmental, social and economic values that natural habitats networks provide in cities. The problems are approached from different perspectives. Based on stakeholders' values and preferences (what is important to stakeholders, what are the acceptable trade-offs) on one side, and the scientific facts (data and knowledge, previous experiences, best/ traditional practices) on the other side, predictions and scenarios analysis may be developed in order to capture the uncertainty of the future and raise awareness (Reichert et al., 2015). The stakeholders – universities' partnerships may assist in the identification of alternative, viable options that simultaneously provide environmental, social and economic benefits towards achieving the established goals and targets and help build resilience (Figure 1). To reveal how close the implemented actions bring urban planners to the established goals, sets of indicators, indices, attributes, or measurable variables (metrics) must be defined. They are meant to explicitly describe the relevant consequences of a decision or action implementation and measure the success or failure towards achieving shared goals. The level of noise or fine dust particles in the air, the number of square meters of green spaces per inhabitant, the minutes spent to the nearest green space, species richness, charismatic species, the number of human respiratory and mental disorders, the hours per week spent in green areas, the number of jobs offered by parks are only a few examples of such indices.

4.3. Conditions of Implementation

The success of achieving the established goals is conditioned by appropriate institutional infrastructure and capacity development at institutional and systemic levels (CBD/WG, 2020). Several issues are clustered under this header. They depend on the particular social, environmental and political context and, among others, may include: resource mobilization, financial mechanisms, trained actors (including managers and decision-makers), data mobilization and access to data, knowledge management, improved knowledge (facts, predictions, scenarios) and capacity to process and utilize the existing data and knowledge, technical and scientific cooperation, technology transfer, contextualization, communication, awareness-raising, social certification of decisions (CBD/WG 2020, Reichert et al., 2015). All of these raise practical challenges for universities and their curricula that have to address the skills and competencies needed for professionals in the field of sustainable urban planning and to identify effective pedagogic practices that could help educate future professionals (Taylor et al., 2021). They call for long-life training programmes and deeper cooperation across disciplines. As the management targets the coupled human-natural systems, scientists, students and professors from various environmental, natural, and human sciences are an integral part of this approach. Equally, those from the field of economic and political sciences are directly involved in solving issues related to economic valuation of ecosystem services, cost-benefit analyses, planning and accountability for sustainable development of resilient cities

(see Figure 2). Integrating sustainability in higher education programmes, and collaboration of professionals from different fields based on holistic, integrated approach are needed for understanding various aspects of interactions and functioning of coupled nature-social urban systems, simulating co-production of sustainability knowledge and finding novel and constructive ways of solving complex problems (Balsiger, 2015, Argento et al., 2020, Taylor et al., 2021).

4.4. Planning and Accountability

The development of coherent, evidence-based policies that link territorial development to innovation and higher education is essential to operationalize the goals and make the achievement of goals measurable. The progress, the best management actions, the gaps and barriers have to be identified and tackled before the reiteration of any decision cycle. Monitoring and reporting play a crucial role in achieving flexible and effective governance (CBG/WG, 2020). In the process of policies, plans and strategies assessment, multi-stakeholder dialogues are central. However, addressing such challenges requires transforming the way a range of responsible sectors work together towards shared goals, understanding how sectors collaborate and finding solutions for more efficient, effective and equitable cooperation acknowledging similarities and differences across contexts. Research in this field remains critical (Hinton et al., 2021).

4.5. Public Participation

The four clusters of issues presented in Figure 1 and discussed above are closely interlinked. The participation of different stakeholders in implementing the ecosystem services concept in urban planning and governance could act as an overarching principle that applies to the entirety of the framework (CBG/WG, 2020). A wide range of stakeholder categories, from local communities up to regional and national authorities, civil society and the private sector, have a role in the general framework. These actors may take on-the-ground action, which could greatly enhance implementation if better recognized, encouraged, and supported. Moreover, the literature revealed both the short and long-term impact of university volunteering and participating in engaged forms of learning (e.g., service-learning). A generally positive relationship between students' civic engagement and mental health, when mediated by service self-efficacy, was revealed (Fenn et al., 2021, Shrestha et al., 2021). Indirect effects on several forms of well-being during their adulthood include personal growth, purpose in life, environmental mastery, and life satisfaction (Bowman et al., 2010).

5. Conclusions

This paper is based on a theoretical approach. It highlights that to achieve the overall goal of resilient and sustainable cities, governance has to be grounded on an ecosystemic, holistic and integrated conceptual framework, acknowledging the benefits of nature to humans, collective expertise, and different actors' role from a cross-sectoral and cross-disciplinary perspective. Deeper cooperation across relevant

stakeholders and disciplines and the development of collaboratively designed curricula at the intersection of innovation and education remain challenging goals. Enhanced service and community engagement allow new outlooks on the universities' relevance for society. More studies are needed to frame the collaborative design and improve outcomes.

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Internationalisation of Higher Education – Overview of Recent Developments

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Abstract

The present paper aims at identifying current trends in the internationalisation of higher education. We begin by acknowledging the need for continuously updating the definition of the phenomenon and the key dimensions it implies, so as to reflect developments across the globe. We refer to concepts such as "internationalisation abroad", "internationalisation at home" and "comprehensive internationalisation". Next, we provide details on recent trends in the field in Europe (the European Union, including Member State Romania), North America (the USA) and Asia (Japan and the ASEAN - Member States).

Keywords: internationalisation of higher education, in-house internationalisation, internationalisation abroad, comprehensive internationalisation, virtual mobility.

JEL Classification: A22, A23, I23, Y20.

1. Introduction

The present paper aims at identifying the current trends in the internationalisation of higher education, by reviewing key literature on the phenomenon. We are concerned with defining the term, identifying its key dimensions, and presenting recent trends in higher education institutions from three continents (Europe, North America and Asia).

2. Problem Statement

In this section, we examine the way in which the definition of "internationalisation of higher education" has been refined across more than two decades, and point to the fact that the phenomenon has come to refer to more than just study and research mobility overseas (i.e., the so-called "internationalisation

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abroad"). In fact, nowadays, internationalisation is seen as a "comprehensive" phenomenon, with implications for the entire architecture of participating universities (beyond academics, students and managerial staff, or curriculum and research design).

2.1. The Challenge of Defining Internationalization of Higher Education

Settling on a definition of the internationalisation of higher education has proven to be a rather difficult task, given the complexity and the dynamics of the higher education institutions themselves, on the one hand, and the existence of a diverse range of stakeholders involved in the process, on the other hand. The most widely-used definition of internationalisation of higher education belongs to Jane Knight, who, in 1994, defined it as "a range of activities, policies and services that integrate an international and intercultural dimension into the teaching, research and service function of the institution" (Knight, 1994, p. 1). While researchers agree that internationalisation is a dynamic process and not a fixed outcome, Knight's initial definition has been criticized because of its viewing of the matter as the very goal of the whole process, with no possibilities of further development, while in many countries internationalisation has been considered, especially in recent years, a means to improve the quality of education and research and, in a broader view, the general social and economic conditions. Almost a decade later, in 2003, the terms of the definition slightly change, internationalisation of higher education being defined by the same researcher as "the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of post-secondary education" (Knight, 2003, p. 2). Knight provides a detailed justification for the choice of the key terms in her definition, starting with the fact that internationalisation is understood as "an ongoing and continuing effort" - process, then explaining that the triad *international, intercultural, global* refers to the breadth and depth of internationalisation; the concept of *integration* is strongly related to the centrality of the international and intercultural dimensions of the process, while the other triad in the definition – *purpose, functions, delivery* – refers to "the overall role and objectives that post-secondary education has for a country/region" (Knight, 2004, p. 11-12).

Another decade later, in a comprehensive study on the internationalisation of higher education requested by the European Parliament's Committee on Culture and Education, the authors further refine the definition with the following additions: "the *intentional* process of integrating an international, intercultural or global dimension into the purpose, functions *and* delivery of post-secondary education, *in order to enhance the quality of education and research for all students and staff, and to make a meaningful contribution to society*" (de Wit et al., 2015, p. 29). The subtle terminological changes and additions in the definition mirror the changes that took place both in the nature of the higher education institutions, as well as in societies, in general. Thus, internationalisation is regarded as a threefold process, not limited to its international – understood as "multinational" – dimension, but also including the recognition of cultural diversity and the distinction between internationalisation

and globalization. Moreover, "internationalisation" must not be mistaken for "internationalism", the latter being defined by Jones as "common sense notions of international community, international cooperation, international community of interests, and international dimensions of the common good" (Jones, 2000, p. 31). Internationalism has a rather idealistic side, closely connected to international cooperation, progress and human rights.

The fact that the process of internationalisation is an intentional one means that internationalisation is now regarded rather as a conscious and planned strategy rather than an inner characteristic of academic institutions. De Wit et al. also focus on the necessity that the internationalisation of higher education must be open to a larger category of beneficiaries, not only to the elitist few, as it used to be in its beginnings. Furthermore, the idea of internationalisation as a means of enhancing quality, with the broader goal of creating benefits for the society, is also emphasized in the new definition. The transfer of knowledge that takes place in this process is put to use for a larger range of the stakeholders, which go beyond the academic and research environment, including members of the political, economic or social and cultural fields.

2.2. Dimensions of Internationalisation

Beyond the conceptual and terminological discussions regarding the internationalisation of higher education, there are two basic dimensions on which the process is built: *internationalisation abroad* and *internationalisation at home* (Knight, 2004, pp. 21-22). For a long time, the idea of internationalisation was closely connected to what is now called *internationalisation abroad*, understood as "all forms of education across borders: mobility of people, projects, programmes and providers" (de Wit et al., 2015, p. 45). Student mobility, in particular, has been regarded as one of the key elements of internationalisation abroad, being often included in institutional evaluations, as an indicator of the degree of internationalisation of a university. In Europe, student mobility often translates as credit mobility, which, together with staff mobility, degree mobility and cross-border delivery (or transnational education) constitutes the bases of internationalisation abroad. On the other hand, *internationalisation at home* refers to "the purposeful integration of international and intercultural dimensions into the formal and informal curriculum for all students within domestic learning environments" (Beelen and Jones, 2015, p. 69). The restrictions and limitations that are sometimes associated with the various types of mobility – credit recognition, inequalities between countries, access for disabled students (de Wit et al., 2015) – can be diminished or eliminated by addressing all students and all types of education "at home". Internationalisation at home comprises the internationalisation of the curriculum and the development of a global citizenship. The internationalisation of curriculum, especially if we refer to the formal curriculum, implies the fact that the institution should have a clearly planned strategy, which will lead to the development of international and intercultural skills. Sporadic curricular elements focusing on

international aspects or the mere use of English in teaching are not regarded as dimensions of internationalisation at home.

A genuine internationalisation of the curriculum as part of an institutional internationalisation strategy is strongly related to what has come to be called "comprehensive internationalisation", a recent concept coming from the United States, which builds on and expands Knight's revised definition:

> Comprehensive internationalisation is a commitment, confirmed through action, to infuse international and comparative perspectives throughout the teaching, research, and service missions of higher education. It shapes institutional ethos and values and touches the entire higher education enterprise. It is essential that it be embraced by institutional leadership, governance, faculty, students, and all academic service and support units. It is an institutional imperative, not just a desirable possibility. (Hudzik, 2011, p. 6)

The key idea behind comprehensive internationalisation is the recognition of a variety of models and approaches, allowing each institution to choose its own strategy, without a common model or objectives, which might, however, be difficult to implement in the European Union, where the very beginning of the internationalisation process is linked to a unitary framework governed by common rules.

Approaches to internationalisation, be it abroad or at home, range from cooperation to competition between institutions, countries and regions. Both directions have positive effects on societies, and while they both function as engines of the internationalisation process, nowadays it is mainly competition that seems to have gained prominence. The focus on competition is also closely connected to the changing role of the university, from a cultural, knowledge-based establishment to an institution that prepares individuals for an international labour market.

3. Research Questions/Aims of the Research

The purpose of this article is to identify recent trends in the internationalisation of higher education, across several continents: Europe, Asia and North America.

4. Research Methods

To identify the said trends, we review key recent literature on the internationalisation of higher education, as perceived in the European Union (including the EU-Member State Romania), Asia (Japan and the ASEAN-Member States), as well as North America (the USA). We focus mainly on qualitative findings of previous research and we provide a synthesis, doubled by an analysis of said findings.

5. Findings

5.1. The Current Situation

While the internationalisation of higher education might be a rather recent issue in terms of its conceptualization and scientific analysis, the international dimension of education has always been one of the defining aspects of the educational process in the institutions that have provided education and/or training in one form or another. From the mere transfer of knowledge – mostly concerning the military art or political or administrative matters – between different geographical and cultural areas in ancient times, to learning foreign languages and studying foreign cultures or to the present-day stage of incorporating different, sometimes divergent values into a country's educational system, education has always had an international side. Starting with the Middle Ages and the appearance of the first universities, (Western) Europe has strengthened its position as a space providing academic education. With the foundation of Harvard University in the 17th century, The United States of America also emerges as a powerful player in the field of education. On the other side of the world, Asia – mainly China and Japan – also played an important role in creating institutions of education, even if the first universities understood as academic institutions and not only as establishments of instruction and education (such as the religious centres, for example) appeared here only in the 19th century. The approaches to internationalisation may have varied throughout time, but there is no doubt that Europe, the United States and Japan, through their universities, are the three main actors when it comes to the process of internationalisation.

The United States of America and its higher education system are generally regarded as late-comers in the process, partly due to a rather isolationist tendency which "paralleled a historical inward orientation of the American psyche overall" (Hudzik, 2011, p. 13). Even now, the USA focuses less on internationalisation abroad (the student mobility dimension), with "just over 1% of all US students enrolled in US higher education at any academic level" being interested in studying abroad (Cantu, 2013, p. 7). Internationalisation at home, through various strategies, is visibly preferred in the American universities.

Japan, with its highly centralized educational system, has generally followed the Anglo-Saxon model, promoting mobility abroad, trying to increase the number of international students and developing English-taught programmes at home. Starting with 1980, the Japanese government initiated internationalisation policies, but the language barrier has been, however, a rather difficult obstacle to overcome, and while inbound international students have reached numbers similar to those of developed European countries such as Germany or France, outbound students are still few, if compared to, for example, European countries. Furthermore, in Asia, starting from and building on the experience and model of Europe, several countries in ASEAN (The Association of Southeast Asian Nations) are laying the foundations of regional policies towards internationalisation. A study conducted by the British Council in 2018 on internationalisation policies in Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam finds

that ASEAN countries focus on openness and mobility, mainly at an intra-regional level. At the same time, they are trying to develop high levels of "at home" transnational education and to develop their higher education systems through international transnational education partnerships (Ilieva and Peak, 2018).

Europe is, no doubt, the leading player in the internationalisation field. Building on the extensive multicultural, multinational and multilingual European tradition, over the past three decades, various programmes for research and education have been developed, Erasmus being probably the best known and the one with the most visible impact on the internationalisation of higher education. Established in 1987 and rebranded Erasmus + in 2014, it created a framework for transnational collaboration between institutions and it was reinforced by the signing of the Bologna Declaration in 1999. The role of the Erasmus programme in the internationalisation of higher education has been reiterated continuously, as it has a great impact on the formation of genuine international citizens whose desire for further development in an international environment continues even after the end of the mobility:

> the young people […] express a desire to know more, and discover more places in which they can do so [undergo a transformative experience], demonstrating how a kind of personalized internationalisation is achieved through successive mobility exercises, amounting to a new kind of migration within European space. (Samuk et al., 2021, p. 180)

To sum up the current situation by taking a contrastive look at the three major players in process of the internationalisation of higher education – Europe, the USA, Japan – the current situation of internationalisation appears to have different points of focus in the three regions presented above. Japan largely emphasizes internationalisation at home and its preferred partners for internationalisation abroad are mainly countries in Asia and in the English-speaking world. In the case of the USA, the tendency is to regard internationalisation as a comprehensive process, the borderline between "abroad" and "at home" becoming blurry, while the importance of institutional decision on the internationalization strategy is highlighted. Europe (the EU) remains the area with the most complex system of internationalization strategies, combining common directions for all member states with state-specific programmes and procedures.

5.2. Trends in the Field

Given the students' drive for continuous development, internationalisation abroad will continue to grow, especially in its student mobility dimension, but an increasing emphasis is now placed on internationalisation at home, both in terms of the internationalisation of curriculum and of the learning outcomes. Digitalisation and virtual learning were already topics of interest in education before the current COVID-19 pandemic, but during the past year, under the necessity of continuing all forms of education in an environment that does not require the physical presence on

campus, online learning has largely shown its benefits related to internationalisation. It is a means of benefiting from an international mobility open to all students, regardless of the limitations that might arise from financial, administrative, even political restrictions, and we can already talk about the emergence of a new type of mobility – the virtual mobility.

There are already online educational institutions that offer courses that can be taken in order to obtain transferable credits. An example is Future Learn, a social learning platform owned by the Open University, which has been offering massive open online courses (MOOC) from prestigious higher education institutions all over the world since 2016. Such platforms are likely to increase in number in the future and thus, the shift from cooperation to competition in the internationalisation of higher education might need to be regarded not only from the traditional perspective of the competition between the "big players" in the field of internationalisation – Europe, USA, Japan – but also from the perspective of a possible competition between "brick-and-mortar" universities and online educational platforms.

The shift from cooperation towards competition, regardless of its nature, is closely related to a change in the rationales of internationalisation, as nowadays there is a visible shift from the original academic, social or political rationales towards economic ones. The institution of the university itself has come to a point where it needs to redefine its role and purpose and the question currently under debate is whether it is losing its social, cultural and intellectual objectives, becoming a producer of commodities for an international market (Naidoo and Jamieson, 2005). Even at a conceptual and terminological level, universities are now included in the category of "higher education institutions", together with other institutions of education such as institutes, academies, higher studies schools, etc., their truly academic nature appearing to be fading away. The economic rationales have obviously gained prominence over the political, social, cultural or academic ones. If we refer strictly to the academic rationales, the ones that are dominant at present seem to be more concerned with strategic alliances and partnerships or status and position in international rankings rather than with the original purpose of academic institutions, that of pure cultural accumulation and transmission of knowledge. While academic values will always be at the core of any academic establishment, the focus now seems to be on the elements that were once marginal in the structure of said institutions.

Closely related to the shift towards competition is the necessity of creating strategies, at regional, national or institutional level and "over the past decades, the emphasis in Europe has moved from the national level to the institutional level on the one hand and the European Union on the other" (de Wit et al., 2015, p. 35). In Romania, the internationalisation of higher education was included as one of the strategic goals in the 2014-2020 overall higher education strategy, which is a pre-condition for accessing EU funds (de Wit et al., 2015, p. 158). The internationalisation of higher education in Romania has been highly influenced by the European Union's programmes and policies, but there are also some national characteristics and trends which differ from those of other European countries. The

national policies for internationalisation focus on mobility and engaging the Romanian Diaspora (de Wit et al., 2015, p. 160), internationalisation at home being less visible in Romanian higher education institutions. Even so, in 2015, Romanian students were still among the least mobile in Europe, mainly because of financial reasons and issues arising from the recognition of study programmes (ANPCDEF, 2015, p. 95). As regards internationalisation at home, small steps are taken, but the process is still being considered "mainly a bottom-up initiative as a result of the academics" own interest and involvement in internationalisation activities", as shown in a study conducted by Carciu & Mureșan in 2016 at the Bucharest University of Economic Studies. Another finding of the same study is that "whether the partnership begins "bottom-up" or "top-down", it was felt that some degree of institutional leadership and management was necessary" (Carciu and Mureșan, 2020, p. 219).

Along these lines, Romanian universities have undertaken steps towards increasing the internationalisation of higher education institutions from Romania. For example, the member universities of the "Universitaria" Consortium established in 2009 (i.e., the University of Bucharest, the "Babeș – Bolyai" University in Cluj-Napoca, the "Alexandru Ioan Cuza" University in Iași, the West University in Timișoara, and the Bucharest University of Economic Studies) have constantly striven to enhance their individual and joint international visibility in various ways: developing study programmes in foreign languages, student and (academic and research) staff exchange, increasing cooperation agreements with universities and research institutes from all over the world, increasing their access to and participation in state-of-the art scientific research jointly conducted with such institutions, undergoing external evaluation so as to be included in leading international university rankings, organizing a large variety of on campus and off campus multilingual and multicultural activities to bring together both Romanian and foreign students, academics, researchers, etc. (cf. Consorțiul Universitaria/ Universitaria Consortium, 2016-2020).

6. Conclusions

The aim of the present article has been to present recent trends in the internationalisation of higher education, across several continents: Europe, Asia and North America. We have shown that, although not a new phenomenon (as an international dimension of education has been present from the very establishment of universities across the globe in the Middle Ages in Europe, the Early Modern Age in the USA, and the Modern Age in Asia), internationalisation of higher education has received increasing attention starting the late 20th century, when it was first defined by Knight (1994). Since then, the definition and description of the phenomenon has been constantly refined, to reflect new developments. Nowadays, universities across the globe are implementing a "comprehensive" view of internationalisation – one that has become an imperative rather than an option in today's globalized world. Function of regional characteristics, internationalisation of higher education concentrates on aspects such as internationalisation abroad (in

the USA), internationalisation at home or in the vicinity (in Asia), internationalisation abroad and internationalisation at home (in the European Union). Whichever the trend/region, internationalisation of higher education can only be attained by constant improvement of: study programmes (so as to encourage enhanced student and academic staff exchange), research endeavours (so as to facilitate cooperation between research staff and institutions for exchange of ideas and best practices and advancement of knowledge), and institutional organization (so as to involve administrative units to support all those involved in the process).

The findings of this study must be seen in light of some limitations. Being a rather theoretical study largely based on literature review on the topic, the facts presented in the paper have a high level of generality. It remains for future research to provide examples of best practices in the field from universities across the globe.

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COVID-19 Pandemic and Future Business Prospects: A Conceptual Study

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Abstract

Unfortunately, the COVID-19 pandemic has disrupted the business environment worldwide mainly through the shift from physical to virtual (e-business) interaction. Yet, innovative ideas keep emerging out of this calamity. In this respect, this article aims to provide a rudimentary framework to understand business prospects that could arise through recognizing the changes in the business environment as a result of the pandemic. In doing so, we reviewed and conceptualized scanty works that are connected to the current research theme together with few interviews from business owners. We found that the COVID-19 pandemic has not only done harm to the business environment, but it led to a swift positive transformation (future business prospects) to both companies and customers. Major business prospects identified in the research study include - (1) Technology adoption and innovation, (2) Innovative marketing, and (3) Improved hygienic conditions in the business environment. The study, therefore, encourages business owners and practitioners to intensify the integration of technology to revamp their service delivery strategies. In other words, firms are recommended to engage in technological investment for their continuity and growth in the medium to long term.

Keywords: COVID-19, Pandemic, Future Business, Prospects, Technology adoption, Innovation.

JEL Classification: M1, M2, O30, O31, O33.

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1. Introduction

The COVID-19 pandemic, also called the coronavirus pandemic, is an ongoing pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The Global World Health Organization (WHO) declared the outbreak a Public Health Emergency of International Concern on 30 January, and a pandemic on 11 March (Adzovie et al., 2020). Though it is not possible to prevent dangerous viruses from emerging, however, the presence of the novel COVID-19 disease, in no doubt, harms the business environment severely. The sudden outburst of the COVID-19 outbreak is also a fast reminder that pandemics (like other rarely occurring calamities), have ensued within the past and can still happen. The outbreak of COVID-19 pandemic disease has not only impacted businesses negatively, but has become an avenue for businesses to adopts certain changes in their operational activities to fully meet the demands of their customers or clients. Globally, COVID-19 has altered the way business activities should be done, therefore, introducing new systems or technological approaches of how things should be done. Ye & Kulathunga (2019), emphasized that businesses are noted for their immense contributions through various economic activities, notably job creation, reduction in poverty, and innovation. Crammond et al. (2018), point out that the existence of information communication technology (ICT) paves way for businesses to develop new opportunities and technological advancements in carrying out business activities through electronic platforms. Besides, the channel of conveying information or business transactions to individuals and prospective customers has changed in the COVID-19 era. Given these changes, we opine that the future of doing businesses should be linked to the establishment of computer network technology. To this end, many business owners have accepted technology in doing business activities.

The shift in paradigm from using traditional methods of business dealings with customers had changed over some time when COVID-19 broke out. The COVID-19 pandemic has become imperative as physical contacts have been significantly restricted among persons, with consequences for firms, which increasingly adopted online platforms to conduct businesses with the consumer (Wang, et al 2021; Amoah, & Jibril, 2020). Moreover, Daniel et al. (2017), identified that improving business activities in business environments is currently addressed by the advancement in technology (ICT). This study has been necessitated by the actual disputable fact that COVID-19 is novel and has caused many businesses to apprehend their systems of business transactions. According to UNESCO (2015), it was revealed that adopting technology in the 21st century cannot be overlooked. Since most businesses have adopted new ways of conducting business dealings as a result of the COVID-19 pandemic, our main objective is to examine the prospects of future businesses regarding various solutions that have been introduced by business owners or entrepreneurs in the COVID-19 era. The study also contains a proposed conceptual framework that depicts a clear understanding of the research. Other sections of the paper are: the research questions and objectives, methodology, study implications, conclusion, and limitation.

2. Literature Review/ Problematization

Many researchers have recently investigated technology adoption and innovation after the COVID-19 pandemonium affected the global world. The coming into existence of the Corona Virus Disease (COVID-19) pandemic has brought about both opportunities and threats to businesses. Also, Mason et al. (2021), researched on Social media marketing gains importance after COVID-19, and firmly revealed that consumers' behavior has changed after the declaration of Corona Virus Disease (COVID-19) pandemic in the global world. It was discovered that numerous safety protocols for attacking the pandemic were found to be appropriate, and therefore called for modern technologies to be adopted, which would be useful to both consumers and business owners/managers. Such technologies must help consumers to identify product needs, shopping to acquire alternatives, comparing product information, and finally evaluate product benefits and solve customers' problems. Moreover, Knowles et al. (2020), in their recent research "*Growth Opportunities for Brands During the COVID-19 Crisis"* revealed that more opportunities are in abundance for businesses during these difficult times of the COVID-19 era. So far as consumers are in fear of physical contact with business owners, sales representatives among others, technology adoption, and innovation has become the order of the day (Bolisani et al., 2020). Hence, consumers are calling on businesses to fully adopt technologies and improve their online platforms for shopping for products and services (Fonseca and Azevedo, 2020).

Consequently, Manson et al. (2021) opined that innovative marketing has come to stay since the outbreak of the Corona Virus Disease (COVID-19) pandemic in 2019. Innovation marketing creates opportunities for businesses in idea conception and modification of products and services to the satisfaction of consumers, and helps businesses to meet their targets and objectives. Therefore, customers' interests in the COVID-19 era are always met through regular innovation marketing like communication online, providing quick responses to customers' challenges within the shortest possible time. Innovation marketing has created marketing intelligence for businesses. As a result of the COVID-19 pandemic challenges, there are equal opportunities for entrepreneurs by offering new business ideas for innovations, growth, and developing new products and services for the satisfaction of their customers (Juergensen et al., 2020). According to Geref (2020); Giotopoulos et al. (2017), empirical findings show that business owners/managers can perceive opportunities in difficult times of adversity and exploit unfilled gaps by consistently developing products or services to meet customers' market needs. For example, innovative marketing has informed business owners/managers to intensify their information communication technology (ICT) to respond to anticipated demands of customers before the COVID-19 pandemic (Priyono et al., 2020).

Also, Omar et al. (2020), in their recent research: the impact of COVID-19 Movement Control Order on SMEs' businesses and survival strategies revealed that businesses should maintain Hygienic Conditions in a business environment. COVID-19 is currently jeopardizing the activities of most businesses likewise the well-being of peoples (Sneader & Singhal, 2020). Such restrictions have reduced the

number of customers' visitation to business offices. The pandemic has not only affected the global health systems but also impeded the structure of business activities order. The impact of COVID-19 on business activities is very stringent. Since most governments have enacted policies to curb the deadly disease, business owners/managers must follow them both in long or short-term periods (Ali et al., 2021). This has brought about changes in business strategies, operational activities as well as measures to ensure improved hygienic conditions in a business environment at all times. This has necessitated business owners/managers to regularly maintain a conducive business environment, such as social distancing, sanitizing the business environment regularly to safeguard the protection of both employees and customers at all times (Craven et al., 2020).

Despite the continuous increase in COVID-19 across the globe, businesses are currently looking for other alternatives to make sure that their activities flow consistently. The study would also examine the antecedents of future businesses within the parameters of a COVID-19 pandemic from both academic and industry players' points of view. To fully achieve the goal of the present study, business owners/managerial staff would be interviewed to throw more light on future business dealings in the current state of this pandemic. More importantly, the paper considers the scanty literature so far available since the inception of the pandemic, coupled with an interview of business managers in the SMEs segment. By implication, the study provides insights and recommendations to both practitioners and scholars about profitable innovative ideas that could endure and sustain the growing changing environment on the business and marketing front.

3. Research Questions/Aims of the Research

3.1 Research Questions

1. What are the opportunities that COVID-19 has brought to business owners or managers?
2. What are the possible ways that business owners/managers would adapt to survive in this pandemic era of conducting business dealings or activities?

3.2 Research Objectives

1. To identify the opportunities that COVID-19 has brought to business owners or managers.
2. To identify the possible ways that business owners/managers would adapt to survive in this pandemic era of conducting business dealings or activities.

4. Methodology

Since the present study is wholly a qualitative inquiry, the researchers adopted the interview research technique to achieve the overall aim of the study (Osakwe, 2016). An interview is a designed procedure used to obtain information from an individual or persons through an oral inquiry. Since the interview has various forms like face-to-face, phonic or telephone, panel, competency test, the researchers

adopted phonic/telephone type of interview to accomplish the objective of the present study. The phonic or Telephone interview approach has been used by other researchers and scholars like Dado et al., (2021); Kiram, et al (2021); Amoah & Jibril (2020), to execute qualitative research in recent times. The use of the interview approach was chosen since the researchers want first-hand information from key persons, preferably managers or business owners, who have more information relating to the research topic. Besides, a secondary literature review that correlates with the study topic was also adopted. In all**,** 15 managers or business owners were selected using the non-random sampling technique (particularly, convenience sampling technique) from the Western Regional capital of Ghana. Out of the 15 managers selected, 12 managers or business owners accepted to partake in the exercise. All the selected participants/respondents were drawn from the hospitality industry, which includes hotels, resorts, and entertainment centres of the economy. The phonic/telephone interview approach was chosen due to the nature of the fast-spreading of the Corona Virus pandemic. Although this study used phone and video interviews, a semi-structured questionnaire was used as a guide for accurate data collection from all respondents.

The questionnaires and phone interviews constitute mixed methods used to solicit opinion from study respondents in a given period of time (Longhurst, 2003). This questionnaire used for respondents consists of open and closed-ended questions to interview managers and experts. This was used to get adequate information on challenges faced by the business sector during the COVID-19 pandemic. Other essential information relating to policies that affected the ease of conducting businesses were captured in the semi-structured questionnaire. A vital question such as ‘‘how has the pandemic affected organisational policies and cost of conducting business operations’’? This was used to get a clearer understanding of how the pandemic has affected business operation. The interview was conducted between February and March 2021. On average, the interview lasted between 25 to 30 minutes for each respondent/participant and took the form of a video call. From the information received, a conceptual framework has been proposed, which partially achieves the objective of the study, as shown in figure 1. It can be said that the interview approach offered enough and grounded evidence that there are equal future business prospects and opportunities for SMEs in the hospitality sector despite the deadly Corona Virus pandemic (COVID-19).

5. Discussions

The evidence gathered from the interview shows that there is a positive correlation between COVID-19 and Technology adoption and Innovation. It was revealed that since the outbreak of the deadly virus, SMEs, mostly in the hospitality sector such as hotels, resorts, and entertainment centres, have consistently adopted the use of modern technology to satisfy the needs of their customers and have shaped their innovation skills/drive. Thus, technology has become the order of the day for most business owners and managers since customers have resulted in such changes to reduce the risk of being infected by the Coronavirus. The findings of the present

study are therefore supported by that of (Kiram et al., 2021), where it was established that COVID-19 has impacted SMEs' performance drastically where some shops were even closed down, but resorting to technology and innovation has helped to recover from such calamities. Also, on this point, the researchers firmly believe that SMEs are required to adopt changes in their operational systems to continue to operate and survive in both short and long-term periods. Such innovative technology would also help SMEs in the study area to devise current strategies and ideas to adjust to the disruption caused by COVID-19.

Considering innovative marketing as a prospect for SMEs in future business dealings, the interview results revealed that the hospitality sector is hit by the Coronavirus pandemic. However, the development of innovative marketing by managers and business owners has impacted the business positively. Given this, there is a positive relationship between COVID-19 Pandemic and Innovative Marketing. Innovative marketing is clearly defined as a set of current processes and activities that allows market and communication of new products and services to a certain target/group of people/customers with the sole aim of satisfying their demands or needs. On this basis, the findings are consistent with (Mason et al., 2021). In the said article, the use of the traditional medium of marketing and communication has become obsolete and therefore needs a replacer in these critical times. Hence, adopting innovative marketing provides a clear roadmap for SMEs in the hospitality sector to receive and obtain feedback through efficient communication mechanisms. Therefore, the researchers' further state that innovative marketing would offer managers/business owners the capacity and maximum support to consistently meet their respective objectives and targets. Moreover, over-reliance on the old form of innovative marketing would make the business trail, as most businesses and customers of the world are evolving around electronic businesses.

Lastly, after the interview, managers and business owners revealed that COVID-19 has brought about an increase in improved hygiene conditions in the business environment. Although SMEs attached more seriousness to this element, the full force of COVID-19 has changed the system. Hence, it is established that there is a positive correlation between COVID-19 Pandemic and improved hygiene conditions in the business environment. This has been confirmed by Craven et al. (2020), showing that businesses are regularly adhering to a business environment conducive to better hygiene and sanitation conditions This is because customers are critical about their life today and therefore always want to visit places where hygiene conditions are treated with seriousness by providing protective accoutrements at vantage points to reduce the risk of infections. Based on this, the researchers wish to state empathically that most businesses around the globe and the SMEs in the hospitality sector of Ghana specifically, those in the Western Region are much enthused to make sure that their environment is in good condition for business transactions and dealings. This has necessitated business owners/managers to regularly maintain an adequate business environment such as social distancing,

sanitizing the business environment regularly to safeguard the protection of both employees and customers at all times.

5.1 Summary of Interview Findings for a Proposed Research Model

From the empirical inquiry (interview), it was discovered that, the presence of COVID-19 pandemic has triggered firms to engage in innovative activities, such as marketing, improving hygienic condition in the business environment, adopting technology that can drive a move to a low carbon emission economy in the adaptation to climate change. This mode of conducting businesses would help management in sustaining the firm's operation during the COVID-19 pandemic. The authors then conceptualise and propose a research model that could be tested quantitatively in a future study (see Figure 1).

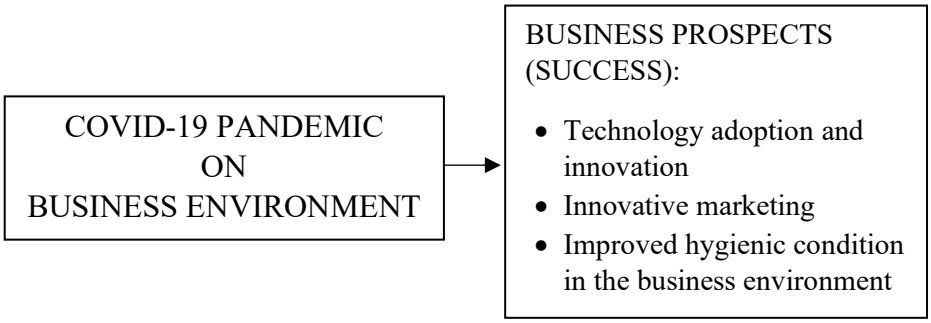


Figure 1. Proposed Research Model
Source: Authors' own development.

5.2 Implications for Theory, Practice, and Concluding Thoughts

This article has proposed a conceptual framework that would contribute to the general understanding of the study area and also provide more insight for the academia on how activities or business operations of SMEs in the hospitality sector should be conducted in the COVID-19 era. On top of that, the research has also provided a clear roadmap of the relationship between the antecedent's variable - COVID-19 Pandemic and the consequence - (Technology adoption and innovation, innovation marketing, and improved hygienic condition in the business environment).

To practitioners and industry players, the study would offer managers and business owners to devise strategies that will help them to succeed or survive during these critical times. Also, practitioners would take inspiration from the study to ensure that all the possible elements of business sustainability can be carried out effectively and efficiently. Similarly, the study would also help SMEs to create a work environment that could foster smooth running of business activities to attract both new and existing customers.

The present study was conducted with a focus on the COVID-19 Pandemic and on how business managers or owners would respond quickly to changes in the business activities. Based on the results obtained, COVID-19 has imposed measures on SMEs' activities or operations. The study largely focused on COVID-19 future business prospects and the way forward. The results hence revealed that SMEs in the hospitality sector could still function irrespective of the impact of the COVID-19 Pandemic. The interview approach was used to achieve the objectives of the study. The interview respondents were drawn from the western regional capital of Ghana. Since the hospitality sector plays a key role in the economy of Ghana, such study is of good use in these difficult times. The major limitation of the current study is that the proposed conceptual framework is not tested empirically. Also, using only a qualitative approach poses a limitation to the study since other approaches could provide more concrete findings/results within the study.

Acknowledgment

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The National Policy Environment for Starting a Business: An Assessment in Vietnam

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Abstract

Entrepreneurship and starting a business have an essential role in the economic and social development of each country. Building a suitable business environment and promoting entrepreneurship are the main tasks of the government of each country. Therefore, countries need to create policies and regulations suitable to the characteristics of entrepreneurship of each country. Thus, it is possible to create a policy environment that supports, maintains, and promotes the development of entrepreneurship and starting a business in a country. This paper focuses on the research and evaluation of the impact of national policies and regulations on entrepreneurship and starting a business. In addition, Vietnam is a developing country and has an economy in transition and integration with the world economy. The study is based on a sample provided by The Amway Global Entrepreneurship Report in 2018 on national entrepreneurship in the world. The results show that Vietnamese rules and regulations are easy to understand and follow. However, the research findings show that the regulations of the Vietnamese government are not the most significant factor when individuals start their businesses. In addition, the national policy environment in Vietnam for starting a business is better than Asian averages and Global averages. The results contribute to providing evidence on the impact of national policies and regulations on entrepreneurship as well as on starting a business. The paper concludes with a discussion of the results and implications of the study at the end.

Keywords: national policies, government, business, entrepreneurship, Vietnam.

JEL Classification: D73, M10, M21.

1. Introduction

Over the past decades, starting a business and entrepreneurship in countries in the world have been continuously interested in and focused on expansion and development. Entrepreneurship is playing an increasingly important role in national development policies (Păunescu & Molnar, 2020). In addition, entrepreneurship is considered one of the main drivers of economic and social development, generating

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many social and financial benefits around the world (Okah-Efogo & Timba, 2015; Păunescu & Molnar, 2020). Therefore, along with the growth and development of the economy, more and more localities and countries do their best to promote the development of entrepreneurship and start-up activities of local and national importance. Thus, it can be said that entrepreneurship and starting a business play a significant role in the national development policies, not only in developing countries, but also in developed countries. Furthermore, entrepreneurship is considered a priority area in the national social and economic development policies (Fairlie, 2011).

Besides, building a suitable business environment to promote entrepreneurship and start a business is an essential task of each country's government. Government policies have a significant role in promoting entrepreneurship and starting a business in the country (Păunescu & Molnar, 2020). Countries need to establish policies and regulations that suit the entrepreneurship and characteristics of the entrepreneurs of each country. Thus, countries and governments can create a policy environment that is best for entrepreneurship, contributing to supporting, sustaining, and promoting entrepreneurship and starting a business.

This paper tries to complement a study that explores the effect of national policy on entrepreneurship and starting a business. The main goal of this paper is to assess the influence of government policies on entrepreneurship and starting a business. The study is based on a specific case, which is Vietnam. Vietnam is a country with a transition economy, and the regulations are not well completed. Moreover, the paper provides differences in assessments of different groups of respondents based on differences in the demographics. Based on this, it is possible to clarify specific assessments of national policies. To achieve these goals, the paper conducts a review of relevant literature and statistical analysis of the data gathered from The Amway Global Entrepreneurship Report (AGER) in 2018 about entrepreneurship, motivation, and desire to start a business in countries around the world. Finally, there are conclusions and suggestions to improve research on the impact of national policy on entrepreneurship and starting a business.

The paper is structured to include the following parts. The first part provides a brief literature review of the studies. Herein, the emphasis on the role of national policies and rules on entrepreneurship is presented. The second part explains the research method used in this paper. The third part includes research findings, which present entrepreneurs' assessments of national policies and rules. Then, the final part is to conclude and discuss the research results of the paper, establishing directions for future research.

2. Problem Statement

Nowadays, along with the economic development of countries around the world, more and more enterprises are established and strongly developed. Many researchers have recognized that entrepreneurship and starting a business have an important role in the economic and social development of each country (Okah-Efogo & Timba, 2015; Hartono & Muzayanah, 2020; Prasetyo & Kistanti, 2020). Entrepreneurship is

considered one of the main drivers of economic and social development, generating many social and financial benefits worldwide (Okah-Efogo & Timba, 2015; Păunescu & Molnar, 2020). However, besides the advantages for improvement, there are also many risks and challenges for the economy, institutions, society, and business environment affecting enterprises (Priede-Bergamini et al., 2019; Păunescu et al., 2018; Păunescu, & Molnar, 2020).

Researchers point out to the contextual factors related to the business environment, such as infrastructure, information technology, social environment, political institutions, and policies having a direct impact on the business environment as well as business start-up behavior, business intentions, willingness to participate in the business, entrepreneurial characteristics (Ozaralli & Rivenburgh, 2016; Păunescu, & Molnar, 2020). In particular, institutional factors have a significant role in promoting the entrepreneurship of individuals (Geldhof et al., 2014). Research by Kallas (2019) has determined that perceptions of entrepreneurs in the political and social environment influence their intention to start a business in the future. Besides, Jang (2020) has shown that the government contributes to the improvement of entrepreneurship support programs, reducing barriers and difficulties in starting businesses. However, there is a need to match government policies with the entrepreneurship of the entrepreneur. However, Lee et al. (2015) found that government support has a negative effect on the number of newly established enterprises. Therefore, countries need to identify and understand clearly the factors affecting entrepreneurship and the entrepreneurial characteristics. From this, there may be policies to help enterprises survive and develop as well as to strengthen the nation's entrepreneurship. Furthermore, individuals need to pay attention to environmental factors that affect entrepreneurship, including the institutional and policy environment. From there, they can develop capabilities and resources to promote entrepreneurship and starting a business (Păunescu & Molnar, 2020).

Vietnam is a developing country. Local development, poverty reduction, and promotion of the national development strategy are currently Vietnam's topmost essential tasks. In addition, in recent years, along with the development of the economy and the integration into the world economy, entrepreneurship activities are developing more and more. The number of established businesses, as well as entrepreneurs, is increasing. It contributes to economic development. With the significant roles and the benefits gained when promoting the development of entrepreneurship, more and more localities in Vietnam strive to promote start-up activities through many supportive policies and different development solutions. In addition, the Government of Vietnam also considers promoting entrepreneurship and starting a business to be a top national policy. In recent years, Vietnam has had certain policies to promote the entrepreneurship of the country, including enacting "Supporting the national innovative start-up ecosystem to 2025" - Project 884; "Supporting start-up in students until 2025" - project 1665, "Propaganda, education, advocacy and support for women to participate in solving some social issues related to women period 2017-2025" - project 939 (Vietnamese Government, 2016a; 2016b; Vietnam Women's Union, 2017); as well as some changes in the law such as

the Law on enterprise 2020, the Law on support of small and medium-sized enterprises 2020, the Law on enterprise income tax 2020, etc. (Vietnamese Congress, 2020a; 2020b; 2020c). These policies have had strong effects on entrepreneurship, as well as on starting a business in Vietnam. Besides, this is also an important driving force contributing to promoting and increasing entrepreneurship and the development of enterprises in Vietnam.

However, in fact, the national policy indexes in the Global Entrepreneurship Monitor report (GEM) show a downward trend in assessment (in Table 1). It reached the lowest level in 2017. It is contrary to the efforts of the Vietnamese government to adopt policies that promote entrepreneurship. Governmental Support and Policies had a decrease from 2.93 to 1.9 (a decrease by 1.03 points). This is a large reduction. Taxes and Bureaucracy index also had a decrease of 0.06 from 2.46 in 2013 to 2.4 in 2017 after peaking in 2015 (0.78). It shows that entrepreneurs have a rather negative assessment of startup policies in Vietnam today. By contrast, entrepreneurial intentions in Vietnam tend to increase over the years. Entrepreneurial Intentions rose from 18.2 in 2014 to 25 in 2017.

Table 1. Government Policies and Entrepreneurial Intentions by GEM in Vietnam

Indicators	Year		
	2014	**2015**	**2017**
Governmental Support and Policies	2.93	2.62	1.9
Taxes and Bureaucracy	2.46	2.78	2.4
Entrepreneurial Intentions	18.2	22.3	25

Source: Compiled by the author using data from Global Entrepreneurship Monitor, https://www.gemconsortium.org/.

Therefore, it is necessary to have an overview of Vietnam's policies and rules on entrepreneurship and starting a business as well as of specific assessments of those policies. From such an endeavour, solutions and implications for the Vietnamese government to change or adjust policies appropriately can be drawn. It preserves growth and promotes entrepreneurship, starting a business in Vietnam.

3. Research Question/Aims of the Research

The main goal of this paper is to assess the influence of government policies on entrepreneurship and starting a business. Furthermore, this paper has attempted to delve into details of individuals' assessment of government policies in a particular country, Vietnam, by using survey data collected from The Amway Global Entrepreneurship Report in 2018. Vietnam is a developing country with transition economies. In addition, differences in assessments between groups with different characteristics are explored with the aim of taking a more detailed view of individuals' evaluation of policies government on entrepreneurship and starting a business in Vietnam. Two research questions of interest in this study are:

1. How much influence do government policies have on starting a business compared to other factors?
2. Are government policies beneficial in starting a business over other factors?

4. Research Methods

To achieve the purposes of the study, the paper is conducted using a statistical analysis based on data collected from the Amway Global Entrepreneurship Report (AGER) survey in 2018. AGER is a global survey with the aim to survey the public about the starting-a-business status as well as the state of entrepreneurship, motives, and desires of entrepreneurs in countries around the world. The Amway Global Entrepreneurship Report in 2018 was based on a survey of 48,998 people in 44 countries in the world (AGER, 2018). The research data is collected within the 2018 AGER survey. To conduct the analysis, two questions in the AGER Report relevant to government policies are used:

- What would be most helpful for you, if you were to start a business?
- With which of the following statements about your country do you agree?

To analyse the evaluation of the impact of national policies on entrepreneurship and starting a business, the analytical method used in that paper is statistical analysis. The data are scanned and analysed through Excel software to identify patterns and extract elements suitable for the study. The results presented are related to the statistical data.

5. Findings

The total number of observations in AGER's research data for Vietnam in 2018 includes 1040 observations. The study will use all 1040 observations from AGER's research data for the analysis. The statistical results describing detailed data about the observed samples collected from AGER in 2018 are shown in Table 2.

Table 2. Descriptive statistics from AGER data in 2018

Criteria		Samples	Percent (%)	Criteria		Samples	Percent (%)
Gender	Male	494	47.5	Monthly Net income (USD)	Up to 282.6	99	9.5
	Female	546	52.5		282.6 up to 869.5	695	66.8
Age (years)	15-29	408	39.2		More than 869.5	182	17.5
	30-59	586	56.4		Refused/Don't know	63	6.2
	60+	46	4.4	University Degree	Yes	411	39.5
Regions	North	267	25.7		No	629	60.5
	Central	74	7.1	Self-Employed	Yes	260	25.0
	South	698	67.2		No	780	75.0
Total		1040	100	Total		1040	100

Source: Compiled by the author using data from AGER.

The demographic situation of the respondents is presented further in Table 2. The number of respondents by gender is quite balanced between men and women at 47.5% and 52.5%, respectively. In terms of age, 95.6% of respondents are mainly in the working-age group from 15 to 59 years old, these people mainly have average income (282.6 USD up to 869.5 USD). About 67.2% of the respondents surveyed live in the southern region with the most developed economy in the country. The

proportion of people with university degrees only accounts for 39.5% compared to people without university degrees at 60.5%. In addition, people who are not self-employed account for 75%, while those who are self-employed account for 25%.

The results of data analysis show that there is a difference between individuals' consent regarding national conditions affecting the entrepreneur to start and run a business. The statistical results are presented in Figure 1. The factors evaluated in the study are the Beneficial economic situation, Technology availability, The national education system, The national rules and regulations, and Tax policies. These are all important factors of a country that affect entrepreneurship and starting a business. Among the factors assessed, there are two factors that show the role of national policies for entrepreneurs: The national rules and regulations, and Tax policies.

The results of statistical analysis show that there is a high rate of consent regarding factors of the nation that influence starting and running a business (over 50%). Besides that, there is a significant discrepancy in those rating levels. Tax policies of the country have the highest rate of consent with 77.5% of respondents. This is followed by assessments of the Beneficial economic situation (70.5%), Technology availability (66.5%), The national rules and regulations (63.8%), and the final factor is The national education system (61.9%).

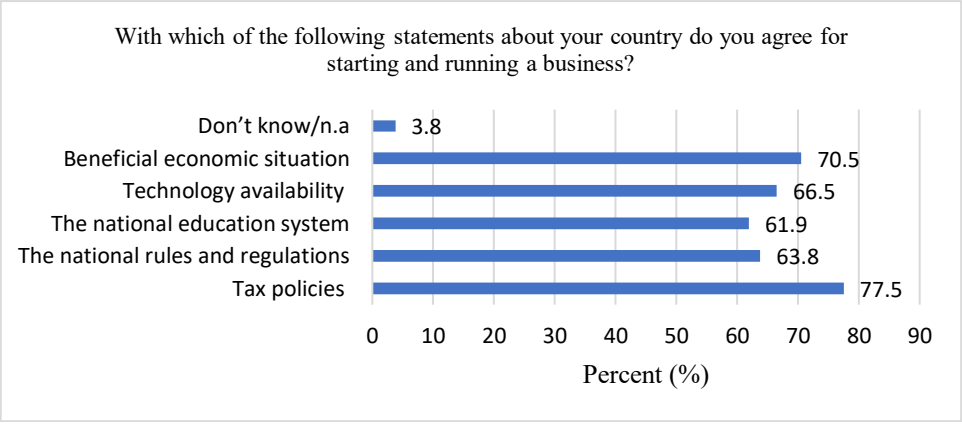


Figure 1. National factors affect starting and running a business

Source: Compiled by the author using data from AGER.

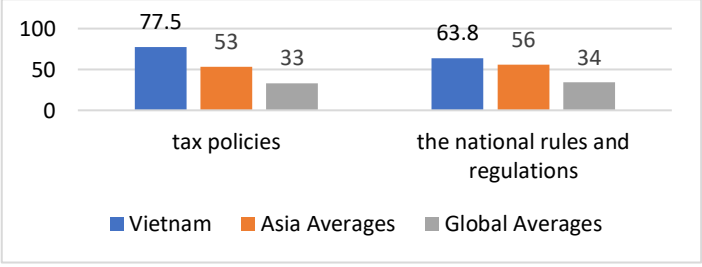


Figure 2. The assessment among Vietnam, Asia Averages and Global Averages

Source: Compiled by the author using data from AGER.

The difference between the level of assessment among Vietnam, Asian averages, and Global averages are presented in Figure 2. The results illustrate that the national policies on Tax policies and The national rules and regulations in Vietnam are higher than the others. So, it shows that national policies have a significant influence on entrepreneurship and starting a business in Vietnam.

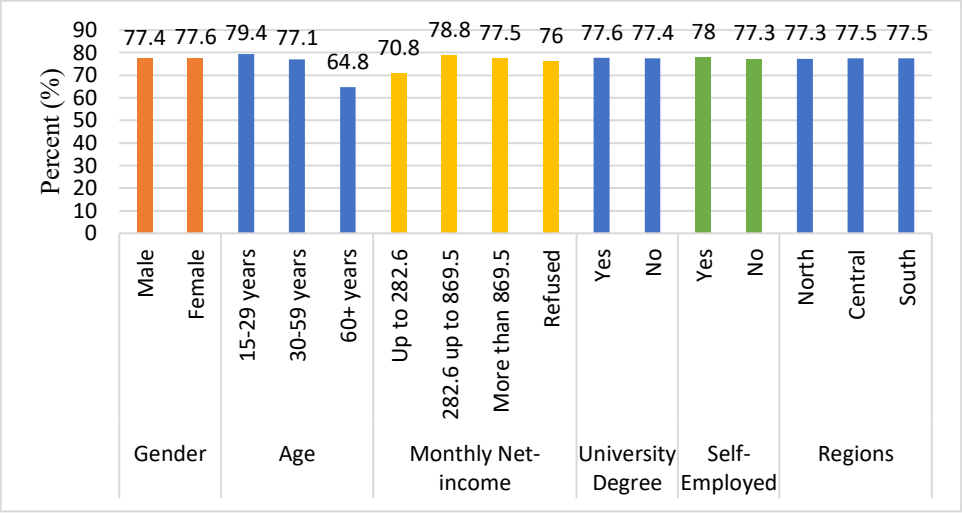


Figure 3. Differences in the assessment of tax policies
Source: Compiled by the author using data from AGER.

The results of a detailed analysis are shown in Figure 3. Furthermore, the results point out the difference in the rate of consent of individuals regarding the impact of national tax policies on entrepreneurship. It is not a significant difference in the assessment rates among the characteristics of entrepreneurs such as gender, university degree, self-employed, and regions. The rates are quite similar and are high. There is only a difference in the rate of assessing the effect of the national tax policies on entrepreneurial characteristics on Age and Monthly Net income. The age group over 60 has a lower rating (64.8%) compared to those of young ages (the rate of assessment is over 77%). In Vietnam, the elderly have more tax incentives than young people and people of working age. As concerns the Monthly Net income, low-income respondents have a lower rating than those with middle income and high-income respondents. This can be explained by the fact that a ladder tax system is being applied in Vietnam with higher tax rates for high-income and middle-income earners and low tax rates for low-income earners.

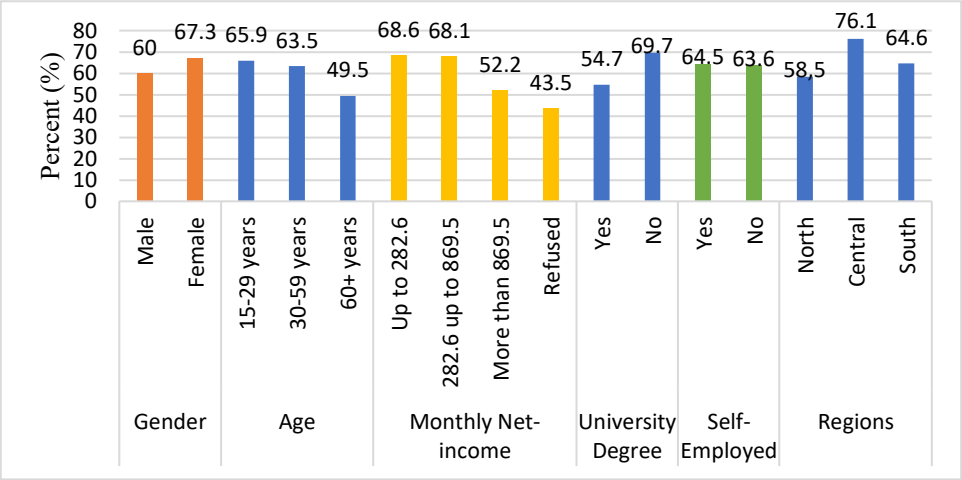


Figure 4. Differences in the assessment of national regulations and rules
Source: Compiled by the author using data from AGER.

The results of analysing the differences in the evaluation of national regulations and rules are illustrated in Figure 4. The percentage of female respondents who agree is higher than that of male respondents, but the elderly respondents have lower rates of consent than those of working-age respondents. Besides, respondents with high-income levels or university degrees have lower rates of consent compared to the others. Furthermore, respondents in the central region have a much higher rating than respondents in the other two regions. As for the business model (self-employed), there is a similar rating among groups.

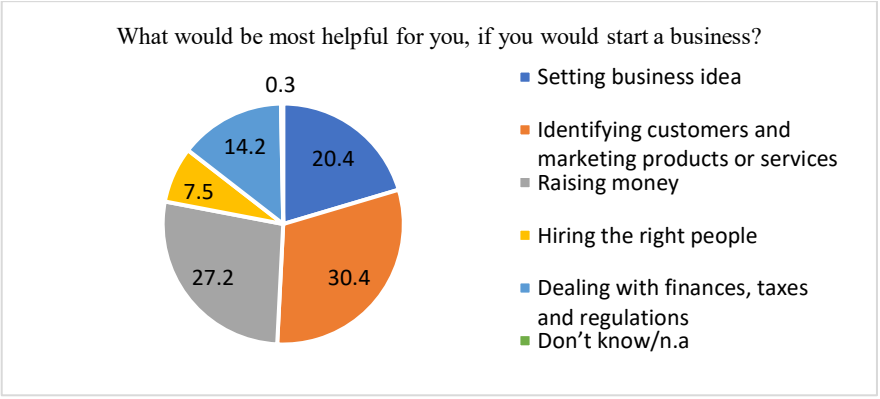


Figure 5. Factors affecting the starting a business
Source: Compiled by the author using data from AGER.

Another question regarding the role of helpful factors when starting a business, the AGER report outlines five key factors: Setting business ideas, Identifying customers and marketing products or services, Raising money, Hiring the right people, Dealing with finances, taxes, and regulations. Evaluation results are shown

in Figure 5. The results show that the factor Dealing with finances, taxes, and regulations is not among the important factors when starting a business (the rate is 14.2% - fourth among surveyed factors) after The settings business idea, Identifying customers and marketing products or services, Raising money. These are rather internal factors of individuals themselves than the external factors such as Hiring the right people and Dealing with finances, taxes, and regulations.

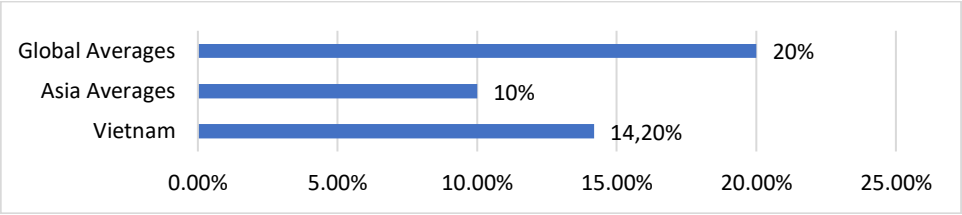


Figure 6. Dealing with finances, taxes and regulations among Vietnam, Asia Averages and Global Averages

Source: Compiled by the author using data from AGER.

Compared with the Asian averages and Global averages, the results in Figure 6 show that the percentage of respondents in Vietnam is higher than the Asian averages and lower than the Global averages.

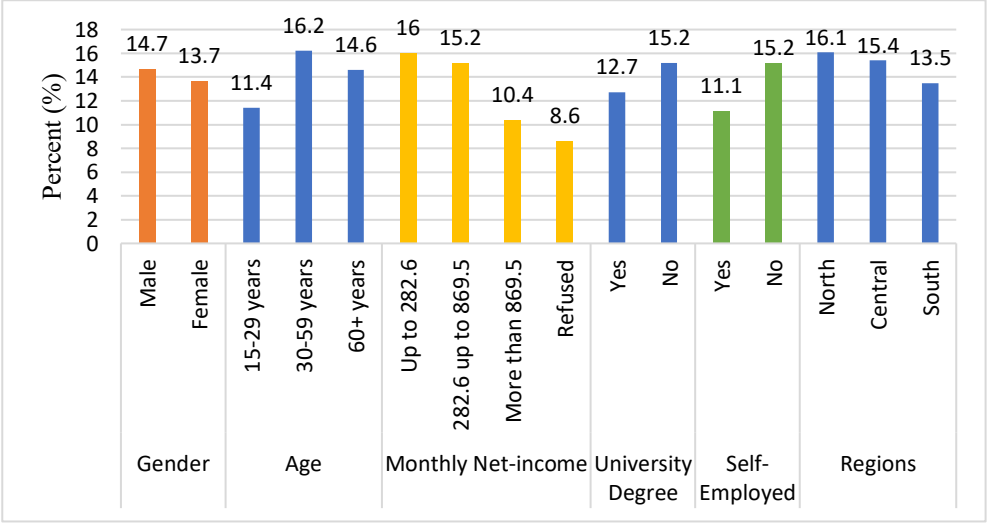


Figure 7. Differences in the assessment of the role of national policies and rules when starting a business

Source: Compiled by the author using data from AGER.

A detailed assessment of the differences of respondents with different characteristics regarding the ability to dealing with finances, taxes, and regulations when starting a business is shown in Figure 7. Results indicated that there was a difference in the level of consent between different individuals. Thus, the rate of the

consent of male respondents is higher than that of female respondents. The respondents with university degrees and not self-employed had a higher rate of consent than the rest. In terms of Age, people aged 30-59 have a higher rate of consent compared to respondents over 60 years old and respondents aged 15-29 years old, respectively. In addition, the respondents with high incomes have low levels of consent. Besides, the consent rate of respondents in the north is higher than that of the others in central and southern regions, respectively.

Through the statistical analysis, the results show that there is a significant influence of national policies on entrepreneurship and starting a business in Vietnam. Most respondents agree that the national tax and regulations policies have an essential impact on entrepreneurship and starting a business in Vietnam. However, policy factors are not an important factor when starting a business. It is influenced by the individual's internal factors when starting a business. Besides, factors such as gender, age, monthly income, college degree, self-employment, and place of residence help determine certain differences in the effects of national policy on entrepreneurship and starting a business. The results confirm the research hypotheses about the effects of national policies on entrepreneurship and starting a business.

6. Conclusions

Entrepreneurs always want to survive and develop a healthy and sustainable business environment. Besides, good policies will encourage potential entrepreneurs to start their business activities. Therefore, countries and governments always need to have policies and laws that are suitable for the characteristics of entrepreneurs and friendly to businesses. Thus, it can considerably contribute to support and promote entrepreneurship and starting a business in the nation.

This paper contributes to the study of entrepreneurship and starting a business by assessing the impact of national policies and rules on entrepreneurship and starting a business. The research results show that numerous respondents evaluate the national regulations and rules of Vietnam affecting entrepreneurship and starting a business. More precisely, tax policies have a strong impact on the entrepreneurship of entrepreneurs. However, entrepreneurs feel that national regulations and rules are not the most essential factor when starting a business. In addition, government policies should focus on differences in individual characteristics such as gender, university degree, self-employed, and regions. Based on this, appropriate policies can be created. In addition, through some indicators from GEM, entrepreneurs assess that the support of national policies tends to go down. It contrasts with the high level of agreement of respondents regarding national policy for starting a business. This indicates the asynchronous influence of current policies in Vietnam.

It is why identifying and analysing the influence of national policies and rules on entrepreneurship and starting a business constitute both an interesting challenge and a valuable research effort. Furthermore, in this paper, we examine the differences in assessment across groups of respondents with different characteristics. This provides a more detailed and specific view of the influence of national policies and laws.

In addition, there are also some limitations of current research. First, the study sample is based on global survey data conducted by AGER. Based on the available data, the study cannot further analyse in detail the effects of government policies and rules on entrepreneurship in Vietnam. Therefore, other factors regarding the influence of government policies and laws on entrepreneurship need to be identified and considered, meaning that some observations do not completely reflect the reality and cannot be construed. This is the reason future studies that may focus on these problems.

Acknowledgement

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Needs for Remodeling the Entrepreneurship Education for the Post-COVID-19 Era

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Abstract

Achievement of financial stability, good sales results and generating return on investment are discussed as being among the main goals of entrepreneurship in general. With the new technological wave, the requirements for successful entrepreneurs are constantly considering the specific features of digitalization, the new type and the speed of communication, the role of social media, etc. Following only these few examples, it can be argued that the development of entrepreneurship has followed the line of the latest economic and technical processes on regional, national and international scale. In addition, the entrepreneurs of the new 21st century can be identified as global entrepreneurs creating a global entrepreneurial ecosystem. The adaptability of entrepreneurs is also expressed in their ability to reflect changes in terms of technology application and digitalization on the one hand, and social changes, on the other hand. That is why both technopreneurship as well as e-entrepreneurship are emerging.

This research raises the question of the needs for entrepreneurship education for the Post-COVID-19 era. The authors' aim is to reveal the views and preferences of the students regarding four courses of a bachelor's and master's degree in one Bulgarian university. Circumstances surrounding the COVID-19 pandemic inevitably reflect on each area of social life, including education, and for this reason we want to find out to what extent students feel the need to reconsider traditional models: a new look towards knowledge acquisitions, education and training, and a reconstruction of their expectations towards training are attested. For this reason, a remodeling of the tertiary entrepreneurial education as regards the Post-COVID-19 era is proposed.

Keywords: entrepreneurship, tertiary education, remodeling, pandemics.

JEL Classification: I20, L26.

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1. Introduction

The global COVID-19 pandemic has forced the humanity to change every aspect of social and economic life, and to adapt to a new digital space. In their everyday lives, students, teachers, employees, and industrialists started working remotely online. The evident need to establish sustainable business models for education is undeniable. Much in this vein, a general statement on the socio-economic development of entrepreneurship relates its key attributes to the new kind of international business environment.

Entrepreneurial activity is an integral part of the economy of any country and is an overarching type of activity, which extends across sales tools, financial planning, legal bases of joint ventures, technologies for digital business management and many others. Entrepreneurship can prioritize one of these activities, show combinations between them to gain a competitive advantage, or optimize them by converging them (Grubicka & Matuska, 2015; Choi & Kim, 2017). In addition, entrepreneurship is a means of internationalizing business (Autio, 2017; Etemad, 2018). As a pro-active agent, the entrepreneur is a kind of accelerator of public life, of intersectoral cooperation, and at the same time of partnership between the countries, giving a major share in one of the highest priority areas for employment and reduction of social crises. Technological entrepreneurship, together with an innovative entrepreneurship, as well anti-crisis entrepreneurship in favour of resolving conflicts of various natures, are still perceived as knowledge-intensive areas (Koch & Strotmann, 2006; Acs, Audretsch & Lehmann, 2013). In this regard, it is worth paying more attention to entrepreneurship education, which should increasingly shift the education of bachelor and master students to evolutionary economics, as this can become an important step in the development of global entrepreneurship. A key place in this process must be given to the integration of innovation, technology and digitalization.

In the current research, two approaches are taken: descriptive and analytical. The descriptive approach examines the problems facing entrepreneurship from the point of view of its multifunctional nature and identifies the main advantages for development of business. This section discusses aspects of entrepreneurship selected by the authors. Basic techniques for the success of traditional entrepreneurship are outlined. Additionally, an authors' model of the entrepreneurship chain is proposed, which according to the authors provides guidelines for the future development of entrepreneurship and may be relevant to current processes in modern society, especially with regard to the new profile of entrepreneurship in crisis. Furthermore, the article discusses entrepreneurship education in the context of higher education. In its classic form, entrepreneurship education offers its bachelor and master students up-to-date knowledge and preparation for the dynamic processes in the economic life of each country. Unfortunately, this is the situation in most cases, and shortcomings in specialized business training still exist.

In order to check the topicality in connection with the expected professional competencies of the profile "Entrepreneurship", a broader survey was conducted, in

which the students' wishes for acquiring skills in relation to the following domains of knowledge, were put forward:

- study of business processes of entrepreneurial activity of economic entities at both micro and macro level;
- understanding the behaviour of business operators at the meso level;
- implementation of intersectoral links;
- information and analytical activity in strategic, current and operational forecasts, plans, budgets in the field of entrepreneurial activity and related activities outside entrepreneurship;
- analysis and evaluation of market data in the era of disturbances needed to address the challenges of the new business environment;
- using the advantages of digitalization;
- making motivated and justified decisions in the field of entrepreneurial activity;
- development of strategies in the field of new technologies and innovative entrepreneurship.

In order to outline the main directions of entrepreneurship education for the Post-COVID-19 Era, the theoretical aspects of the characteristics of the phenomenon of 'entrepreneurship' should be considered. A review of literature sources reveals the existence of many definitions that describe entrepreneurship in view of organizing capital and risks, working with institutions, approaching different social and ethnic groups, inclusion of culture, etc.

In the popular definitions of entrepreneurship, often entrepreneurs are described as *marketing specialists* acting predominately in the field of trade (Filion, 1990; Kao, 1993; Hills, 1994). One of the main capabilities of the entrepreneur is to operate between a known profit and an unknown selling price, and thus to take risks on different levels (Venkataraman & Lee, 2001; Whalley, 2009; Kyurova & Koyundzhiyska-Davidkova; Arnold, 2020).

Definitions from economic dictionaries also focus attention on entrepreneurship as an independent, active and risky activity (Shaw, 1993; Mariotti and Glackin, 2013). The personal and psychological determinants of the entrepreneur at this stage are not explicitly defined. They are considered a prerequisite.

The entrepreneurs act proactively, independently, on their own behalf, at their own risk, under their own responsibility. The activities of entrepreneurs (in the person of individuals) and legal entities and market policies (Dimitrova, 2019) are aimed at systematic generation of income, profit from the use of property, sale of goods. The classical definitions emphasizing the initiative activity move towards the role of intuition and creativity in entrepreneurship (Barksdale, 2010) and reach the scope of provision of services (Mirchova & Dimitrov, 2015), the techno-entrepreneurship, innovation (Yarkova et al., 2019; Zacharoula, 2020) and development (Thérin et al., 2019).

According to the classical definition, entrepreneurship arises when favorable opportunities for starting a business are sought, but from a practical point of view, entrepreneurship can be expressed through the effectiveness of the activities carried out in the ecosystem. This is the focus for the understanding of entrepreneurship

from the point of view of the methodology of the Global Monitor of Entrepreneurship (GEM), where in particular entrepreneurship means any attempt to create a new enterprise or new business (self-employment, creation of a new entrepreneurial structure or expansion of an existing business through persons, a group of persons or an already functioning business structure).

In search of the optimal balance for both earning income and willingness to lose, but also looking to the future, the authors focus on the main areas of entrepreneurs' qualities chain and suggest a short overview of new emerging directions in entrepreneurship education. Inasmuch doing so, they strive to make a contribution to the main understanding of the new perspectives and value creation in the context of entrepreneurial education on the whole (Fayolle and Gailly, 2008; Lackéus, M., 2016). The results also include a survey on the preferences of young professionals who assess the coming Post-COVID-19 situation as a paramount need to be integrated in their training in entrepreneurship.

2. Research Goals

Based on the given lines of research, one can conclude that entrepreneurship is an important phenomenon in the modern market economy and its study and effective application are a prerequisite for growth, prosperity and crisis management. Therefore, in addition to the considered 'classical' aspects in the definition of entrepreneurship, the authors believe that one specific feature needs to be considered, in view of the current situation. The authors claim that the creation of a model of entrepreneurship education for the Post-COVID-19 Era should have already started.

According to the authors, the model of the entrepreneur's chain, which specifies the types of entrepreneurs, would consist of the following components:



Figure 1. Entrepreneurs' chain
Source: Authored model.

The phenomenon of entrepreneurship acts as an integral feature of the market economy. In view of the evolutionary economy, however, entrepreneurship becomes

a mirror, not only of the economy, but also of society as a whole. The fact is, the more developed the market economy in a country, the larger the number of business units and enterprises. Wealth creates fertile ground and contributes to the development of creativity and abilities and talents. Business is growing beyond the convention, which is evidenced by the increased share of entrepreneurs in the creative industries. Creativity largely depends on the development of technological skills, operational capabilities and the application of high-tech capabilities. On the other hand, entrepreneurship is one of the forms of manifestation of social needs in society, which intensifies in times of crisis.

Based on the above, and in view of the presented matrix model, we can conclude that the leading place, from today's point of view, belongs to the complex personality of an entrepreneur. The entrepreneur of the modern times needs to cope with tasks in the following areas: the ability to combine intelligence and erudition for start-up companies in the field of small and medium enterprises; analyse the market and its future needs for a successful enterprise; ability to develop several types of entrepreneurship, including technological and innovative entrepreneurship, creative entrepreneurship. The concept conceived in this way also includes two different types of activities of the entrepreneur, such as activities related to social media and others, not so specific as, for example, digital health. The last two types of activities in the niche of the entrepreneurial chain are indicative and provide guidance on combinability with public health issues and their closer connection with the global health crisis, the possibilities for overcoming it and entering the Post-COVID-19 era. The model is not conclusive, but rather aims to predict market trends and focuses on the trends in high technology business.

In this sense, last but not least, the entrepreneur is obliged to take a proactive attitude to the pressing problems in society and to actively participate with the resources that the specific features of their activity can help to overcome them. Such a tendency is confirmed by the need to develop classical entrepreneurship, but in the direction of creative, technological and innovative entrepreneurship, digital health entrepreneurship, whose areas are confirmed in the current survey as knowledge-intensive areas.

3. Problem Statement

The research goal of this study is to find out what the preferences of young and future professionals are and to what extent they assess the coming Post-COVID-19 situation as an objective needed to be integrated in the training of entrepreneurship subjects such as Public Health and Crisis Entrepreneurship, but also to what extent future professionals assess the need for the inclusion of such subjects as Digital Entrepreneurship, Social media Entrepreneurship and Technopreneurship in the curriculum.

Aiming to take into account the opinion of current students of entrepreneurship, the authors consider the aforementioned areas of knowledge and subject them to assessment by students. The respondents are students who have studied Entrepreneurship at the Bulgarian South-West University “Neofit Rilski”,

Blagoevgrad. Students not only participate in a survey and give a critical opinion of the subjects studied, but also seek an answer to the question of the place and role of entrepreneurship during the COVID-19 crisis (Vasenska, 2021). Given the multifaceted nature and complexity of the global pandemic, the fact that our society now is not prepared to deal with such large-scale health crises, many of the issues will remain the subject of future research. Another part of the questions raised concern views and recommendations, thus giving preference to both theory and the praxis of entrepreneurship including creativity, culture and social media. One third part of the problems is expected to have a great relevance for the domain of innovation, technology and sustainable business models.

4. Research Methods

The proposed study provides a quantitative analysis of a survey among students in entrepreneurship from first to fourth year at the SWU University in Bulgaria.

Some of the discussed topics concern the digitalization process of education during the COVID-19 Era, other regard the access to information and the role of communication technologies, the need of new knowledge, the application of innovations in training. The third part of the questions is directed to need of possible changes in the entrepreneurship education in the Post-COVID-19 era.

The methods of grouping, comparison, graphical index and survey methods are used for the analysis. In order to estimate the research question, in October 2020 this survey was conducted among 90 Bulgarian students. The general sample frame of the population consists of students in two professional fields, Marketing and Business Administration, in the bachelor's and master's degree programmes from the first to the fourth year of study (full-time and part-time) at the South-West University "Neofit Rilski", Blagoevgrad, Bulgaria. The list of the population includes 270 items, excerpted from existing mailing lists of the courses (bachelor and master database of the Faculty of Economics at the SWU "Neofit Rilski", Blagoevgrad). The selection of the sample was made in order to achieve representativeness of the study and it makes one third of the general sample frame. The characteristic features of the population are included in its structure. The study uses a simple random sampling (SRS).

Based on the analysis of the respondents' opinion, the authors were able to assess the advantages and disadvantages of E-learning in the field of entrepreneurship, its opportunities and the need for reorganization, and as they proposed, the existing need of curriculum remodelling. The obtained results provide a vision for inclusion of some new guidelines for the educational material and its expected improvement.

The questionnaire contains four blocks of questions related to: the respondents' profile; the specific features, necessity and importance of E-learning in modern conditions; the need to update the curricula and subjects studied in the era of COVID-19. The evaluation of the indicators is carried out on a 5-point Likert-type scale, whereby the attitudes towards entrepreneurship education in a pandemic situation are determined. Attitudes assessment are distributed as follows: strongly disagree (1); disagree (2); neutral (3); agree (4); strongly agree (5).

5. Findings

The results of the survey show that the sample is dominated by young people who continued their education at the university immediately after graduating from high school. The majority of the respondents (56.7%) are aged between 18 and 25 years. The distribution in the other age groups is as follows: 26-35 years - 26.7%; 36-45 years - 13.3%; 46-55 years - 3.3%. No students over the age of 55 are presented in the survey. The distribution of respondents by gender reveals a predominance of women (73.3%) over men - 26.7%.

The data show that 73.3% of the respondents study in a bachelor's degree programme and 26.7% in a master's degree programme. At the time of enrolment in higher education, full-time education is preferred by 46.7%, part-time - by 53.3%. At the same time, it was found that 6.9% of the respondents are first-year students; 20.7% are second-year, 10.3% are third-year students and 62.1% are fourth-year students.

Interest in the study issue is a matter concerning the employment of the students during their training. The results of the survey show that almost all students (96.6%), including full-time students, work during their studies.

An important point is the consideration of the issue from the point of view of the preferred form of education. According to the survey, the predominant part of the respondents (53.4%), express their strong desire to study in the form of distance learning. Around 23.3% of students prefer the on-ground full-time study form and the same share (23.3%) find the hybrid form to be the most effective form of learning. About 36.7% of students strongly agree and 20.0% agree with the notion that the development of information technology increases their learning opportunities. The share of skeptics is relatively low (16.7%).

A detailed study of the issue shows a positive attitude towards the need to introduce online entrepreneurship education (56.7%). The main reason is the desire for development in the field of Digital entrepreneurship (63.4%). In addition, the respondents believe that this will increase their knowledge and competencies (63.4%), professional realization (60.0%) and career development (53.3%).

Regarding the adequacy of the curriculum, the studied subjects and their content in relation to the current situation of training in a pandemic environment, the results of the survey show fluctuation in a large part of the respondents - 40%. 30% of them strongly agree and 26.7% agree with the statement.

An important question on the researched issues is the students' opinion regarding the subjects they would like to study in the Post-COVID-19 era. The data obtained is presented in Figure 2:

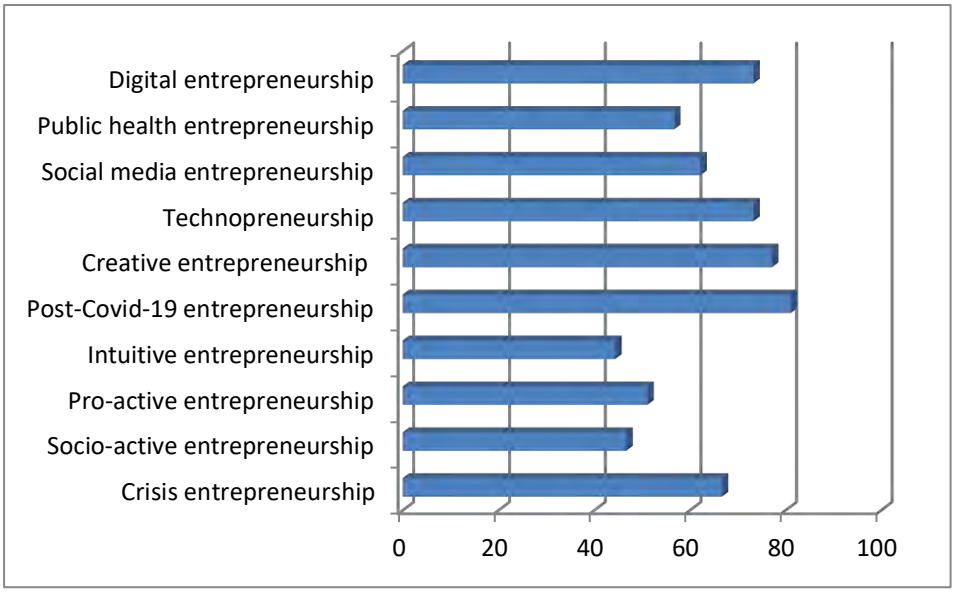


Figure 2. Subjects that respondents would like to study

Source: Own calculations based on the authors' survey.

* Note: *The sum of percentages is more than 100 because the respondents gave more than one answer.*

It should not be overlooked that 6.7% of respondents argue that the study of such subjects would be useful only if they were taught by teachers with practical experience in the relevant fields of technopreneurship, socio-active entrepreneurship and crisis entrepreneurship. The most important areas of entrepreneurial education are the domains of Post-COVID-19 entrepreneurship (81,1%), digital entrepreneurship and technopreneurship (73,3) and creative entrepreneurship (77,2%). Intuitive and socio-active entrepreneurship are the least attractive for the respondents.

Examining the results of the study in the context of Entrepreneurs' chain (see Figure 1), it is clear that students have attitudes not only to study the classical subjects of entrepreneurship, but also those subject to modern times and related to the construction of knowledge, skills and competencies in the field of digitalization, high technology and crisis management.

6. Conclusions

Modern conditions and the business environment provide opportunities for development in the field of entrepreneurship, innovation and technology that the young people would like to take advantage of. In this regard, a change in the professional field of education is needed. The expectations to adapt the curricula of higher education to the current situation are in line with the students' demands and market requirements.

The article identifies the following areas as needed for the knowledge development of entrepreneur education for the Post-COVID-19 era:

- Area of digital and technological entrepreneurship;
- Area of creative entrepreneurship;
- Area of Public health entrepreneur;
- Socio-active entrepreneur.

The entrepreneurial environment can still be described as an environment open to innovation and technology, but at the same time, this environment is open to the effects of global economic threats. Thus, there is more and more discussion about the efficiency of the educational curricula provided for the entrepreneurship. The optimality of the social media is part of the debates held in this direction. Information technologies become part of every human product, and they are an inevitable part of the entrepreneurship activity as well. It is also more than obvious that they are a new trend in the future development of socio-economic life, and entrepreneurship cannot stay away from the various aspects of public life and will remain so especially in times of global pandemic crisis.

Based on this study, the need for reorganization of the traditional thinking and the introduction of a new model of entrepreneurship education is discussed. The proposed remodelling chain is estimated as valuable for potential inclusion in subsequent frameworks. Additional methodologies using Hypothesis Testing approach can also significantly contribute to the scope of the examined research questions. The considered issues will be developed in further scientific works of the authors determining the future research directions of the problem.

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The Evolution of Innovative Entrepreneurship Indicators in Europe. Implications for the Labour Market

Ancuța LUCACI[1]

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Abstract

Innovation and Entrepreneurship go hand in hand and generate economic growth, raise the standard of living, and contribute to sustainable development. Innovative entrepreneurship implies both the exploitation of new business ideas and models and the continuous strengthening of R&D activities. At present, the majority of policymakers from European countries are concerned to strengthen the business environment by supporting R&D activities and business innovation. The purpose of this article is to do a comparative analysis of innovative entrepreneurship in European countries and to determine the implications of innovative entrepreneurship for the labour market. The research methodology includes a comparative analysis of innovative entrepreneurship in Europe. To visualize the status of innovative entrepreneurship in European countries a database with statistical indicators referring to business innovation in Europe was used. The database was provided by the Organization for Economic Cooperation and Development (OECD) for the period 2013-2019. The indicators referring to business innovation are classified according to the type of innovation, public financial support for innovation activities, cooperation partners in innovation activities, protection of intellectual property rights, innovation and participation in international markets, expenditure on innovation activity, turnover in innovation, and employment in the innovation sector. The comparative analysis is followed by an examination of the implications of innovative entrepreneurship on the labour market. The results of the comparative analysis highlight various gaps among the European countries in terms of business innovation. Furthermore, the listing of implications of innovative entrepreneurship on the labour market highlighted that innovation can have both positive and negative impacts on employment.

Keywords: innovative entrepreneurship, innovative entrepreneurship indicators, Europe, labour market.

JEL Classification: O31, M21, Y1, O52, J01.

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1. Introduction

Entrepreneurship is an important field of research that has been investigated by numerous economists and researchers from all over the world. Many theories regarding entrepreneurship have been approached since the origin of entrepreneurship until today. Among other correlations made to define and describe the concept of entrepreneurship, innovation and entrepreneurship are a powerful example of an association that illustrates the importance of new products and processes for the development of businesses.

Being a part of social sciences, entrepreneurship was first described as a field that investigates human actions and the role of employees in the production process. Not long afterward, several economists stated that entrepreneurship contributes to economic growth and the improvement of competitiveness. This role of entrepreneurship is in modern times admitted by all the economies of the world since the establishment of new businesses contributes to the creation of new jobs and a competitive business environment. Sequentially, entrepreneurship gains a new role in the context of the massive global challenges, it stimulates the innovation process. Innovation is nowadays a key factor for the development of new, competitive, and sustainable businesses. In the field of entrepreneurship, innovative entrepreneurs are considered to be those individuals endowed with a vision for the future.

Besides the traditional role that entrepreneurs have in a businesses, such as supervision and control of the production processes and employees, entrepreneurs are responsible for their decisions and actions. Consequently, they have to take risks. Further, entrepreneurs have to ensure resource efficiency to develop a sustainable and competitive business.

Table 1. Theories of Entrepreneurship and Entrepreneur

Authors	Theories
Richard Cantillon (1680-1734)	Entrepreneurs take risks
Adam Smith (1723-1790)	Entrepreneurship investigates human actions and produces changes in the division of labour
Jean-Baptiste Say (1767-1832)	Entrepreneurship stimulates economic development
Carl Menger (1840-1921)	Entrepreneurs perform economic calculations and supervise the production process
Ludwig von Mises (1881-1973)	Entrepreneurs ensure resource efficiency
Joseph Schumpeter (1883-1950)	Entrepreneurship stimulates innovation and change
Israel Kirzner (b. 1930)	Entrepreneurs are focused on profit and price differences

Source: Authors' own research findings based on economic theories.

In recent years, innovative entrepreneurship became an important key driver for economic development. Many countries began to introduce in their entrepreneurship strategies and policies issues concerning innovation in firms. Innovation in entrepreneurship includes not only new innovative firms that emerge on the market, but also those that already exist on the market and adopt new technologies. For instance, there are different types of firms that adopt innovation, such as product innovative firms, process innovative firms, organizational innovative firms, or marketing innovative firms (OECD, 2021).

The global challenges that have occurred in the last years generated new technological changes within firms and challenged the existing entrepreneurs to become more innovative. This suggests that innovative entrepreneurship can be considered a tool to overcome global challenges.

There have been several economists, researchers, and entrepreneurs who attempted to define the concept of innovative entrepreneurship or the relationship between innovation and entrepreneurship. Certain definitions highlighted the importance of innovation for the development of the business environment and the improvement of people's lives.

Further, some definitions underline that entrepreneurship innovation involves the development of new innovative business ideas, which can be later harnessed as business opportunities. Alternatively, the identification of new innovative business ideas cannot be achieved without educated people. Human resources are considered to be the key to innovation and success in the business environment. It can be concluded that innovative entrepreneurship comprises multiple aspects, such as human resources, new technologies, and new business ideas.

Table 2. Definitions of innovative entrepreneurship

Authors	Definitions
William Pollard (1828-1893)	"Learning and innovation go hand in hand. The arrogance of success is to think that what you did yesterday will be enough for tomorrow."
Peter Drucker (1909-2005)	"Entrepreneurs must deliberately explore sources of innovation and change to identify new opportunities for successful innovation in firms."
Ted Levitt (1925-2006)	"Just as energy is the basis for human life and ideas for innovation, innovation is also a key spark for change, improvement, and human progress."
Warren Bennis (1925-2014)	"By definition, innovation will not be accepted at the first attempt. Before innovation is accepted and internalized in the firm, multiple experiments, endless demonstrations, and monotone practice are demanded. "
Watts Humprey (1927-2010)	"Innovation is the process of transforming ideas into a composition that can be manufactured and marketable."

Authors	Definitions
Steve Jobs (1955-2011)	"Innovation is not related to how many dollars in R&D someone has. When Apple designed Mac, IBM spent at least a hundred times more on R&D. It is not about money. It's about the people you have, how you are led and how much you achieve."
Innovation Policy Paltform	"Innovative entrepreneurship arises from the intersection of three key elements within the economy: innovative businesses, fast-growing young businesses, and small and medium-sized firms (SMEs)."
Oslo Manual (OECD)	"Innovation is […] a new or improved product or process (or a combination thereof) that differs significantly from previous products or processes of the unit and which has been made available to potential users (product) or put into service by the unit (process). "

Source: Authors' own research findings based on literature.

It can be concluded that innovative entrepreneurship covers multiple aspects, such as human resources, new technologies, and new business ideas. Technological innovations contribute to the development of efficient business models that can be replicated in other areas. The success of the existing firms on the market demands innovative products and processes and innovative strategies of organization and marketing. Innovative entrepreneurship encourages the creation of new firms and jobs, improves the standard of living, and contributes to the sustainable development of the business environment.

2. Research Methods

The research methodology utilized in the article included a comparative analysis of innovative entrepreneurship in Europe. To indicate the situation of innovative entrepreneurship in Europe, a database with indicators referring to Business Innovation was selected. Furthermore, the database included statistical information for 23 European countries (Table 3). In the processing of the statistical data, the abbreviations for European countries have been used.

Table 3. European countries included in the comparative analysis of Business Innovation indicators

Countries	Abbreviation	Countries	Abbreviation
Austria	AT	Ireland	IE
Belgium	BE	Italy	IT
Czechia	CZ	Lithuania	LT
Germany	DE	Luxembourg	LU
Denmark	DK	Latvia	LV

Countries	Abbreviation	Countries	Abbreviation
Spain	ES	Netherlands	NL
Estonia	EE	Poland	PL
Finland	FI	Portugal	PT
France	FR	Slovakia	SK
United Kingdom	GB	Slovenia	SI
Greece	GR	Sweden	SE
Hungary	HU		

Source: Adapted from the Organisation for Economic Co-operation and Development (OECD).

The statistical database provided by the Organization for Economic Cooperation and Development (OECD) included seven indicators classified according to the types of innovation for firms: types of innovation, public financial support for innovation activities, innovation co-operation partners, innovation and participation in international markets, innovation expenditures, turnover expenditures, and employment-based innovation indicators.

Table 4. Business Innovation indicators

Types of innovation for firms	Indicators
Types of innovation	- Innovative enterprises, as a percentage of total enterprises
Public financial support for innovation activities	- Enterprises receiving public support for innovation, as a percentage of total enterprises
Innovation co-operation partners	- Enterprises co-operating on innovation activities, as a percentage of product and/or process innovation-active enterprises
Innovation and participation in international markets	- Enterprises operating in international markets, as a percentage of total enterprises
Innovation expenditures	- R&D expenditure as percentage of total expenditures on innovation activities
Turnover from innovation	- Share of turnover from new or significantly improved products that were new to the market
Employment-based innovation indicators	- Employment in innovative enterprises, as percentage of total employment

Source: Adapted from the Organisation for Economic Co-operation and Development (OECD).

The comparative analysis concerning Business Innovation in European countries is followed by an examination of the implications of innovative

entrepreneurship on the labour market. The examination included a listing of implications of innovative entrepreneurship on the labour market.

3. Findings

This section of the article comprises a comparative analysis of Business Innovation indicators and an examination of the implications of innovative entrepreneurship on the labour market. After the processing of the statistical data referring to Business Innovation in Europe, six graphs that show the evolution of the indicators selected for analysis have been outlined.

3.1. Comparative Analysis of Business Innovation Indicators in European Countries

a. Innovative firms, as a percentage of total firms

The share of innovative firms in the total number of firms is an important indicator that illustrates the level of innovation in firms. In 2015, the largest share of innovative firms in the total number of firms was in the following five countries: Germany (66.94%), Luxembourg (66.13%), Ireland (58.74%), Italy (56.15%), and Sweden (55.93%). Poland (23%), United Kingdom (25.65%), Latvia (30.43%), and Hungary (32.47%) recorded the lowest share. The most innovative firms in 2017 were Belgium (64.17%), United Kingdom (60.24%), and Austria (59.48%). Conversely, in 2019, the most innovative firms have been recorded in Portugal (65.84%) and Finland (62.64%). Between 2017 and 2019, in Poland, Hungary, Latvia, and Slovakia, the firms carried out the least progress referring to innovation activities.

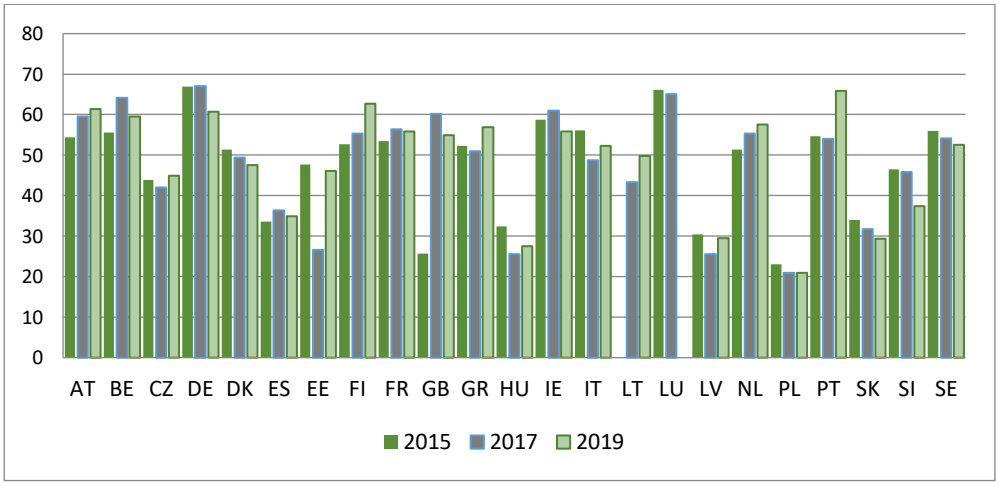


Figure 1. Innovative firms, as a percentage of total firms (Europe, 2015-2019)
Source: Adapted from Business Innovation statistics of OECD.

b. Firms receiving public support for innovation, as a percentage of total firms

Public support for innovation is a necessary intervention for many firms, especially for those that plan to adopt technological innovations in their activities. Likewise, public support for innovation is also significant for future entrepreneurs who want to capitalize on an innovative business idea. As regards the indicator related to public support for innovation, most companies that received this support in 2019 were registered in the Netherlands (20.64%), France (20.28%), Finland (19.35%), Belgium (16.97%), Portugal (15.76%) and Italy (15.02%). On the other hand, in the same year, the firms from Poland (3.84%), Slovakia (4.07%), Latvia (5.48%), and Hungary (5.65%) were granted the lowest public support for innovation.

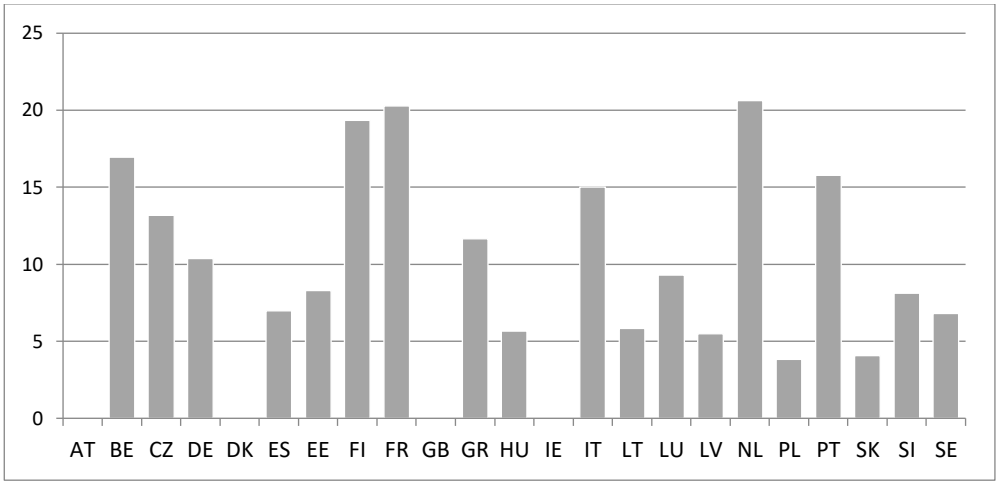


Figure 2. Firms receiving public support for innovation, as a percentage of total firms (Europe, 2019)

Source: Adapted from Business Innovation statistics of OECD.

c. Firms co-operating on innovation activities, as a percentage of product and/or process innovation-active firms

Cooperation on innovation activities constitutes major opportunities for firms to access new innovative technologies. Diverse innovative technologies will support firms to expand their production activities and to penetrate new international markets. A successful operation within firms would be to share their knowledge to increase the quality of products and services. United Kingdom, Estonia, Belgium, and Austria own the largest number of firms that cooperate on innovation activities, as a percentage of product and/or process innovation-active firms. On the other hand, the countries where the European firms cooperated less on innovation activities have been Italy, Luxembourg, Latvia, and Portugal.

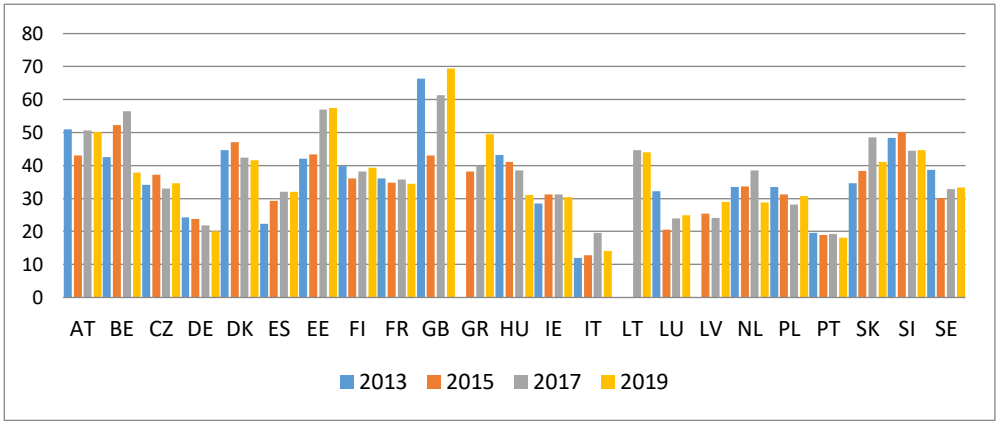


Figure 3. Firms co-operating on innovation activities, as a percentage of product and/or process innovation-active firms (Europe, 2013-2019)
Source: Adapted from Business Innovation statistics of OECD.

d. R&D expenditure as a percentage of total expenditures on innovation activities

R&D expenditure is important for both business development and the economic progress of countries. Many firms perform research and development activities within their businesses as a perspective of technological change. Consequently, R&D expenditure is a major element for continuous growth and sustainable development. In 2019, R&D expenditure as a percentage of total expenditures on innovation activities reported a high level in Germany (84%), Sweden (80%), Austria (76%), Belgium (75%), and France (75%). In Latvia, Lithuania, and Poland, has been registered an opposite circumstance, with the lowest level of R&D expenditure.

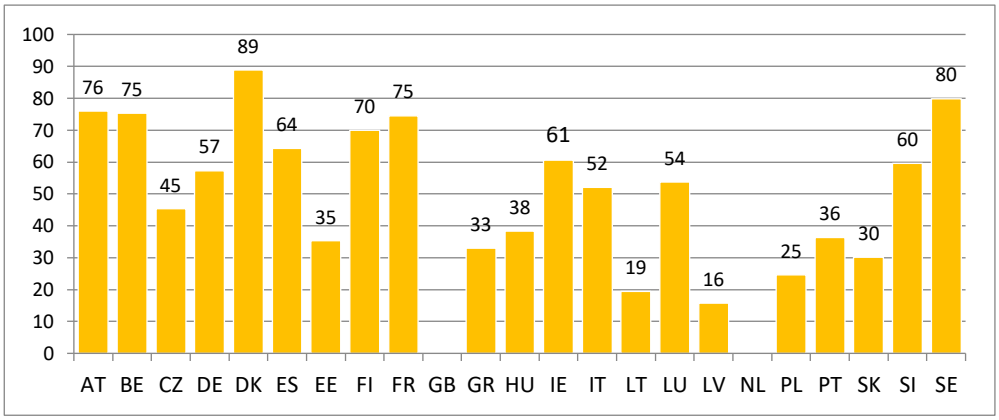


Figure 4. R&D expenditure as a percentage of total expenditures on innovation activities (Europe, 2019)
Source: Adapted from Business Innovation statistics of OECD.

e. Share of turnover from new or significantly improved products that were new to the market

The European firms should consider identifying new product opportunities since customers nowadays have become more and more demanding. In this respect, firms have to exploit new technological challenges. Products should be characterized by uniqueness, mobility, adaptability, and sustainability. In 2019, the highest share of turnover from new or significantly improved products was recorded in Slovakia (20%), Spain (19%), Ireland (17%), and Greece (17%). A reversed situation has been recorded in Luxembourg (5%) and Poland (6%), with a comparatively low share of turnover from new or significantly improved products. Despite this circumstance, in all European countries firms registered a low share of turnover from new or significantly improved products.

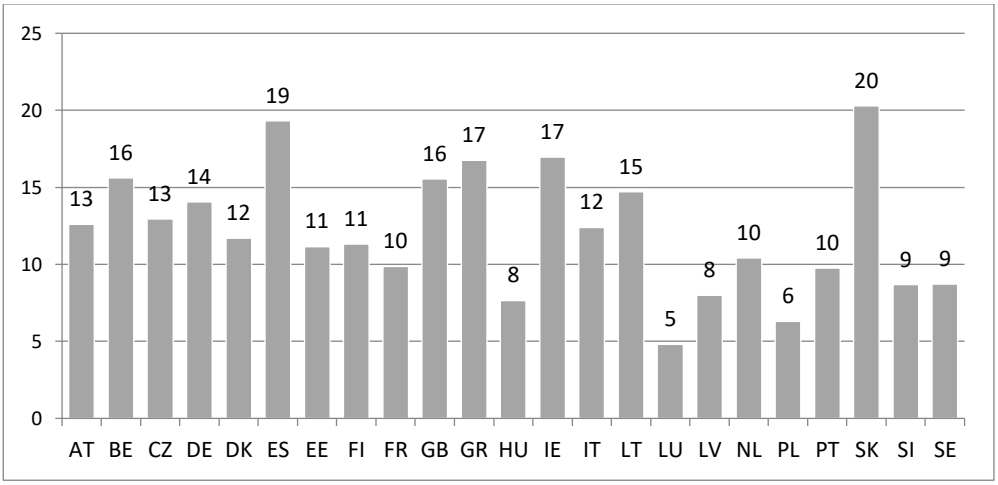


Figure 5. Share of turnover from new or significantly improved products that were new to the market (Europe, 2019)

Source: Adapted from Business Innovation statistics of OECD.

f. Employment in innovative firms, as a percentage of total employment

Generally, innovation is a source of economic progress for both firms and nations. This suggests that innovative technologies create new jobs and business innovation is a subject for employment creation. However, there are circumstances when innovation is considered a threat to many existing jobs. The situation of employment in innovative firms in Europe highlights significant levels in all European countries. The highest values of employment in innovative firms, as a percentage of total employment, were reported in Czech Republic (83%), Austria (78%), Finland (78%), France (77%), Belgium (77%), and Portugal (76%). Values below 50% are recorded in Hungary (51%), Latvia (51%), Poland (51%), and Slovakia (55%).

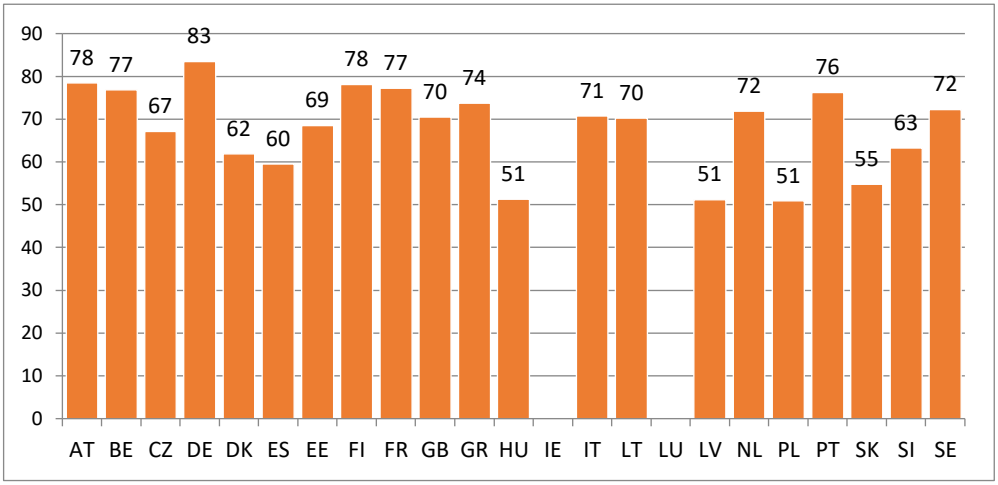


Figure 6. Employment in innovative firms, as a percentage of total employment (Europe, 2019)

Source: Adapted from Business Innovation statistics of OECD.

3.2 Implications of Innovative Entrepreneurship on the Labour Market

Innovative entrepreneurship has far-reaching implications on individuals, businesses, and countries. A major implication of innovative entrepreneurship is on the labour market and employment growth. As mentioned in the previous analysis of employment in European innovative firms, innovation is a factor that influences the employment process, and it can either create new jobs or destruct the existing ones. The following paragraphs introduce several significant implications of innovative entrepreneurship for the labour market, as follows:

(1) The diversification and development of new products, processes, organization, and marketing methods in innovative firms could generate the creation of new businesses and new jobs.
(2) Innovation policies regarding entrepreneurship should support and stimulate the creation of new innovative firms to increase economic growth.
(3) Research and development activities can boost the creation of new innovative businesses, which in turn could generate new competitive jobs.
(4) Business innovation could generate the emergence of new economic sectors, with new classifications of jobs.
(5) Innovation activities may have an impact on the existing jobs in the labour market and among the circumstances that generate this state are the level of qualification, the working age, and the innovative technologies that need to be managed.
(6) The newly established innovative firms can implement innovative technologies that do not demand employment, leading up to a reduction in labour demand.

(7) Public financial support for innovation activities stimulates entrepreneurship and encourages entrepreneurs to exploit new innovative business ideas, which will create new jobs in the future.
(8) The firms that cooperate at the national and international level on innovation activities (with suppliers, customers, higher education institutions, or governmental organizations) can create a network with new projects and business ideas that will involve new jobs.
(9) The transition of innovative firms towards international markets could produce exchanges of experience between employees, access to new innovative technologies, and the emergence of new jobs.

The European business environment requires nowadays entrepreneurs who can identify and exploit new business opportunities. Business innovation is correlated with sustainability and competition. The next generation of entrepreneurs must concentrate on the innovative technologies that emerge worldwide. In addition to the establishment of new firms, the refurbishment of existing ones is also in demand at present. Innovation and entrepreneurship are both fundamental for economic progress and sustainable development.

4. Conclusions

Innovation and Entrepreneurship are both essential factors for economic progress and sustainable development. The comparative analysis performed in the article provided evidence on European business innovation. The evidence highlighted various gaps among European countries. As regards the number of innovative firms in Europe, countries such as Germany, Luxembourg, Ireland, Italy, and Sweden are characterized by a high number of firms that perform innovative activities.

The European countries where the firms received the highest level of public support for innovation have been the Netherlands, France, Finland, Belgium, Portugal, and Italy. Cooperation in innovation activities is also an important indicator related to business innovation and the results highlighted that the firms from the United Kingdom, Estonia, Belgium, and Austria cooperated the most on innovation activities.

R&D expenditure was also analysed and the results emphasized high values in Germany, Sweden, Austria, Belgium, and France. The firms from all European countries have recorded a low share of turnover from new or significantly improved products. Furthermore, the highest share of turnover from new or significantly improved products has been recorded in Slovakia. Subsequently, employment in innovative firms has recorded high values in all European countries, with important values in the Czech Republic, Austria, Finland, France, Belgium, and Portugal.

In nearly all comparative analysis of business innovation (innovative firms, firms receiving public support for innovation, firms co-operating on innovation activities, R&D expenditure, and share of turnover from new or significantly

improved products that were new to the market), Latvia, Hungary, and Poland have reported decreased rates of the indicators.

Furthermore, innovative entrepreneurship has major implications on the labour market. Innovative technologies can influence employment both positively and negatively. It can create new jobs and extend the business environment or it can affect the existing jobs.

The research is limited to statistical analysis, but the interpretations require an in-depth examination of policies and strategies that European countries have implemented for the development of innovative entrepreneurship. Future research concerning innovative entrepreneurship would be to identify and compare the European policies regarding innovative entrepreneurship.

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Digitalisation and Competition in the European Union

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Abstract

The new paradigm existing in the current economic systems generated in the context of processes defined as digitalisation transforms the way the competition processes take place and influence their legal framework. The preference for the study of these transformations in the EU is justified by approaching the processes of economic transformation through the concept of digitalisation, which defines the European strategy of adaptation to the conditions imposed by the new economies and the evolution of economic relations in cross linked system. Technological progress has always been in history not only the basis of economic growth, but also determined the transformation of the competition space. The adaptation to the new technologies involved both the reconsideration of the sources of competitiveness at company level and the transformation of the competition acts from a procedural and legal aspect. The digital information in these processes is crucial for the potential to bring huge benefits in terms of productivity, jobs and living standards. Consumers will gain access to new, innovative, and cheaper products. We need to build a healthy competitive environment that allows for the diffusion of innovation and brings gains from technology to individual prosperity. In our research we will analyse and propose solutions in the growing debates on how competition will work in digital markets with an emphasis on market power, concentration and data protection.

Keywords: digitalisation, competition, new economies, digital market, market power.

JEL Classification: A10, A11, A12, A13, D01, D04, D11, D40, D43, D47, D62, D85, D90, F02, F23, F44, F60, K20, K21, L10, L13, L40, L50, L51, O30.

1. Introduction

The New Economy based on technology is a key development of the recent years in our society. The related changes have to be taken into consideration, as the

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development of digitalisation has consequences on business and economics. Business models have to be adapted and economic models have to consider the new paradigm. Competition has to take into consideration the new concept of digital markets. Markets have to be newly defined, as the classic definition of markets in terms of competition might no longer be reflecting the developments of digital markets. Market power assessment needs as well to be reconsidered from the new perspectives of increased digitalisation. Concentration of markets in the light of the digitalisation process has to be assessed in a new perspective. Legal aspects will as well be of major importance in ensuring the appropriate legal and regulatory framework for digital markets and enhanced digitalisation. This research hypothesis is reflected in the present paper, trying to evaluate novelty elements when defining markets and market power in the context of enhanced digitalisation.

The acceptance of consumers regarding the digital change is as well an element that needs to be assessed in order to figure out the impact of digitalisation on business and on our society. Acceptance towards digitalisation can be increased if consumers are aware of its advantages. Benefits for consumers as well as challenges related to adapting to the digital environment have to be considered in order to gain a correct picture of this market phenomenon. The present research is also dedicated to these aspects of behavioural economics related to changes brought by digitalisation and their impact on the behaviour of market participants.

The present research analyses competition in digital markets, focusing on market power, concentration and data protection in the context of digitalisation. In order to assess the impact of digitalisation and to provide solutions, the present paper uses qualitative and quantitative research methods in an international perspective, evaluating the researched aspects at European Union level. The research methods include metadata, such as reports provided by specific journals, as Harvard Business Review on the topic of digitalisation and its impact in society. Furthermore, the relevant literature is reviewed in order to find previous approaches to this research subject, such as scientific articles (Science Direct, Elsevier) and books on this topic.

The Digital Economy and Society Index is proposed in the present research paper as an index measuring the impact of digitalisation on business and competition. This index is provided by the European Union, by Eurostat. The data assessed in the present research is provided by Eurostat, as this source of data ensures the possibility to assess reliable data in a comparative manner at European Union level.

Case studies related to the changes caused by digitalisation are assessed, for example the changes in the Romanian society, which occurred in this context. The changes are reflected by the analysis of the Digital Economy and Society Index, as provided by the European Commission. European Union Law, which is relevant for the sector, is as well considered, with case studies regarding important actors of the IT sector.

The research approach of the present paper considers aspects of business, economics as well as legal aspects and the social impact of the analysed topics, a

view that brings elements of novelty and an of in-depth understanding of the researched economic topics.

2. Problem Statement

2.1. The Impact of Digitalisation

As identified in the studied literature, digitalisation has a tremendous impact on defining business cycles, as it relies on technological development that becomes part of the society (Vogelsang, 2010). Simultaneously with the development of digitalisation, competition develops as well, so innovation is needed in order to face these challenges (Carlsson, 2018). The conceptual basis for studying digitalisation in the context of business cycles is represented by the Kondratiev cycle, which is related to inventions that change people's lives. The economic cycle based on the use of technology began in the 1990s, when the internet began to be used as a tool by users in the whole world. The digitalisation process is linked with both microeconomic aspects, such as new business plans or new business ideas to be operationalized, and with macroeconomic aspects, such as the impact on economic growth and employment (Vogelsang, 2010).

The European Commission has studied the impact of digitalisation since 2014 and publishes the newest developments in this sector, including country reports (European Commission, 2021a, 2021b). Data is made comparable and published by Eurostat (2021a, 2021b), ensuring a comparable view of the developments in digitalisation at European Union level. This very accurate observation is performed, as digitalisation proves to affect all business sectors, the behaviour of market participants and the daily life of consumers (Harvard Business Review Report, 2017).

2.2. Main Characteristics of a Digital Economy and Competition-Related Challenges

The relevant researched literature identifies the following characteristics of the digital economy: the network as an important element of the economy (e.g., the internet as a network), the use of IT services and technology, and the existence of digital goods (Vogelsang, 2010). As networks are part of the digital economy, network effects have to be taken into consideration when assessing this concept. Every additional participant to the network will raise the utility of all network participants. This explains as well the increased willingness to pay the network participants, considering the network effect. Network effects may occur as well by the fact that a customer buys complementary goods suggested by the platform he or she uses. Network effects lead to a market of a high degree of concentration (Calvano, Polo, 2021) in the context of platform economies.

The theoretical economic model illustrating transactions on markets with digital goods is the model of two-sided markets. In these markets, the utility of sellers increases when the number of buyers increases. On the other hand, the utility of

buyers increases if the number of sellers is high. Digital goods are subject to price discrimination, as they are featured according to the consumer. This is an important aspect to be considered from the point of view of competition. Concrete forms of this price discrimination might be customisation, versioning and selling different versions of a product at different groups for different prices. Bundling is as well possible as a commercial practice in digital economies, and this as well is an anti-competitive behaviour. The market structure of digital economies may allow a tendency to market power, which is an important competition aspect to be considered in the process of digitalisation and of network-based economies. The fact that strong market dominance or even monopolies may occur in the IT sector is proven by the development of Microsoft to a position of super-dominance, with a market share of 96% in former times (end of 1990s). Market power may be assessed by means of the Hirschman-Herfindahl-Index (Shepherd, 2018). According to the studied literature and given the structure of markets in digital economies, the theories applying to these markets are the Monopolistic advantage theory, the Oligopolistic reaction theory, the Network approach and Coase's Theory of internalisation (Vogelsang, 2010). The relevance of network effects related to the new platform economy is confirmed in the specific literature (Copenhagen Economics, 2021).

2.3. Tools for Measuring Digitalisation

An index used in order to measure aspects related to digitalisation is indicated in the literature to be the Digital Opportunity Index, focusing on modern services such as mobile telephony and the use of the internet (Vogelsang, 2010). The European Commission nowadays measures the Digital Economy and Society Index (DESI) in order to reflect aspects related to digitalisation in a concrete manner (European Commission, 2021b). This index is provided by Eurostat (Eurostat, 2021a) and will be described in the Methodology section of the present paper.

3. Research Questions/Aims of the Research

The present research analyses competition in digital markets, focusing on market power, concentration and data protection in the context of digitalisation. Concentration of markets in the light of the digitalisation process has to be assessed in a new perspective in order to ensure the appropriate legal and regulatory framework for digital markets and enhanced digitalisation. This research hypothesis is reflected in the present paper, trying to evaluate novelty elements when defining markets and market power in the context of enhanced digitalisation. The acceptance of consumers regarding the digital change is as well an element that needs to be assessed in order to figure out the impact of digitalisation on business and in our society. Acceptance towards digitalisation can be increased if consumers are aware of their advantages. Benefits for consumers as well as challenges related to adapting to the digital environment have to be considered in order to gain a correct picture of this market phenomenon. The present research is

also dedicated to these aspects of behavioural economics related to changes brought by digitalisation and their impact on the behaviour of market participants.

4. Research Methods

Social sciences, to which economics belong, express the tendency to rather use quantitative methods in research. According to the newest developments, in current times the researched literature argues that quantitative methods are really the most appropriate to reflect economic issues. This is why nowadays qualitative research methods in economics are encouraged (Carlsson, 2018, p. 432). Based on this judgement, the present paper emphasizes on the use of qualitative research methods in its assessment.

The specific literature is reviewed in this perspective of qualitative research methods. Books on this topic as well as scientific articles (Science Direct, Elsevier) have been reviewed. Results of metadata regarding the impact of digitalisation in society are being assessed in the current paper. The results of the consulted report "Competing in 2020: Winners and Losers in the Digital Economy" published by Harvard Business Review based on a survey with 783 respondents were used. The respondents were senior managers, executives and board members with a role in decision making related to digitalisation from industries like manufacturing, technology and financial services around the world.

In order to provide a complementary quantitative perspective too, the Digital Economy and Society Index is analysed in the present research paper in order to measure the impact of digitalisation on business and competition. The index is provided by the European Union and the analysed data is provided by Eurostat, in order to ensure reliability and a comparable view at European Union level. This indicator provides information about the change caused by digitalisation in the European Union at the level of households and the level of business sectors (Eurostat, 2021a). The indicator reflects the access to digital technology, the use of this technology and the impact of the use of technology from an economic point of view. DESI Country reports provided by the European Commission are as well analysed in order to prove the research hypothesis by case studies, such as the case of digitalisation in Romania.

The proposed research approach of the present paper combines aspects of various relevant fields, such as business, economics, European Union policy and European Union law in order to emphasize the wide range of consequences of digitalisation. The cross-disciplinary view ensures novelty, of an in-depth understanding of the researched economic topics and a valuable contribution to research, given the current international context of digitalisation and its increasing importance.

5. Findings

5.1. Results of Metadata Regarding the Impact of Digitalisation in Society

The results of the consulted report "Competing in 2020: Winners and Losers in the Digital Economy" published by Harvard Business Review are based on a survey with 783 respondents. The digital aspect is important for many companies, as 61% of the respondents indicated hybrid structures of the company, including a digital element. Given this structure, digitalisation has an impact in business and economics, as it influences the business model and the structure of the company (Harvard Business Review Report, 2017).

Competition aspects have to be considered given this development. Markets need to be defined in a new manner, as the geographical component becomes less important. The access to customers from around the world is going to be more facile. Access to customers means as well that the customer has a higher number of alternatives, so the company has to face more competition than in the former era. Another important research result is related to the subject of big data. For companies being active in a digital manner, big data is an important issue. They use big data and make it possible to use big data. Interpreting big data is difficult without the use of artificial intelligence, as it would be difficult to assess a huge amount of data with human resources. The increased use of artificial intelligence brings as well challenges related to job losses or to unemployment as a consequence of replacing human workforce with automation and artificial intelligence, for example in customer services or in financial services (Carlsson, 2018). On the other hand, the use of technology has a positive impact on productivity (Vogelsang, 2010) and is thus profitable for business owners.

5.2. Solutions for Platform Economies

Companies acting in the digital economy have to adapt their business models to this new type of international business or to create new business models. In order to be successful on the digital market, companies try to minimize their costs in the market-entry-phase and to achieve growth based on network effects. In this case, the business owner calculates and accepts negative registration fees for his or her platform in these phases. This business strategy may be used when financial resources for the business are limited. Another option would be to try to achieve as much profit as possible in the market-entry-phase and in the growth phase, by having positive registration fees, to balance the initial costs that were high and that were paid in advance by the business owner. This decision is a typical example of trade-off that has to be considered (Vogelsang, 2010).

5.3. Digitalisation as a Component of European Union Policies

The European Commission has a focus on digitalisation in its current policies, as it a field with strong, cross-sectional impact. This focus in digitalisation gets a concrete expression in the initiative of the European Union to promote the Digital

Single Market as a priority of European Union policy (European Commission. 2021c). Since 2014, the European Commission has performed a monitoring of digitalisation by calculating the Digital Economy and Society Index, which is presented in Figure 1. Digital Economy and Society Index.

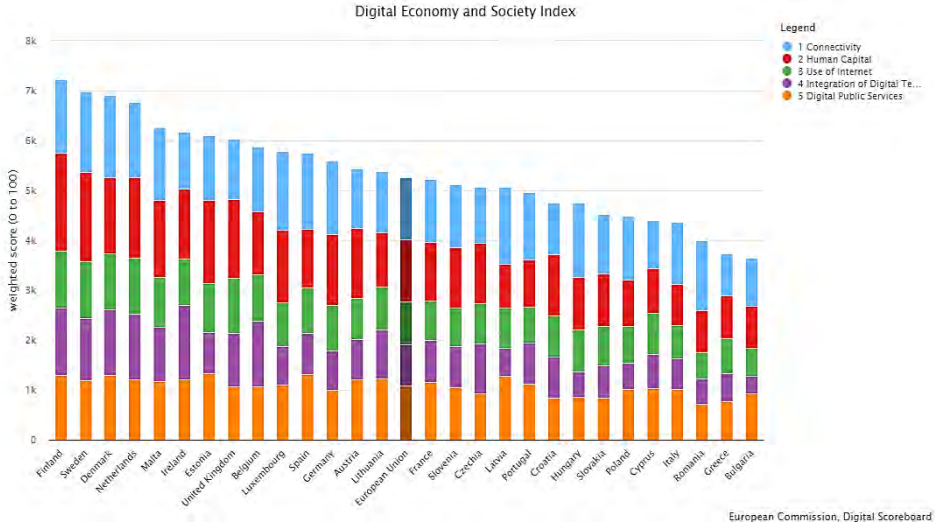


Figure 1. Digital Economy and Society Index

Source: European Commission website, European Commission (2021b).

Digitalisation transforms the behaviour of people, of consumers but as well of businesses in the European Union. Communication becomes more facile. By offering various communication alternatives to the consumer, competition increases in the digital sector and in the digital economy (Vogelsang, 2010).

The monitoring performed by the European Commission allows an analysis of the case of Romania regarding digitalisation. Although Romania has a high connectivity, the digitalisation process in not very developed in Romania. It would be a progress if small and medium-sized enterprises used digitalisation in an enhanced manner. The digitalisation of the public administration would as well contribute to better results regarding digitalisation in Romania. Although Romania has a high number of well-educated IT professionals (place 5 in the European Union according to the DESI Report for Romania), the practical use of the internet is not as high as expected. Romania is on the 27th in the European Union regarding the use of technology in small and medium-sized enterprises, and this represents a field where improvement is needed (DESI, 2021).

The current focus of the European Union on the issue of digitalisation is related to the fact that this field has a high impact from the perspective of data privacy and data protection. The owner of data is becoming more and more powerful. Big data may be used and interpreted with the help of artificial intelligence. The single choice of each user might not be of high importance, but owning all this data related to consumers around the world becomes important. It might help to analyse

and predict consumer behaviour on a large scale. This is why legal, economic and policy aspects have to be assessed together in order to figure out the big picture of this topic. Data protection becomes very important in the current context of the Internet of Things and of a world connected by devices, in which the choices performed by users via the internet can be monitored without even knowing it.

By its network effects, a digital economy is an economy allowing concentration and thus a certain degree of market power (Calvano, Polo, 2021). Platform economies may lead to platforms having a certain degree of market power given by the fact that they become dominant on the digital market. The views regarding market power are different in European Union competition law and in American Antitrust law (Vogelsang, 2019). These differences are important when assessing competition issues on digital markets, as this sector is dominated by American IT giants. In the ruling of the European Union Court of Justice these different approaches as well became obvious. At European Union level there is a common view regarding the definition of market power and of concentration. These aspects are established in the provisions of European Union competition law, with the European Commission as a supranational competition authority of the European Union, ensuring the monitoring of this sector.

The role of the European Union in establishing an appropriate framework for the digital market becomes obvious in the principles of European Union policy and of European Union law regarding data protection, which is a very important aspect that must be considered in the context of digital markets and big data. This policy direction shows that data protection is an important aspect that must be considered by actors of the digital markets.

Market power can be measured by using the Hirschman-Herfindahl-Index (HHI) (Shepherd, 2018). Classical approaches regarding the assessment of market power are still valid when assessing digital markets. Nevertheless, possible limits using this index as an expression of market power in digital markets might be given by the fact that in order to calculate the Hirschman-Herfindahl-Index, it is necessary to know all the market shares of the involved actors of the market. This might be a problem when assessing digital markets. Furthermore, innovation on this type of market is very rapid. It is possible that companies having a relatively small market share become powerful in the sector by developing new ideas and new technologies in a short time.

In order to have control over market power, competition law ensures an ex-post control while the ex-ante control is possible due to regulatory affairs. An ex-ante control of market power is as well ensured by competition law in the field of mergers and acquisitions. All these measures can be seen as solutions for providing a fair business environment for the digital economy. Competition policy and regulatory affairs should be used complementarily as tools for ensuring competition in the digital market. A proper regulation of the digital economy sector might be a solution, as it proved to be in regulating markets such as telecommunication, broadband and mobile services. A solution to deal with the challenges related to the new digital economy and the platform economy that

defines the current times would be ensured by a proper regulation of the Digital Single Market of the European Union.

6. Conclusions

As the Single Market of the European Union was an important step in consolidating the European Union, the currently promoted Digital Single Market marks the new era of new economy based on technology and digitalisation. This transformation comes with new challenges for the business environment but also with opportunities for new business ideas and innovation. Consumers benefit from these new business models. Consumer behaviour is subject to these transformations. New dimensions like data protection, market power in the digital era and concentration in platform economies have to be considered. A solution for having control on market power in these circumstances is that of competition policies and regulation that work together in ensuring a fair digital environment. The research results of the present paper are of high interest given the newest developments in the field of digitalisation in the European Union, so that they can be further developed in future research projects.

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Restarting COVID-19-Affected Economies

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Abstract

During our road through life, the economy accompanies us, showing us that it cannot be controlled, only understood and, in a way, predictable. This could be applicable for cyclical crisis. But how could we say the same about non-cyclical crises? Did the history show us patterns? Did the history give us predictive instruments? Could we say that we could act predictively, not just correctively upon this kind of crisis, as economists and economic agents who use economics as a component of our life?

The actual crisis, the non-cyclical crisis caused by the COVID-19 uncontrollable spreading, showed us, once again, that its kind of crisis cannot be predicted.

A non-cyclical crisis, such as the COVID-19 crisis, involves fast and precise corrective instruments, but, paradoxically, also gentle and diffuse corrective instruments. The analysis of the best mix of policies and actions, in the current context, has the potency to exploit the socio-economic mechanism in its true beauty. On the other hand, predictive instruments cannot be put in place in such a context.

Taking into consideration two important hypotheses, this study will seek to identify, propose and debate possible directions for restarting the economy, with a special focus on actions related to human capital.

The target of the study will further bring in discussion the potency of socio-economic actions, in the entire new world mindset, considering especially the actions related to Human Capital.

The study will consider the Romanian context, but not separated from international / global / European effects.

Keywords: COVID-19, human capital, work from anywhere, opportunities, strategies, mix of corrective actions.

JEL Classification: J24, J28, J81, H12, I30.

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1. Introduction

The World Health Organization (WHO) confirms, in March 2020, the state of pandemic, caused by COVID-19. The most severe pandemic of the last century was in 1918, during the Spanish flu. About 500 to 3 million people were infected, a third of the world's population at that time. Worldwide, 50 million people died.

Many voices say that the whole context, as well as the crisis that results from it, caused by the COVID-19 pandemic, is the most aggressive shock of the world economy. Although in the context of a premature state, we can already discuss some main arteries that will make the body of the COVID-19 crisis a strong and solid one.

On one hand, we can discuss direct and indirect effects.

On the other hand, we can discuss effects on the social system, on the economic system, on political welfare.

We can also discuss the effects on national production, the effects on the labour market, the effects on the real estate and construction market, on the business environment and on all the economic markets that drive a nation's economy.

The opening or not of the economy, quantifying them or at least understanding their possible effects are also aspects with huge potential to take the analyses further.

We can discuss short, medium and long term effects, or impact on a time scale.

The categories of effects represent a fertile field of expertise, and their combination depicts economic thinking, in its most complex valences.

Regardless of the mix of characteristics considered, in the study of the impact of the period we are living globally, in view of the spread of the pandemic caused by COVID-19, one aspect is certain.

There can be no bad decisions, as long as action is taken in this direction. Economic systems must be monitored, analysed and supported by a mix of economic, political and social actions, which have the power to reach beneficial effects even in the short term, for the population.

The main objective of the paper is to bring a contribution, in the literature, on the analysis of the impact of the COVID-19 period on Romania, in a global context.

The secondary objective is to identify, propose and debate possible directions for restarting the economy, with a special focus on actions related to human capital.

The main difficulty in dealing with such objectives is that we are still living in the epicentre of the problem. The direction can be changed at any time. The consequences can change from one second to the next, as well, in line with the direction of the crisis. The aspects presented in this paper may lose their significance, through the interaction with the future reality.

The proposals and analysis in this paper have the characteristic (risky for the author) of being built under the rule of extremely perishable information. But even in this context, the analysis must exist. Proposals must exist. Actions must not be delayed. Only in this way will we be able to overcome - not only in terms of time - this crisis.

2. Research Methods

From the range of existing research methods, this paper was made by documenting in the literature, by going through some of the most relevant papers from the main flow of national and international publications, by identifying and comparing some examples of current practices and through a quantitative analysis in the form of a questionnaire.

Hypotheses

A. The Impact of Human Capital on the Labour Market

In terms agreed by the literature, human capital encompasses those capabilities of individuals that are in a certain mix in each individual, which remain the same or increase in complexity, in any social environment the individual is placed and that can be capitalized on the labour market, in exchange for economic resources of any kind.

But to what extent is the labour market influenced by human capital?

We can bring even more precisely the definition of human capital to the calculation realm. According to the literature, the most agreed option of human capital aggregation would be that which designates a part of educational capital (formal, school and connected school training) and a part of biological capital (abilities of individuals, representing their biological endowments; biological endowments are one of the most important factors influencing the individual's ability to adapt).

Going in more detail with the two measurable components specified above, we can already draw some aggregate indicators, which also represent the measurement directions of the respective components.

Thus, educational capital, as part of the major component of human capital, can be measured by the following indicators: Preventive health; Formal education, from the point of view of the results of compulsory in-institutional schooling; formal education, in terms of results of optional study documents; Financial culture - measurable by the allocation of financial resources among different areas of consumption of goods and services; Proactive health culture; Formal education, from the point of view of the cult of continuous study.

On the other hand, biological capital, as a major component of human capital, can be measured by the following indicators: social skills, cognitive skills, practical skills, adaptive skills, corrective health and others.

Obviously, each of those discussed above, in turn, have different other indicators, at different levels, but still very relevant.

As the purpose of this paper is not to study and demonstrate the strong link between human capital and the labour market, this section will only be a hypothesis of the paper and will not highlight, through any quantitative or qualitative method of work, how the cause-effect relationship between human capital and the labour market is measured.

However, according to the literature and to economic intuition, we can say (and we can use this statement, below, as a working hypothesis): Human capital is one of the factors with the strongest influences on the labour market.

For example, we take the aggregate indicator of cognitive ability. We assume an employee in the field of IT & Telecommunications. The way they relates to their lucrative activity, from the point of view of accumulating new information and processing it, can be defining for the way they will develop, both professionally and financially, in their career.

At every step, new technologies appear, both reactive and proactive to reality. Constantly, our employee in question must be anchored both to the needs of society and to the technical tools for work (new programming technologies, new devices, etc.). In turn, our employee in question must also inspire the clients to whom their work is addressed, to increase their degree of receptivity and cognitive abilities, in order to ensure the resilience of their work over time. Inspired by knowledge, adaptation, they will provide clients with long-term benefits, will know them and will guide them through the applications they create.

It is easy to understand that their cognitive skills will increase the quality and complexity of their work and, implicitly, the impact on the company. Through this, normally, professionally and financially they will grow. Extrapolating, for the entire IT and Telecommunications labour market, the impact of cognitive skills (or, rather, their measure) will decide the meaning and scope of the labour market in that field (Mincer, 1981).

In the current context, in which much of the implications for reality go back to the pandemic caused by COVID-19, the valences of human capital on the labour market are becoming even more stringent. The main motivation was that in this whole context of reality, the individual is assiduously required to adapt their characteristics.

At this level, we can discuss both about adaptation in the sense of basic functions and about adaptation in the sense of regaining a certain level of well-being.

In the category of adaptation to the functions required for life, we can provide the following examples: maintaining the workplace, maintaining personal health and that of the beloved ones, maintaining the health of others, community care, maintaining civic safety, maintaining the ability to procure food and goods, and of basic subsistence services, etc.

In the category of adaptation in the sense of regaining a certain level of well-being, the discussions have, however, increasingly fine valences. We can discuss here about different values such as: satisfying the need to socialize, satisfying the need to belong to a group, satisfying the needs of recreation, travel, knowledge, etc. Among them, as others authors suggest, the most important investments in Human Capital are education and training (Becker, 1994).

In this category, especially in terms of the pillars that underlie the changes in people's daily lives, we can introduce the newly increasing concept of working from home and, further on , working from anywhere - a concept that, in order to maintain

correspondence with the international specialized literature , will be referred to as "Work from anywhere".

Given the impact that human capital has on the labour market, which, in turn, shows incredible direct and indirect effects on the entire economic system, next we will discuss a possible strategy to improve the current situation caused by the existence COVID-19 epidemic, especially through instruments directly influencing human capital.

One of these is the exploitation and use for all of the "Work from anywhere" tool.

B. The Concept "Work from Anywhere"

Factor of Major Influence of the Human Capital

The concept of work from anywhere is a concept derived from the concept of remote work, which, however, before the pandemic was reflected, in most cases, in work from home.

The concept of working from home, remote work, or, even more, the concept of working from anywhere, represented, before the pandemic, a great benefit of the sector of activity or even of the employer granting it to the employee. Employers were in no hurry to offer these types of benefits.

The costs seemed easy to guess. Many companies did not trust that employees would comply with their work obligations, in the sense of efficiency and effectiveness.

Working from home is, therefore, a good thing to be hunted by employees. This fact has been preserved throughout the pandemic (and is still preserved in certain sectors of activity, especially in terms of the security it gives to the individual, in the current context). However, at the level of the labour market, the saturation of remote work is beginning to be established.

The motivation was that distance work deprives the individual of a wide range of activities that provided both the basic functions necessary for cognitive resonance with the environment and activities that provided certain levels of well-being.

The most relevant way in which these issues can be discussed is to interrogate reality - or a relevant component of it. Therefore, the basic body of the paper is a quantitative research, in the form of a questionnaire. The questions chosen in the questionnaire refer, for the most part, to questions regarding the characteristics of the concept of “work from anywhere” felt by the sampled population, as well as to their context.

The number of respondents to the questionnaire was 44 respondents, all employees, in areas such as: IT & Telecommunications, Education and Culture, Public Institutions, Engineering. The data of the questionnaire were collected between October 1, 2020 and October 30, 2020, so that we can consider relevant the answers for the period of the COVID pandemic-March 2019-October 2020.

About 80% of the respondents said that during the pandemic they did not feel threatened by job loss. A share of 10% of the respondents confessed that they felt threatened by losing their job, mainly due to the COVID-19 pandemic, and another

10% confessed that they could not realize at this time whether or not they felt threatened by job loss in the context of the COVID-19 pandemic.

All respondents who stated that they felt threatened by job loss in the context of the COVID-19 pandemic stated that they had intrinsic reasons to fear and were aware of this threat; they said they feared considerably. All respondents who stated that they had not noticed this threat so far, said that at this moment they perceive this threat more in a superficial way, largely influenced by offline and online news.

A proportion of 36% of respondents stated that their work was affected by the existence of the COVID-19 pandemic. The rest of the respondents stated that they did not feel any change in their work, due to the onset of the pandemic.

However, 55% of respondents said that they work in the field of IT & Telecommunications, an area that, pragmatically, has folded very well in the context of the COVID-19 pandemic. The activity flourished in the field of IT & Telecommunications, especially in view of the digitalization needs imposed by the new pandemic context and the concept of "social distancing", which strongly impregnates all solutions in order to stop the spread of the pandemic. Another 27% of the respondents stated that they work in Engineering, and another 9% of the respondents stated that they work in Education and Culture, respectively that they carry out their activity in Public Institutions.

About 90% of respondents said they worked from home, even for a day, at the initiative of the employer, during the COVID-19 pandemic. The same respondents, 80%, also stated that they worked from home, even for a day, on their own initiative, during the COVID-19 pandemic, until this moment.

All respondents who stated that they either did not have the option to work from home, at the initiative of the employer, during the pandemic, or that they were not given the opportunity to choose whether to work from home or not, stated that they wanted to shout this desire to work from home.

Using a scale from 1 to 10, respondents answered, in a fairly large proportion (37%) that they were extremely satisfied with working from home (10/10), from March-October 2020. Another 27% of those respondents answered with a measure of 8/10, and 18% of them answered with a measure of 9/10, regarding the satisfaction of doing paid work at home, during the COVID-19 pandemic, until October 2020. Around 9 percent of respondents stated that working from home was unsatisfactory (6/10) or even unpleasant (3/10).

To this, the respondents who answered in negatively to the question about working from home, for at least one day, in the past period, were asked to avoid answering this question.

A majority of respondents said they would like to work / work longer at home.

Among the reasons why respondents were satisfied with working from home, the strongest argument was that working from home, insofar as it was experienced during the COVID-19 pandemic, gave respondents the advantage of eliminating time spent in traffic in order to get to and from work. A share of 81% of respondents was firm about the benefit of working remotely.

The majority of respondents said that working remotely gave them a sense of security in the context of the pandemic. They consider this to be a major argument for being satisfied with working remotely.

Also, the possibility to organize their work schedule (in terms of efficiency) in a much more personalized way and the fact that working remotely gave respondents the opportunity to work from anywhere, were classified as secondary reasons for the arguments for which respondents said they were satisfied with the remote work.

A relatively high percentage of respondents (36%) stated that they felt, in the context of working remotely, that they had saved on various costs (transport, lunch, etc.). They said that even this fact can be considered an argument in favour of working remotely.

In a proportion of 18%, respondents stated that reasons such as feeling a sense of security, regardless of the context of the pandemic (flu epidemics, colds, trafficking, etc.), the pleasure of spending more time with family, increasing efficiency through the fact that time is no longer wasted with work-related activities are arguments in favour of working remotely.

On the other hand, when asked why they might be dissatisfied with working from home, a large proportion of respondents (81%) said that being with colleagues helps them to be effective (questions are answered faster meetings are much easily managed).

Also, 63% of the respondents stated that they are dissatisfied with the fact that they no longer move and that this condition guides them to feel, from a physical point of view, with a much lower efficiency.

Another relatively high percentage of respondents confessed that they are dissatisfied, in the context of working from home, with the fact that they end up having a chaotic lifestyle. I can no longer distinguish between office and home. Likewise, the respondents are dissatisfied, in the context of remote work, with the fact that they do not have the necessary working conditions, similar to those of the office of the employing companies (desk / good chair / monitors / quiet).

Other arguments, such as the fact that they do not feel comfortable with online meetings - both logistically and in terms of the commitment of different colleagues in the meeting, and the fact that they have high expenses with consumables (water, electricity, etc.), represent to a smaller extent, but to be considered, arguments due to which respondents may be dissatisfied with working from home.

As can be seen, most of the responses of the participants in the questionnaire guide the conclusions to some of the perceived benefits of working from home, including, most prominently, working from anywhere.

Most of the respondents stated that they wanted / would have wanted to carry out their activity, during the work period, from the sea, renting an apartment / villa (72%). Another relatively large part of the respondents (36%) stated that they wanted / would have wanted to carry out their paid activity not from home, but from different relatives.

Another large part of the respondents (27%) stated that they wanted / would have wanted to carry out their remunerated activity either from the mountains or from abroad, renting an apartment / a cottage / a villa.

A relatively small proportion of respondents (9% each) stated that they wanted / would have wanted to carry out their paid work either from the Hubs or from various other spaces intended for work in conditions of "shared resources ".

Asked to measure, on a scale of 1 to 10, the extent to which the first benefits of working remotely is the ability to work from anywhere, 55% of respondents said they agree with this statement in considerable proportion (10/10; 9/10; 8/10).

Asked to measure, on a scale of 1 to 10, the extent to which they agree with the statements that Remote Work still offers the advantage of increasing labour mobility / flexibility in the long run, respondents said they were rather undecided. In a proportion of 70% they opted for sizes of 7/10 and 8/10.

A considerable part of the respondents, approximately 80% of them, stated that, if they could afford it, it would be a strong advantage of remote work to be able to work alternately from different places than from home (mountain, sea, hub, parents, other relatives, abroad).

Similarly, a considerable part of the respondents who experienced, even for a day, working from home during the COVID-19 pandemic, stated that they raised the issue of remote activity from places other than home (72%).

Asked (on a scale of 1 to 10) whether, in the current context, the possibility of working from anywhere is one of the aspects with great potential, so that the consequences of the COVID-19 pandemic, in terms of working conditions, are tamed, the respondents did not hurry to position themselves firmly / agree with it. Only 37% of respondents agreed with this statement. (7/10, 8/10, 9/10, 10/10).

Also, asked to what extent do they agree with the statement that from certain points of view, the new world order, in the context of the pandemic caused by COVID-19, may be a start to renegotiate how we relate to digitization, the phenomenon of digitization becoming the new normal, the respondents did not agree as strongly as expected. Most respondents moderately considered that they agreed with this statement (55% of them gave 6/10 and 7/10 marks to this statement).

In the context of the current pandemic, caused by the emergence of COVID-19, remote work can be used against or for the benefit of the employee. Even from this point of view, the individual is required to activate the instinct to adapt and to model their context, as far as possible, so as to be on the winning side of the barricade. Remote work is a reality today. A reality with a strong impact, but also with various effects, at all levels.

As others studies have shown, most of the interviewed agents, as related to the discussed topic, have shown interest in this type of activity, i.e., fully remote. Most of them have shown interested especially because it gives them the possibility to spend more time with children/ grandchildren (Chung et al., 2020).

The extent to which from the multitude of variables we will be able (both at Community level and at individual level) to choose the opportunities and to take advantage of them, in order to increase, to some extent, the satisfaction in this

uncertain and unhappy period, depends on how we will understand, regardless of the level at which we discussed (public, private, physical, legal) that we are dealing with a constantly changing situation, and that adaptation and survival instinct require us to be receptive, open and learn to embrace better or worse things.

3. Findings – Tools for Positive Management of Human Capital and Possible Directions of Intervention

In the context in which the concept of "Work from anywhere" seems to have resonated well with the perceptions of individuals, how can it be preserved further and used in a mix that is prolific to the economy and to the well-being of the population?

Rules on social distancing have not only revealed new economic concepts, but have revealed new values of human capital, which we can preserve and shape in the future in the interest of the same economic system.

The pandemic caused by the existence of the COVID-19 virus and its assiduous spread, showed another face of Romania. A girl from Romania who, beyond the certain problems regarding the human capital and the way of sustaining it with public money, is able to adapt in the context of social distance. She is able to withstand a new world order, oriented towards an era of digitization, of remote automation, in which the individual can still exist, even if the most important pillars of their previous life have changed.

Its newly identified valences must continue to be used, as a real gain today.

In the educational system, considering that we manage, slowly but surely, to continue the teaching and educational activities 95% online, we could reach an even finer digitization.

There could be dedicated applications that not only facilitate communication between the two camps, but which, moreover, act with viable and predictive tools of the learning process.

These applications may have interactive components that allow the learner to become emotionally involved with the subject in learning. It could be, in the same sense, that these interactive components allow the broadcasters to propose related learning methods, which will bring apprentices with a global image on the learning process.

A great lack of remote activities is the social component.

In this regard, no argument can be made to sweeten the negative effects on the emotional side of the individual, in view of the lack of social activities and the longing for socialization.

But, in the medium and long term, once the situation of spread will stabilize, we can discuss about a hybrid system, unconditioned and unforced, which is recommended by its competitive capabilities compared to the previous system, fully physical.

Secondly, as history has shown, automation was never a bad idea. Digitization and automation do not mean depriving individuals of the right to work, by replacing them with equipment, while reusing the resource in a more important area and

involving it more and more. Thus, the evolution should be sustained not only by the appearance of machinery, but also by the fact that the human resource will be able, in time, to be built in an even more qualitative resource.

Therefore, the current context of working from home not only shows its beneficial values in presenting tools that can make real changes in the field of learning. However, it also shows its valences in the fact that, willingly or unwillingly, individuals were forced to develop and digitize the socio-economic system even more intensely.

The public institutions were obliged to put forward quickly the development processes of the information systems, meant to print a new, digitized and automated character of the institutions, in relation to the persons and groups of persons to whom they address.

Private companies have also been forced to quickly put forward the development processes of the information systems in the pipeline and to renew or adapt the old ones.

The IT industry has prospered during this period and will continue to do so in the future, and the effects of this will generate even more diligent involvement in the labour market, which will be beneficial to everyone. First,, for the population actively involved in the IT market - because there will be a demand for work - and second, through the fact that the consumer population of the IT market will develop more and more in various directions.

Thirdly, and with great importance, we cannot give full importance to entrepreneurship. Indeed, direct damage is boundless. Here we are talking about small, medium or even large-sized companies that operate and produce services with a 100% physical component – both production and consumption. We are obviously discussing about tourism, HORECA, entertainment, culture (theatres, exhibitions, etc.), and many other aspects directly related to man, both to be produced and to be consumed.

On the other hand, we are talking about identifying new entrepreneurial areas. Need teaches us and pushes us to grab new paths and new ways. The need for the pandemic has revealed many topics with huge entrepreneurial potential. The extent to which the damages and gains will be balanced depends on the one hand on the economic and fiscal measures, meant to sweeten the suffering of the companies affected by the COVID-19 pandemic, and, on the other hand, on the openness of the population with entrepreneurial inclinations and capacity. Economic and fiscal policies provide them with a suitable framework to manifest.

The possibilities, in this direction of analysis, are unimaginable. The power of subject analysis and policy action is immense. It is up to the literature to bring them to the light of the public and to the decision makers to give them due importance.

4. Conclusions

In the current context of the pandemic caused by the emergence of COVID-19, developments are uncertain. The advantages, disadvantages, fears, benefits, are in a continuous oscillation, both in terms of directions and in terms of content.

The community opinion is depressive, in a permanent state of panic and fear of the future. Which, to some extent, seems natural in the light of the current experiences.

However, the stages of pandemic manifestation offer, at every step, new opportunities for adaptation – both for the individual and for community; both private and public; both viewed at the level of individual and at the level of economic agent.

Among these opportunities, in the direction in which social distance affects the labour market, is the new concept of "Work from anywhere". The concept of "Work from anywhere" is becoming more and more a reality in the context of digitalization more and more necessary.

The extent to which from the multitude of variables we will be able to choose the opportunities and to take advantage of them, in order to increase, to some extent, the satisfaction in this uncertain and unhappy period, depends on how we will understand, regardless of the level at which we discuss (public, private, physical, legal) that we are dealing with a constantly changing situation, and that adaptation and survival instinct require us to be receptive, open and to learn to embrace better or worse things.

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Creative and Cultural Sectors during the COVID-19 Pandemic

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Abstract

Year 2020 brought new challenges for the cultural-creative sectors, mostly due to the physical distance requested in order to limit the spread of COVID-19 pandemic. These challenges have important effects on managing crisis and induced propagated complex changes within these sectors. The COVID-19 pandemic has generated and amplified challenges that economic and social sectors have to deal with in order to provide proper and effective answers even in a short time. At the same time, they also offered some opportunities for further medium and long term development. The paper aims at identifying the main characteristics of this dynamic and turbulent environment including social media and communications management. Due to the COVID-19 pandemic, many of the activities of these sectors have suffered and thus largely challenged the public, social and cultural institutions that have been forced to find new ways to reach and capitalize the technological and communication benefits of digital platforms and more complex networking functioning better within the virtual space. In addition, the paper intends to offer more alternatives asking for a reflection and dialogue in order to find better solutions for the complex issues related to people's need to access cultural and creative sectors before and after COVID-19.

Keywords: digital platforms, cultural-creative sectors, COVID-19.

JEL Classification: H41, O30.

1. Introduction

Prior to the COVID-19 pandemic, in Romania the cultural and creative sectors (CCS) were characterized by some fragile and fragmented structures at least from

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an organisational point of view. The COVID-19 pandemic has created numerous negative complex effects in many areas of society in general, as well as in CCS in particular. CCS are in the process of setting new challenges, both for the workers of these sectors and for their public with important financial implications. Isolation was implemented in all states all over the world, and thus a lot of negative effects emerged, affecting the cultural and creative sectors. The crisis caused by COVID-19 has been intense and it led to the application of many digital mediation techniques (Nobre, 2020).

Accelerating digital transformations will benefit economic, cultural and social sectors and institutions in the future. It is also estimated that, in the medium and long term, the acceleration of automation processes will lead to a decrease in the number of people working in the CCS (Ponte, 2020).

2. Problem Statement

In the first months after the pandemic shock, governments, public and private institutions tried to develop various measures to face the negative effects caused by the pandemic. This form of crisis management is unprecedented from a historical point of view. It offers various opportunities to examine the preferences of decision makers for a mix of proper political actions. The current crisis is particularly critical for the creative and cultural sectors due to the sudden and unexpected loss of income. Some institutions may benefit from public support, such as libraries, museums, theatres, but may have to face severe budgetary difficulties. CCS include both large multinational companies, but also small companies and independent professionals for this sector. Thus crisis creates a structural threat to the survival of companies and workers involved in cultural and creative production. In the context of the cultural and creative economy, cultural and creative sectors have a key role for society. Cultural availability contributes to people's mental health. Cultural institutions created different methods in order to offer them online.

3. Research Questions

In order to provide a high degree of satisfaction during the lockdown period, cultural institutions adapted to the new consumer behaviours of cultural services and digital social channels. Consistent with the goal of our paper focusing on understanding how cultural institutions manage to deal with these important issues, our research highlights the impact of social networks on cultural institutions and consumers. Consequently, *the main research questions* are:

- What are the main contact points that characterize the socialization strategy adopted by the cultural institutions?
- To what extent does the public interested in consuming cultural services interact with the institutions that produce these services?

4. Brief Literature Review

The term creative economy was first used in 1998, in an official report published by the *United Kingdom's Department of Culture, Media and Sport*. The report states that creative industries are those that deal with skill, creativity and individual talent with a high potential to generate creative jobs (Higgs et al., 2008; Maulana, 2020). CCS support a smart, sustainable and inclusive development. Although there has been a growing trend of CCS in terms of value added and number of employees, prior to the COVID-19 pandemic crisis these areas have suffered from endemic vulnerabilities. More than ever COVID-19 invites to join the efforts generated by the private sector, civil society and the governments highlighting the importance of the creative economy and CCS as part of a global recovery (|UNCTAD, 2020). The term of *"creative economy*" was also used in 2000 by Peter Coy and in 2001 by John Howkins. It involves a transformation of world economy towards an economy based on the "*power of ideas*" (Coy, 2000).

In his 2001 book, "*Creative Economics: How People Make Money from Ideas*," John Howkins (2001) described the creative economy as a new way of thinking that revitalizes manufacturing, retail, art, design, and innovation, entertainment, with an emphasis on the abilities, skills and talents. Cultural economics gather industries that involve creativity and thus being closely related to intellectual property (Throsby, 2001; Onea, 2020).

Digital platforms are a way to organize human activities, as well as social, political and economic activities (Tan et al., 2015). Digital platforms have significantly contributed to the improvement of several industries, such as transport (*Uber* case), software development (*iOS, Google*) and hospitality (*Airbnb*). The prominence of this phenomenon and the dependence on ITC capabilities have led to an amplified interest for research on digital platforms among researchers in the field of Information Systems (IS) (Kwark et al., 2017). Previous empirical studies have examined platforms from different angles, such as the growth of ecosystems (Jha et al. 2016; Bratianu, 2020), the impact of platforms on societies (Chan and Ghose, 2014), platform governance (Boudreau, 2010) and the adoption of the platform strategies (Hagiu and Wright, 2015). Digital platforms contribute to the decrease of transaction costs, including search, trading and monitoring costs (Eisenmann et al., 2006). Platforms help to better coordinate and organize technology developers of complementary products through appropriate institutional structures (Tiwana et al., 2010).

5. Research Methods

In order to estimate the evolution of the activity of cultural institutions there might be used several indicators, such as: *number of artists, number of shows, number of art galleries, number of exhibits, number of appreciations and number of posts on the social platform*. It is difficult to measure cultural activities as these are part of the intangible assets. In line with the purpose of the paper, the authors considered that it is necessary to follow the evolution of the main social media that

might help consumers of cultural products to easily get access to different relevant information. In this perspective, the authors decided to use a set of contact points for which the following indicators were used: *number of appreciations on the official Facebook accounts; the number of comments, number of posts; number of appreciations and number of distributions*. The period of time covers the second quarter of 2019 and the year 2020. Secondary data, in the form of comments on the posts of cultural institutions, were collected from the social networking site Facebook, to assess the overall satisfaction of users of cultural services. The analysis of these data was performed on three museums (*National Museum of Natural History "Grigore Antipa", National Museum of Art of Romania, National Museum"Dimitrie Gusti" Village*) and three theaters (*Masca Theater, Bulandra Theater and Nottara Theater*).

6. Main Findings

6.1 How the COVID-19 Pandemic affected CCS along with the Whole Society

As highlighted before, CCS are very important parts of the economic, social, cultural and ecological systems. They are impacting positively a lot of channels like education, urban regeneration, health.

CCS are among the hardest hit by the pandemic, with large cities containing the largest part of jobs at risk. The dynamics of the impact vary across sub-categories, with *venue-based activities* and *the related supply chains* mostly affected. In addition to short-term support for artists and firms, coming both from the public and private sector, governmental policies may influence the social and economic impacts of culture in their efforts and broader recovery packages to help local economies. *The venue-based sectors* – festivals, cinema, performing artists are among the hardest hit by social distancing measures, along with restaurants and all the hospitality industry. The unanticipated drop in their income is putting their economic sustainability at risk and has resulted in reduced wage earnings and redundancy notices sent to employees. All these actions affected the business chain of suppliers, from creative and non-creative sectors alike. In contrast, some CCS, such as online content social platforms, have profited from the increased demand for cultural content streaming during lockdown, but the benefits from this extra demand have largely accrued to the largest firms in the industry. The effects of this crisis on distribution channels and the dropping of investments will affect the cultural services in the period to come. On the short term, the drop of people's purchasing power along with the anticipated lower levels of international & domestic tourism and the decrease of public and private funding for culture, could amplify this negative trend. While recovery strategies and responsive public support are still expected, the crisis of CCS will have a negative economic impact on cities and on the whole regions in terms of jobs and revenues, citizen prosperity. CCS include small companies, non-profit organizations or creative professionals, often operating on the edge of financial sustainability. CCS and the whole society

depend on this dynamic cultural environment in order to provide creative goods and services. Employment and income support measures are not always accessible or adapted to the new and non-standard forms of employment (freelance, intermittent, hybrid) that tend to be more precarious. Digitalisation and emerging technologies, such as augmented realities (AR), are expected to generate new forms of cultural experience and business models. When the first lockdown occurred in the first half of 2020, many public and private cultural providers made their content switch on-line without any cost for the consumer in order to maintain their audiences. The demand for online cultural content increased. While the supply of free and digitally moulded cultural content might be considered by some not sustainable over time, it has opened the door for many future innovations. We consider that, in order to capitalise on them, there is a need to address the digital skills shortages within the CCS and improve digital access beyond large metropolitan areas. Digital access does not replace a live cultural experience or all the jobs that go with it. Seeing the COVID-19 crisis as an opportunity might sound surprising, but the accelerated digitalization that both education and CCS have experienced can only bring positive outcomes. Not so long ago, artists believed that *YouTube* might ruin their way of working, but it brought a lot of advantages, from an audience visibility point of view, but also from an economic perspective. The period of lockdowns throughout all 2020 and the social distancing measures highlighted the importance of arts and culture for people's mental health and well-being by preventing and treating different illnesses, contributing to solutions for health and national social or private welfare systems.

6.2 How Social Networks Can Help CCS to Overcome the COVID-19 Pandemic

All in all, an increased use of online social networks is one of the most far-reaching and enduring consequences of COVID-19. Beside from traditional media trusts, as the main vectors of social communication in critical situations, individuals have emerged and had a huge impact and visibility on public opinion, similar to that of specialized communication media. They have been supported by their host social networks with unrestricted reach to all the connections based on social platform. The nature of social interactions in the 21st century, have been transformed into a digital, globalized and interconnected context, being concentrated in digital media. This transformation has been major enough to consider that in the past few years the impact of social networks has resulted in a media metamorphosis, triggering a change not only in the communication-information ecosystem, but also in the roles of the consumers and producers of information, news and general knowledge. The worldwide triggering of COVID-19, and the exposure of the whole population to a virus without a specific medical treatment and with high risk levels of infection, have underlined the advantages of digital media as the preferred communication channel about every important aspect. Beside the big press corporations, as the drivers of the social

communication thread in situations of crisis, other social agents have appeared. New agents supported by social networks, are contributing to the re-direction of the management of communication in a worldwide pandemic. Collaboration and an interconnected global dialogue of different citizens on digital platforms have provided an increasing importance to these *digital Agoras*. We shifted to a more informal style, where even politicians need the approval of *Millennials* or *Gen Z* participants in their online questionnaire. During the COVID-19 crisis, citizens can have a relevant impact to world perspective on global issues, as good as the traditional media corporations.

6.3 Digital Innovation in Museums during the COVID-19 Pandemic

Compared to other public cultural institutions, museums have brought a complex diversity of activities to adapt to the conditions imposed by the pandemic. Due to the wide area of coverage of cultural fields (from history, oenology, to literature or fine arts), the approach and results were different. Museums' strategies are similar when it comes to the virtual environment, as many of them have developed platforms to promote exponents and events on social media (mainly *Facebook*). The interest of digital consumers can be expressed by appreciations, as illustrated in Table 1, and sometimes by individual reporting to each post (approaches, comments and distribution). All these represent a new unit of measurement of the activity of cultural institutions and suggest some characteristics of the public profile, which unlike the specialized one that participates in events in physical spaces, it is non-professional, driven by curiosity and digital components.

Table 1. Number of likes on the Facebook pages of some museums in Bucharest

Museum name	Number of likes on Facebook
Grigore Antipa National Museum of Natural History	47 171
Muzeul National de Arta al Romaniei	24 933
Muzeul National al Satului "*Dimitrie Gusti*"	35 653

Source: Authors 'processing based on museums' Facebook pages.

The following tables present a comparison of the number of posts, appreciations, comments and distribution in April, May and June of 2019 and 2020, for three museums in Bucharest, in the period before the pandemic and during the lockdown period. *Antipa National Museum of Natural History* is one of the most imposing museums in Romania and Eastern Europe, with over 2 million exhibits. It studies biodiversity through collection-based research. Table 2 shows a comparison of the Facebook activity of *Antipa Museum* in 2020 and 2019.

Table 2. Number of posts, likes, comments, share on the Facebook page of "*Grigore Antipa" National Museum of Natural History*

	No. posts	No. likes	No. comments	No. share
June 2020	37	4780	121	1228
June 2019	55	7859	187	2306
May 2020	49	5568	160	1878
May 2019	36	2744	74	696
April 2020	37	4527	70	1113
April 2019	27	4527	70	1113
Total 2020	123	14875	351	4219
Total 2019	118	15130	331	4115

Source: Authors 'processing based on "*Antipa" National Museum of Natural History* Facebook page.

Prior to the lockdown period, the "*Grigore Antipa" National Museum of Natural History* was quite active on this social network. According to table 2, the number of posts, appraisals, comments and distributions, from April, May and June of 2020 is slightly higher compared to 2019. The *National Museum of Art of Romania*, founded in 1948, includes collections of Romanian, European and Oriental art. In addition it carries out educational programs & projects dedicated to schools, adults and families. Table 3 shows a comparison of its activity on Facebook in 2020 and 2019.

Table 3. Number of posts, likes, comments, share on the Facebook page of National Museum of Art of Romania

	No. posts	No. likes	No. comments	No. share
June 2020	32	4512	81	1117
June 2019	9	1098	5	51
May 2020	42	6738	147	2459
May 2019	23	623	6	138
April 2020	40	7528	194	2459
April 2019	15	601	14	164
Total 2020	114	1877	422	5813
Total 2019	47	2322	25	373

Source: Authors 'processing based on National Museum of Art of Romania Facebook page.

According to Table 3, there may be a significant increase in the number of posts, appreciations, comments and distributions in the second quarter of 2020 compared to the same period in 2019 due to the fact that museum representatives have to be closer to people during the lockdown period, by increasing the number of posts.

"Dimitrie Gusti" National Village Museum, founded in 1936, is an open-air museum, located on the shores of *Herastrau Lake*. It presents the life of the village from different parts of the country. Table 4 shows a comparison of the Facebook activity of *"Dimitrie Gusti" National Village Museum,* in 2020 and 2019.

Table 4. Number of posts, likes, comments, shared on the Facebook page of *"Dimitrie Gusti" National Village Museum*

	No. posts	No. likes	No. comments	No. share
June 2020	59	13424	201	1640
June 2019	26	2615	30	150
May 2020	88	12960	395	2265
May 2019	10	1003	68	96
April 2020	110	23070	557	4928
April 2019	5	290	6	273
Total 2020	257	49454	1153	8833
Total 2019	51	3908	104	273

Source: Authors 'processing based on "Dimitrie Gusti" National Village Museum Facebook page.

According to Table 4, "*Dimitrie Gusti" National Village Museum* has intensified its activity on social network in the context of pandemic and lockdown. There is a significant increase in number of posts, appreciations, comments and distributions.

6.4 Digital Innovation in Theatres

Theatre institutions have started broadcasting recordings of performances and rehearsals through the social networking or video streaming platform, and in some cases, through local television stations. It should be noted that watching online theatre performances imposes different limits on the public experience. On the one hand, the technical quality is poor, respectively the image quality is affected by the distribution channels, the sound is captured from the only source. Despite these difficulties, theatres launched the shows that were scheduled for the premiere, but also shows from previous seasons. In addition to these solutions, various special activities for children were carried out (interactive workshops designed especially for the introduction into the world of theatre). Theatres have developed various virtual platforms to promote the cultural product. Within these institutions, consumers' interest can be expressed by the appraisal, as well as by appreciations, comments and distribution of all posts (Table 5).

Table 5. Number of likes on the Facebook pages of some museums in Bucharest

Theatre name	Number of likes on Facebook
Masca Theatre	11 397
Bulandra Theatre	52 426
Nottara Theatre	23 816

Source: Authors 'processing based on theatres Facebook pages.

The following tables present a comparison of the number of posts, appreciations, comments and distributions in April, May and June of 2019 and 2020, for three theatres in Bucharest, in the period before the pandemic and the lockdown period.

Masca Theater, founded in 1990, is the only theatre of gesture, body expression and pantomime in Romania. Table 6 shows a comparison of the Facebook activity of the Mask theater, in 2020 and 2019.

Table 6. Number of posts, likes, comments, share on Masca Theatre' Facebook page

	No. posts	No. likes	No. comments	No. share
June 2020	85	5293	59	322
June 2019	23	574	15	48
May 2020	90	4816	149	507
May 2019	24	1292	37	77
April 2020	72	2061	287	334
April 2019	16	374	43	15
Total 2020	247	12170	495	1163
Total 2019	63	2240	95	140

Source: Authors 'processing based on Masca Theatre Facebook page.

According to Table 6, during the lockdown, *Masca Theater* was with the public through frequent posts on the social network, but also through the distribution of the number of people. *Bulandra Theater* was founded in 1947, being the first state theatre in Romania. After only 10 years of performances, the troupe of actors of the theatre is composed of over 100 people. In 1995 and 2008, the theatre organized *the Festival Union of European Theatres*. Table 7 shows a comparison of the Facebook activity of the Bulandra theatre, in 2020 and 2019.

Table 7. Number of posts, likes, comments, share on the Facebook page Bulandra Theatre

	No. posts	No. likes	No. comments	No. share
June 2020	180	22181	974	2444
June 2019	23	735	28	43
May 2020	155	24438	786	3987
May 2019	24	1460	94	74
April 2020	48	5730	241	1228
April 2019	16	486	63	24
Total 2020	383	52349	2001	7659
Total 2019	63	2681	185	141

Source: Authors 'processing based on Bulandra Theater Facebook page.

According to Table 7, there is a significant increase in the Facebook activities of *Bulandra Theater*, and this increase is quantified both by the increase in the number of posts in 2020 compared to 2019, and the increase in the number of distribution, comments and appreciations. *Nottara Theater*, founded in 1947, is in the top of public preferences in Bucharest and has adapted its offer of shows, integrating a series of comedies in the repertoire. Table 8 shows a comparison of the Facebook activity of the Nottara theatre, in 2020 and 2019.

Table 8. Number of posts, likes, comments, share on the Facebook page Nottara Theatre

	No. posts	No. likes	No. comments	No. share
June 2020	59	2653	442	646
June 2019	23	1023	105	198
May 2020	65	2924	800	753
May 2019	21	1244	224	210
April 2020	62	2096	213	801
April 2019	24	1150	208	354
Total 2020	186	7673	1455	2200
Total 2019	68	3417	537	762

Source: Authors 'processing based on Nottara Theater Facebook page.

According to Table 8, *Nottara Theater* intensified its activity in the online environment during the lockdown period, through a significant increase in the number of online posts.

7. Conclusions

The crisis caused by COVID-19 is unprecedented, both in Romania and globally, affecting the routine of people, the economy of states, human resources and the pace of public services. The restrictive measures that have been imposed to limit the spread of the virus have affected all economic fields in general, but also the CCS. In the context of this pandemic, in addition to the measures taken by the central authority and civil society solidarity, cultural institutions have developed various methods and strategies to combat the side effects caused by the pandemic, as well as to maintain a close relationship with their public. The response of the institutions was varied, depending on the infrastructure and human resources available.

While libraries have benefited from online databases and archives, some museums have had virtual tours that have been promoted more intensively, and music institutions have been able to rely on the interaction between their audience and musical performance. It can be concluded that both in museums and in theatres, there has been an increase in the activity on social networks, especially on Facebook, where there were more posts, more comments, more appreciations and more distributions. Museum and theatre staff wanted to be with their audience during the lockdown, so they stepped up the number of posts.

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The Impact of Fiscal Freedom, Government Effectiveness and Human Development Index on the VAT GAP in the European Union

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Abstract

The present study analyses the value added tax (VAT) from the perspective that the state cannot collect, due to influencing factors such as tax evasion, exemptions and reduced rates. According to the European Commission (2020), in the EU, the VAT Gap (the difference between VVTL- the VAT total tax liability and VAT actually collected) reached round EUR 140 billion. As the VAT Gap cannot be ignored, each country is focusing on tackling VAT fraud and limiting the size of this phenomenon. The aim of this paper consists of analysing the relationship between fiscal freedom (FF), government effectiveness (GE), and human development index (HDI), as independent variables, and VAT GAP % of VTTL, as a dependent variable within EU countries during 2000-2018. In the study, we developed 3 econometric models, using panel data regression with fixed and random effects, aiming to point out whether these three independent variables are significant in strengthening strategies by states to tackle VAT fraud in order to minimize the amount of VAT Gap.

Keywords: tax evasion, VAT fraud, VAT Gap, fiscal freedom, government effectiveness, human development index.

JEL Classification: E26, G1, G41, H11, H26.

1. Introduction

The tax system includes a set of taxes, but in most of the countries value added tax, herein referred to as VAT, is the main element. In the 1920s, the German businessman Von Siemens introduced first the idea of VAT, but France is credited with the first value added tax, adopted in 1954 (Ionela et al., 2019).

According to the European Commission, VAT is a major source of revenue in the European Union (EU), yielding € 1,131 billion in 2018 alone. Moreover, with an average standard VAT rate in the EU of 21.46%, VAT brought 18.2% of total tax

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revenues and total VAT income in EU represented 7.1% of the total EU GDP in 2018.

Although the VAT structure is basically the same in all member states, there are differences among countries, starting from different tax rates for specific products to specific antifraud measures. These differences are shown in the share of VAT in the government budgets of each country. The share of VAT in total taxation in 2018 ranges from 14.8 % in Italy to 34.9 % in Croatia. Regarding VAT to GDP, it varies widely: from 4.4 % in Ireland to 13.5 % in Croatia (Eurostat, 2020). Thus, reducing VAT Gap seems to be more relevant for countries where the share of VAT in total taxes is higher (Porumboiu et al. 2019).

The purpose of applying VAT is to increase budget revenues. Cnossen (1990) argues that *"purely from a revenue point of view",* VAT is probably the best tax ever invented. On the other hand, Tait (1988) admits, *"Like other taxes, VAT is evaded"* (Luitel, 2005). In the same field, in OECD countries, there is no apparent increase in the rate of VAT to GDP (OECD 2016). One of the reasons could be the increase in VAT evasion and fraud (Manea & Manea, 2011). Nevertheless, most of the gap is caused by VAT fraud. (Hangacova & Stremy, 2018).

2. Overview of VAT Gap and Methods of Estimation

Member States are facing big losses in revenue from VAT fraud and noncompliance. Every year, thousands of millions of Euros are not collected because of fraud (Barbone et al., 2017). Over the past two decades, the volume of VAT evasion has been alarming, so at European level the VAT issue focused mainly on its sensitivity to tax evasion. Official statistics by the European Commission indicate that EUR 140 billion in potential VAT revenues were lost in 2018, equating about 11.01% of VAT Theoretical Liability (hereinafter referred to as VTTL). The report also predicts a potential increase of VAT revenue losses in 2020 due to the effects of the coronavirus pandemic on the global economy. The loss is forecasted to be €164 billion in 2020 (European Commission, 2020).

VAT evasion is often estimated by the VAT Gap, which is defined as the difference between theoretical VAT liability, in other words, the total VAT that should have been collected according to the applicable VAT law, and VAT actually collected by public budgets. However, fraud is only a fraction of the VAT Gap and its size is subject to intense debate. Other factors such as mistakes, bankruptcies, and insolvencies preventing firms from paying VAT are also included in the VAT Gap (European Commission, 2020). The latest report (European Commision, 2020) shows that in 2018, VAT Gap ranges from 1% in Sweden to 33.8% in Romania.

Empirical studies investigating the effects of different factors related to VAT Gap have provided relevant results. Some studies revealed that in more developed countries, with higher levels of income per capita and literacy and lower levels of agricultural activity, VAT revenues are higher (Ebrill et al. 2001). Secondly, the results of some studies made in Italy, indicate a positive relationship between VAT Gap and the fiscal morale of the geographical area (D'agosto et al., 2014). The results of the regression model for the period 2000 – 2011 used in the study of European

Commission CASE (2013) indicated that the increase in unemployment is linked to higher levels of VAT Gap. Third, another study that focused on 25 EU countries between 2000 and 2006 indicated a positive relationship between VAT Gap and administrative costs related to VAT collection (Barbone, Bird and Vázquez-Caro, 2012). On the other hand, studies related to VAT fraud are not based only on the VAT Gap as a dependent variable. Authors like Agha and Haughton (1996) used the self-compliance rate for the year 1987 in 17 OECD countries. Their results showed that an increase in the number of VAT rates and an increase in the standard VAT rate will lead to a decrease in voluntary compliance in the payment of taxes.

There is not one single way to estimate the VAT Gap. In the available literature, there are two methods for estimating VAT Gap, namely: *„bottom-up"* and *"top-down"* (Reckon, 2009). Similarly, Schneider (2000a) and Thomas (1992) classified the methods to estimate VAT Gap in micro approach and macroeconomic approach. The same and Borselli (2011) proposed two ways for estimating VAT fraud: the direct approach and the indirect approach. (Butu et al., 2020).

Table 1. Comparative view of the methods used for estimating VAT Gap

Method	Main features
Bottom up - micro – direct methods	- are generally preferred for direct taxes (Stavjaňová, 2014); - are based on micro data for individuals and enterprises collected directly by tax administrations, including surveys and audits (Isachsen et al., 1982); - surveys include a random sample of taxpayers for all categories that are analysed, and then extrapolated to the entire population; - are used to estimate noncompliance to VAT for certain taxpayer groups and types of noncompliance (European Commission, 2020); - the quality of results will be highly related to the sample size and it focuses on a selected group of taxpayers, the statistical criterion applied, and knowledge of the system from the respondent elements; - the results are extrapolated to the entire population, so the results would be overestimated; - countries using the method: Estonia, Slovenia, and UK.
Top down – macro - indirect methods	- are generally preferred for indirect taxes (Stavjaňová, 2014). For the estimation of tax gap data not necessarily related directly to the tax process are used - *"indirect method"*; - are based on national accounts data and the information from the supply-use tables (SUT) of National Accounts; - are based on the estimated theoretical tax, which is then compared with the actual tax revenue; - the statistics and data on private consumption, intermediate consumption and investment of central and local governments apparently play the most important role in the assessment of the VAT Gap estimation; - are used by the European Commission and are well described in CASE's annual reports on VAT Gap in the EU (European Commission, 2020).

Source: Adapted by authors based on literature review.

Table 1 outlines the main particularities of the two methods. Although both have advantages and disadvantages (Schneider, 2000a), in all cases the preferred method depends on the availability of the data. Thus, the most used approach to estimate the

uncollected level of VAT is *"top-down"* method. The information can be found in the supply-use tables (SUT) of National Accounts.

3. Aims of the Research

In this paper, we started from the econometric model proposed by Alexandru Dronca in his paper *"The influence of fiscal freedom, government effectiveness, and human development index on tax evasion in the European Union"* (2016). While the author used the amount of tax evasion as a percentage of GDP as the dependent variable, we have chosen VAT Gap as % of VTTL as dependent variable. The present study aims to continue the period 1999-2000 analysed for the 28 European Union Member States by the author Alexandru Dronca. Therefore, we have analysed a timeseries coresponding for 19 years, from 2000 to 2018.

The proposed econometric model proposed is a panel data model and incorporates the data for 28.

The proposed econometric model proposed is a panel data model and incorporates the data for 28 European Union Member States, with some limitations. Because not all data are available for all countries, we excluded Cyprus and Croatia from the analyses. On the other had, we included United Kingdom, given that during the analysed period it was still part of the European Union. The analysis considers 19 years (2000-2018), so the total amount of observations is 494.

The objective of the study is to highlight the relationship between the dependent variable, VAT Gap as a percentage (%) of VTTL and the independent variables: fiscal freedom (FF), government effectiveness (GE) and the human development index (HDI). Next, we will present the variables used in the panel data model.

3.1. VAT Gap

VAT Gap report published by European Commission provides data about VAT Gap. According to the latest report published (European Commission, 2020), VAT Gap is calculated as follows:

$VAT\ Gap$ = VTTL – VAT revenue, where (1)

VTTL = all VAT that should have been collected according to the applicable VAT law; VAT Revenue = VAT actually collected by the public budget.

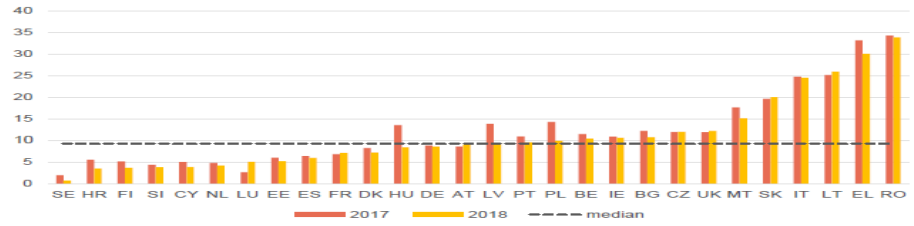


Figure 1. VAT Gap as percent of the VTTL in EU-28 Member States, 2018 and 2017
Source: Study and Reports on the VAT Gap in the EU-28 Member States, 2020, p. 18.

The first conclusion we can draw from Figure 1 is that in 2018 to 2017, the VAT Gap percent of VTTL decreased in 21 countries. Hungary is the country that registered the biggest decrease in the VAT Gap share, -5.1 percentage points (pp), followed by Latvia (-4.4 pp), and Poland (-4.3 pp). By contrast, the biggest increase was registered in Luxembourg, +0.8 pp, followed by Austria +0.5 pp. Secondly, Figure no. 1 shows that, for the year 2018, while the smallest Gaps were registered in Sweden (0.7 %), Croatia (3.5%), and Finland (3.6%), the largest VAT Gap was registered in Romania (33.8 %) followed by Greece (30.1 %) and Lithuania (25.9 %).

3.2. Fiscal Freedom (FF)

The Index of Economic Freedom (FF) is provided by Heritage Foundation and measures the economic freedom using 12 quantitative and qualitative factors, grouped into four pillars, as follows:

- Rule of Law (property rights, government integrity, judicial effectiveness);
- Government Size (government spending, tax burden, fiscal health);
- Regulatory Efficiency (business freedom, labour freedom, monetary freedom);
- Open Markets (trade freedom, investment freedom, financial freedom).

Each factor is graded on a scale of 0 to 100. The score of a country is obtained by averaging these twelve numerical variables, which are equally weighted. The data for each factor are converted into a 100-point scale using the following equation:

$$\text{Fiscal freedom}_{ij} = 100 - \alpha\left(Factor_{ij}\right), \text{where} \quad (2)$$

$Fiscal\ freedom_{ij}$= the fiscal freedom in country i for factor j; $Factor_{ij}$ = the value (based on a scale of 0 to 100) in country i for factor j; α = a coefficient set equal to 0.03.

One of the benefits of the Index of Economic Freedom is that it analyses the positive relationship between economic freedom and a variety of economic goals. Reducing tax evasion through decreasing VAT Gap can be considered part of one of the economic goals.

3.3. Government effectiveness (GE)

The World Bank is providing the value of Government effectiveness (GE) indicator that is related to the perceptions regarding 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. According to the World Bank, each country is scored from approximately -2.5 to 2.

Besides, in the construction of the Government effectiveness indicator different individual variables from each data source measure in the Worldwide Governance Indicators were used, such as: quality of bureaucracy/institutional effectiveness – from the Economist Intelligence Unit Riskwire & Democracy Index (EIU); quality

of road infrastructure or of port infrastructure – from the World Economic Forum Global Competitiveness Report (GCS); infrastructure disruption/state failure/policy instability – from the Global Insight Business Conditions and Risk Indicators (WMO).

3.4. Human Development Index (HDI)

Human Development Index (HDI) is provided by United Nations Development Programme, which defines the index as a summary measure of the results of achievements in three key pillars of human development: a long and healthy life, access to knowledge, and a decent standard of living. HDI is the geometric mean of the normalized indices for each of the three dimensions. Each country ranks from 0 to 1, being greater as it approaches 1. It is an approach focused on people and their opportunities and choices. At the same time, the HDI captures only part of what human development means. It does not consider poverty, inequality, human security, or empowerment.

4. Research Methods

The following econometric models are based on the regression method. The literature describes that the main scope of regression is to determine a statistical connection between the endogenous (dependent) and exogenous (independent) variables or influencing factors. Nowadays, panel data model is increasingly used which consists of estimating regression equations in which the series used are both time series and cross-sectional data.

The study aims to estimate three linear regression models on panel data in EViews. Within the models, the dependent variable is VAT Gap and the independent variables are added, respectively, in each model: Fiscal Freedom (FF), Government Effectiveness (GE), and Human Development Index (HDI), as follows:

Model 1: The influence of fiscal freedom on VAT Gap - Equation model:

$$VAT\ Gap = \alpha + \beta * FF + \varepsilon \quad (3)$$

Model 2: The influence of fiscal freedom and government effectiveness on VAT Gap - Equation model:

$$VAT\ Gap = \alpha + \beta * FF + \gamma * GE + \varepsilon \quad (4)$$

Model 3: The influence of fiscal freedom, government effectiveness, and human development index on VAT Gap - Equation model:

$$VAT\ Gap = \alpha + \beta * FF + \gamma * GE + \delta * HDI + \varepsilon \quad (5)$$

In order to test the most robust model, we run sequentially the three models by adding a new variable in addition to the existing ones. Furthermore, each model was built based on least squares (OLS) and tested for the existence of fixed effect and random effects. Thus, there resulted three econometric models and the outcomes are

presented in Table No 2. The next step was the Hausman test, to decide which model is better: the one with fixed effects or the one with random effects.

5. Findings

Firstly we checked the value of the correlation coefficients, through a correlation matrix, which indicates whether there is a linear relationship between two variables. A value of 0 indicates that there is no relationship whereas a value of 1 indicates that there is a perfect correlation and the two variables vary together. The results are presented in Table 2. While we notice a moderate correlation between VAT Gap with FF and HDI, there is no relationship between VAT Gap and GE. Regarding the sign of the correlation coefficients, it turned out there is an inverse relation between VAT Gap with FF and HDI and a direct relation between VAT Gap and GE.

Table 2. Correlation Matrix of the variables

Variables	VAT Gap	FF	GE	HDI
VAT Gap	1			
FF	-0.46	1		
GE	0.01	0.00	1	
HDI	-0.56	0.59	-0.03	1

Source: Own processing in E-views 11 Student version.

Table 3 lays out the results of running the above three models for 28 European Union countries, except for Cyprus and Croatia, and including United Kingdom, in total 26 countries for the period 2000-2018, which generated 494 observations.

Table 3. The influence of fiscal freedom, government effectiveness, and human development index on VAT Gap as % of VTTL in Member States

Independent var.	M1			M2			M3		
	OLS	Fixed effects	Random effects	OLS	Fixed effects	Random effects	OLS	Fixed effects	Random effects
C	0.6355	0.3151	0.2873	0.6331	0.2753	0.3039	1.1520	0.3325	0.4075
(Prob)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
FF	-00070	-0.0023	-0.0019	-0.0070	-0.0019	-0.0023	-0.0029	-0.0014	-0.0017
(Prob)	0,0000	0.0005	0.0051	0.0000	0.0048	0.0005	0.0000	0.0728	0.0320
GE	-	-	-	0.0020	0.0114	0.0095	-0.0001	0.0100	0.0073
(Prob)				0.7420	0.3749	0.4057	0.9832	0.4379	0.5133
HDI	-	-	-	-	-	-	-0.9168	-0.1007	-0.1664
(Prob)							0.0000	0.3146	0.0868
R^2	0.2104	0.0243	0.8048	0.2106	0.8051	0.0253	0.3404	0.8055	0.0337
R^2Adj.	0.2088	0.0223	0.7939	0.2074	0.7938	0.0213	0.3364	0.7938	0.0278
F	131.1099	12.2637	74.0742	65.4904	71.3277	6.3886	84.3260	68.8184	5.6993
Prob	0.0000	0.0005	0.0000	0.0000	0.0000	0.0018	0.0000	0.0000	0.0007
No obs	494	494	494	494	494	494	494	494	494
Hausman T	-		0.0184	-		0.0657	-		0.0020

Source: Own processing in E-views.

In Table 3 we can notice a relatively good relevance of the model in terms of elevated levels of the F-statistic and R^2. Model 3 is considered the most relevant, which shows that the model can be explained by the chosen variables, with reservations regarding GE, because its Probability value is higher than the level of significance of 0.05%, and is not statistically relevant.

After applying the Hausman test, the probability obtained in our models was below the level of significance of 0.05%, excepting model M2. Thus, it can be concluded that the fixed effects model would be the most appropriate in models M1 and M3. Regarding the sign of the coefficients, it is notable that excepting for Government effectiveness, in all three models the sign is negative, as was expected.

The M1 model presents the influence of fiscal freedom on VAT Gap. The results show that the effect of Fiscal Freedom is negative. Thereby, increases of Fiscal Freedom lead to a decrease in the VAT Gap. This can be explained by the fact that a high level of fiscal freedom, translated through quantitative and qualitative factors like property rights, tax burden, fiscal health, investment freedom, or financial freedom will determine the taxpayers to voluntary comply to pay VAT.

The M2 model presents the influence of Fiscal Freedom and Government effectiveness on VAT Gap. As a result of the implementation of the Hausman test for Model 2, it was observed that, unlike the other models, the probability obtained is above the level of significance of 0.05%, which means that the random effects method has to be chosen. What is surprising in this model is that the Government effectiveness influence on VAT Gap is positive and does not have a negative sign, as was expected. GE has a negative sign only in the third model, M3, which was built based on least squares (OLS). At the same time, we have to consider that the Probability value is higher than the level of significance of 0.05%. Other studies suggested that a high level of GE translated through the perceptions of citizens on the quality of public services, the quality of the civil service, and the degree of its independence from political pressures will reduce tax evasion (Dronca, 2016). VAT Gap is a part of tax evasion and from the model M2 it turns out that GE does not have the expected influence on the VAT Gap. The results show that increasing Government effectiveness leads to increasing VAT Gap, which does not fold to reality.

The M3 model presents the influence of Fiscal Freedom (FF), Government effectiveness (GE) and Human Development Index (HDI) on VAT Gap. As it can be seen, the sign of all coefficients is negative, proving their accuracy in choosing them, excepting GE, which is not statistically relevant because its *p value* is higher than the level of significance of 0.05%. A high level of GE in member states reduces VAT Gap. Thus, increasing the credibility of government authorities and improving public services would lead to reduce VAT Gap by increasing the efficiency of VAT collection. The independent variable VAT Gap is negatively influenced by HDI, which is focused on people and their opportunities and choices. Thus, a high level of standard of living and a higher access to knowledge are linked with reducing VAT Gap, by improving VAT collection. We consider the model M3 the most descriptive one in showing a robust relationship between VAT Gap and the independent variables: Fiscal Freedom, Government effectiveness and the Human Development Index, even the statistical p for GE is not relevant.

The results should be interpreted with caution. On the one hand, the model is limited by the size of the panel, so the results cannot be extrapolated to all situations. On the other hand, some data are measured subjectively, such as government

effectiveness, which is measured as a perceptual feeling that citizens have regarding particular aspects of the country.

6. Conclusions

The values of VAT Gap and their percentage in VTTL reflect the effectiveness of the VAT tax system. Given the relatively high VAT Gap values at the national level of Member States, the measures proposed or already taken to limit VAT fraud are still insufficient.

A low level of VAT collection conducts to a decrease in VAT revenue, which will further contribute to an increase in the budget deficit. This can be transposed into less public investment that would affect quantitative and qualitative factors of Fiscal Freedom Index, such as government spending, tax burden, or fiscal health. If taxpayers trust their tax authorities, the former will cooperate and contribute easier, and this will increase voluntary compliance.

After analysing the three panel data models performed within this paper, we can conclude there is a negative connection between VAT Gap and the 2 independent variables: fiscal freedom and human development index, and a positive relation between VAT Gap and government effectiveness, with reservations regarding GE, because its *p value* is higher than the level of significance of 0.05% and is not statistically relevant.

As a conclusion, the model M3 built based on OLS shows that the sign of all coefficients, including GE, is negative, proving their accuracy in choosing them. Thus, increasing the credibility of government authorities and improving public services would lead to reducing VAT Gap by increasing the efficiency of VAT collection. The independent variable VAT Gap is influenced by the HDI, which is focused on people and their opportunities and choices. Thus, a high level of standard of living and a higher access to knowledge are linked with reducing VAT Gap by improving VAT collection.

This relationship VAT Gap - FF - GE - HDI can be studied in future studies elaborated for countries that rely more on VAT revenues and countries where the share of VAT revenue in total taxes is lower. As well, the period of the research may be extended as the data are being published by the responsible bodies.

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Fiscal Pressure in Romania and the Influence of the Value Added Tax

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Abstract

Fiscal pressure is an economic phenomenon, tolerated by natural or legal persons within certain limits, which expresses the intensity with which a percentage of the population's income is taken through direct or indirect taxation.

For the Romanian economy, fiscal pressure is an extensive indicator because it shows the taxpayers' burden towards their obligation to pay taxes.

Because of the need or the desire to oppose this economic phenomenon, some taxpayers resort to different methods to avoid the varied mandatory tax payments to the Romanian state, especially the value-added tax payments. For this reason, we consider that fiscal pressure could be one of the current problems in the Romanian society.

The purpose of this article is to identify whether certain taxes and fees of the Romanian state lead to a high fiscal pressure on the Romanian taxpayer, and to show the evolution of these taxes and fees of the Romanian government. For this purpose, the authors built an econometric model, through which they aimed to capture the influencing factors of fiscal pressure in Romania, during the period between 1998 and 2018.

After we performed the error-specific tests, namely the Harvey homoscedasticity test and the Jarque-Bera normality test, we obtained a multiple regression model, which revealed that the value-added tax and the level of the gross domestic product have a strong influence on the fiscal pressure, with a 5% level of significance taken into account.

Keywords: tax, fiscal pressure, fiscal pressure VAT, gross domestic product, the level of consumption of the population, the level of fiscal pressure.

JEL Classification: E62, H20, H21, H26, H71.

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1. Introduction

In Romania, taxation is the system for collecting direct and indirect taxes through the National Agency for Fiscal Administration, a public institution that seeks to ensure that taxpayers meet their tax compliance obligation, establishing and collecting the contributions due by taxpayers according to the law. The major interest of a state is to collect as many taxes and duties as possible from their taxpayers, individuals or legal entities. This is a problem of fiscal policy; however, the existence of a high level of fiscal pressure compared to the level of affordability of taxpayers to participate in consolidating the state budget by partially transferring revenues or profits made by them, can lead in time to a decrease in the demand of consumer goods, and consequently to a reduction in the living standards of the population. The fiscal pressure of the taxpayers is at the base of the economic development of a state, in a directly proportional relationship.

The issue of fiscal pressure is a very current topic in Romania since we are still in the process of modernization of the tax system, trying to analyse the positive and negative effects of this system. The lack of available capital tends to be a rather major problem for the tax system attributable to poor investments in Romania. The revenues obtained by the taxpayers are relatively low to be burdened with taxes and duties quite high for the current Romanian living standards.

Thus, Romania, an emerging state in the European Union, assumes a series of risks, on several levels.

In social terms, various social disorders and general dissatisfaction of the taxpayers can occur, leading to tax riots.

In economic and social terms, the phenomenon of "undeclared work, tax evasion, and fraud occurs, with the financial crime recording increased rates. A review of the literature showed that fiscal pressure is the main determining factor in tax evasion and the underground economy.

According to Lippert and Walzer (1997), the large share of GDP taken by taxes in total (and, especially, high rates of income tax) is the primary cause of long-run growth in the underground economy.

Chiarini et al. (2013) empirically investigated the long-term characteristics of tax evasion and its relationship with the fiscal pressure by using time series on the VAT base avoided in Italy. On this occasion, the authors pointed out that tax evasion and tax rate are Granger-caused by each other: tax avoidance legitimizes high tax rates, and high tax rates push up tax evasion.

In economic terms, a high level of fiscal pressure will discourage progressivity through labour, investment, and savings, with taxpayers deliberately avoiding the realization of real incomes for which they should have paid taxes.

According to Trandafir and Brezeanu (2011), the increase in the fiscal pressure leads to a decrease production, the latter determining the decline of the tax revenues. A fiscal pressure in the inadmissible area discourages economic activities and individual initiatives.

2. Problem Statement

According to the literature, taxation is the system of establishing the financial resources of the state, it is considered by taxpayers a form of coercion, being also called fiscal pressure.

Through the concept of fiscal pressure we determine the degree of taxation, the degree to which the taxpayers of a country bear, on account of the income obtained from their activity within the companies they administer, taxes and duties, as levies mandatory by law, established and levied through clear constraints by the state.

The fiscal pressure represents the proportions of the society's income to which, obligatorily, the taxpayers - natural or legal persons - contribute in favor of the state, in the form of taxes of any type, timely transferring them, to the consolidated budget of the state they belong to.

General fiscal pressure

In the first chapter, we want to present the general fiscal pressure in Romania, comparing with the level of the fiscal pressure in the EU over a period of 20 years, between 1998-2018.

Table 1. Fiscal Pressure

	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
EU 27	-	-	-	-	41.06	40.69	41.14	41.28	42.17
Romania	8.1	14.2	16.4	20.3	23.4	28.6	29.9	26.4	28.2
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
EU 27	42.41	40.65	39.04	38.92	39.34	40.30	40.70	40.84	40.60
Romania	28.9	28.1	27.3	26.6	27.7	28.1	27.4	27.3	27.8
	2016	**2017**	**2018**						
EU 27	40.70	40.85	41.03						
Romania	26.5	26.2	27.1						

Source: Authors' calculations based on Eurostat data.

3. Research Questions/Aims of the Research

Although official statistics do not publish the rate of fiscal pressure at regular intervals (annually), we managed to determine the rate of fiscal pressure using the Eurostat database, for the targeted period.

Our results indicate that, in Romania, the level of general fiscal pressure was below the level registered in the European Union, during the whole period analysed, which reveals that other states of the European Union had higher levels of fiscal pressure, for all categories of taxes and fees.

However, the degree of Romanian fiscal pressure suffered an ascending scale from year to year. As we can see in Table no. 1, we calculated the level of general fiscal pressure, taking into account all direct, indirect taxes, social and health contributions, compared to the gross domestic product; the rate of fiscal pressure started from 8.1% in 1998, reaching 27.1% in 2018. The increasing trend of fiscal

pressure in Romania shows that the fiscal policies adopted over the years did not stop this phenomenon, but amplified it. Taxpayers felt the fiscal pressure at a much more worrying level in the coming years.

As a next step, we wondered if the fiscal pressure established on different taxes is at the same level, or, in Romania, the tax burden is higher for a certain category of tax, such as indirect tax, as value-added tax?

But, before breaking down the level of fiscal pressure on the most important categories of taxes and fees, we want to present the evolution of taxes and duties in Romania.

In Romania, the taxation of income from salaries brought a high degree of fiscal burden until 2003, when the tax rate was reduced by 5%.

In 2005, Romania adopted a single tax rate of only 16%, this rate remaining among the most burdensome taxes in Europe according to the perception of some employers and employees.

The relationship between tax rates and tax revenues is based, according to Laffer (2004), on the idea that changing the taxes has two types of effect on revenues:

- an arithmetic effect, in the sense that when the tax rates are reduced, the tax revenues will also be reduced with the amount of the decrease in rate;
- an economic effect, which recognizes the positive impact that low tax rates have on labour, on production, on the employment, and implicitly on the tax base, by providing incentives to increase these activities.

Analysing the effects of the reduction of tax rates in 2003 and 2005, in relation to the evolution of fiscal revenues collected by Romania in the same period, we can make the following assumptions related to the idea transmitted by Laffer (2004):

When the tax rate was reduced by 5%, the total receipts from taxes and net social contributions (including imputed social contributions) after deduction of amounts assessed, but unlikely to be collected, increased, compared to 2002, by 28.21%, while, in 2004, the total receipts increased by 23.83% compared to the year of the tax rate reduction, highlighting a potential economic effect of this change in the tax rate.

The stabilization of the tax rate at 16% also had an economic effect in the sense that, in 2005, it was observed an increase of 18.93% in the total receipts from taxes and net social contributions (including imputed social contributions) after deduction of amounts assessed, but unlikely to be collected, compared to 2004. In 2006, the receipt increased by 22.36% compared to the year in which the tax rate reduction was operated.

The burden of social security contributions was felt by the companies more strongly than the other mandatory tax levies, due to the high rates that had to be paid by the employer, and also due to the employer's mentality.

When analysing the evolution of the fiscal pressure in Romania, we found that taxpayers felt the same fiscal pressure from the point of view of the corporate tax of about 25%, according to Law no. 414/2002 with subsequent amendments and completions. However, the level of the Romanian fiscal burden remained below the threshold of 30% of the Gross Domestic Product. Concerning these figures, we can

say that Romania had lower taxation than the EU average, which, in 2003, was at 40.69%.

Although the tax on income from salaries was reduced to 16%, during the period under review, the other contributions related to the labour force remained at a high level and this was reflected in the living standard of the population and low consumption power in Romania.

The rates of direct taxes due and borne by taxpayers affect the volume of sales and services through prices, therefore they are also factors causing fiscal pressure. All these taxes affect the self-financing and payment capacity of companies.

The history of economic development of the world countries shows that high fiscal pressure is a brake on economic development, and is the cause of reduced activity, tax evasion, smuggling, undeclared work, and lack of major investments

The Romanian government sensed these risks of fiscal pressure and tried to support taxpayers with various programs and financial measures to ease the procedure for paying taxes and contributions.

Fiscal Pressure of Value-Added Tax

Regarding the level of fiscal pressure from the point of view of value-added tax, we can see in Table no. 2 the evolution of Romania compared to the average level of the European Union during the period between 1998 and 2018.

Table 2. Fiscal Pressure VAT

	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
U.E. 27	-	-	-	-	6.8	6.7	6.9	7.05	7.2
Romania	1.7	2.7	3.5	4.4	5.9	7.5	7.19	7.48	7.64
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
U.E. 27	7.3	6.9	6.5	6.8	6.8	6.8	6.9	6.9	6.9
Romania	7.86	7.72	6.59	7.55	8.44	8.35	8.03	7.56	7.95
	2016	**2017**	**2018**						
U.E. 27	7.01	7.09	7.16						
Romania	6.40	6.12	6.33						

Source: Authors' calculations based on Eurostat data.

During the analysed period, the level of the fiscal pressure of the value added tax was in a continuous increase in Romania. According to the data integrated in Table no. 2, a significant increase can be observed during the period 2003-2015, where the fiscal pressure of taxpayers, in terms of this indirect tax, was above the level of the European Union, noting that Romania's most burdensome tax was the value added tax.

According to the data and statistical reports to which we had access, covering the analysed period 1998-2018, the fiscal policy adopted in Romania, starting with 2003, was one of reducing the share of direct taxes (such as corporate tax) and increasing of indirect taxes (value added tax and excises), respectively of the introduction to a higher extent parafiscal taxes. The increase in the share of indirect taxes was made

amid the increase of the VAT tax base and the increase of excises, a proposal coming from the European Commission.

As we have shown in the introduction, high tax rates lead to tax evasion.

According to the Romanian Fiscal Council, in 2013, approximately 75% of the tax evasion was generated in the field of value-added tax. Based on the same source, in 2010, when the standard VAT rate increased from 19% to 24%, tax evasion increased with a 1.6% of GDP, compared to 2009.

In 2016, the Romanian government adopted the policy of reducing the VAT rate from 24% to 20%. The effects of reducing the VAT rate were felt immediately also at the level of the fiscal pressure of VAT which was, for the first time in the last 12 years, below the level of the European Union.

4. Research Methods

Estimation of the Linear Regression Model

Starting from the findings of the mentioned studies, we wanted to identify if, in Romania too, certain taxes and burdens burden the general public debts, lowering the living standard of the Romanians, by reducing the power of consumption.

In this sense, we created an econometric model, based on a multiple regression, through which we want to find out the influences of value added tax, excise duties, gross domestic product, public debt and consumption over the analysed period of 20 years, in the interval between 1998 and 2018.

Data on macroeconomic variables were extracted from the Eurostat database. The frequency of the data is annual, from 1998 to 2018. The country considered for the analysis is Romania.

Table 3. Variables used

Symbol	Description
GDP	Gross domestic product
IMP-PROD-IMPORT	Tax on imported products
DAT_PUB	Public Debts
CONSUMPTION	The level of consumption of the population
VAT	Value added tax
ACCIZE	The level of excise duties
FISCAL PRESSURE	The level of fiscal pressure

Source: Made by the authors.

Within the multiple regression, we chose as a dependent variable the level of fiscal pressure, and as independent variables the level of gross domestic product, the tax on imported products, public debt, the level of consumption, excise duties and value-added tax.

Dependent Variable: Fiscal Pressure
Method: Least Squares
Date: 03/29/20 Time: 11:36
Sample (adjusted): 1998 2018
Included observations: 21 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	-0.018108	0.006062	-2.987064	0.0105
IMP_PROD__IMPORT	0.518415	0.260085	1.993257	0.0677
DAT__PUB	-0.172805	0.096574	-1.789357	0.0969
CONSUM	-0.246555	0.150258	-1.640876	0.1248
VAT	0.745627	0.085578	8.712835	0.0000
ACCIZE	-1.950145	1.835380	-1.062530	0.3073
C	16.10285	7.011805	2.296534	0.0389

R-squared	0.915563	Mean dependent var	10.14853
Adjusted R-squared	0.876592	S.D. dependent var	7.696047
S.E. of regression	2.703576	Akaike info criterion	5.096245
Sum squared reside	95.02120	Schwarz criterion	5.444751
Log likelihood	-43.96245	Hannan-Quinn critter.	5.164277
F-statistic	23.49357	Durbin-Watson stat	1.598205
Prob(F-statistic)	0.000003		

Figure 1. Regression of fiscal pressure on macroeconomic variables
Source: Authors' contribution using EViews 7.1.

The results of multiple regression highlight the fact that the level of VAT and the level of gross domestic product have a significant influence on the fiscal pressure in Romania. The other variables, namely public debt, tax on imported products, level of consumption and excise duties, do not have any influence on the tax burden, as the probabilities attached to them exceed the significance threshold of 5%. So, we decided to eliminate these variables from the model, keeping only the significant variables, thus obtaining a new regression.

Dependent Variable: Fiscal Pressure
Method: Least Squares
Date: 03/29/20 Time: 12:08
Sample: 1998 2018
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	-0.021082	0.007855	-2.683726	0.0152
VAT	0.637864	0.076192	8.371800	0.0000
C	5.059758	1.472973	3.435066	0.0030

R-squared	0.799515	Mean dependent var	9.772192
Adjusted R-squared	0.777239	S.D. dependent var	7.696876
S.E. of regression	3.632741	Akaike info criterion	5.549415
Sum squared reside	237.5425	Schwarz criterion	5.698633
Log likelihood	-55.26886	Hannan-Quinn critter.	5.581799
F-statistic	35.89110	Durbin-Watson stat	0.866513
Prob(F-statistic)	0.000001		

Figure 2. Regression of fiscal pressure on significant macroeconomic variables
Source: Authors' contribution using EViews 7.1.

As can be seen above, the two variables, the level of gross domestic product and the level of VAT, retain their strong significance in the new regression. The value of coefficient of determination highlights the fact that 79.95% of the variance of the fiscal pressure is reproduced by the regression model. The probability attached to the Fisher test (F-statistic) is visibly lower than the significance threshold of 5%, which indicates the validity of the regression model performed.

When the gross domestic product increases by one unit, the level of fiscal pressure will decrease by 0.021 percentage points, provided that the other factors remain constant.

When the VAT tax is increased by one unit, the level of fiscal pressure will increase by 0.637 percentage points, provided that the other factors remain constant.

Next, we tested the normality as well as the homoscedasticity of the residues.

Heteroskedasticity Test: Harvey

F-statistic	0.075039	Prob. F(2,18)	0.9280
Orbs*R-squared	0.173643	Prob. Chi-Square(2)	0.9168
Scaled explained SS	0.135582	Prob. Chi-Square(2)	0.9345

Test Equation:
Dependent Variable: LRESID2
Method: Least Squares
Date: 03/29/20 Time: 12:28
Sample: 1998 2018
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.803193	0.856126	0.938171	0.3606
GDP	0.001702	0.004566	0.372773	0.7137
VAT	0.001843	0.044285	0.041618	0.9673

R-squared	0.008269	Mean dependent var	1.046990
Adjusted R-squared	-0.101924	S.D. dependent var	2.011415
S.E. of regression	2.111433	Akaike info criterion	4.464175
Sum squared reside	80.24672	Schwarz criterion	4.613392
Log likelihood	-43.87383	Hannan-Quinn critter.	4.496559
F-statistic	0.075039	Durbin-Watson stat	1.118369
Prob(F-statistic)	0.927996		

Figure 3. Residual homoscedasticity testing
Source: Author's contributions using EViews 7.1.

The Harvey test was used to test the homoscedasticity of residues, more precisely, if their variance was constant over time. The null hypothesis of this test implies the existence of homoscedasticity at the residue level while the alternative hypothesis implies heteroskedasticity. The probabilities of the test, which are higher than the significance threshold of 5%, underline the fact that the null hypothesis is accepted, which means that at the level of disturbing factors the presence of homoscedasticity is noticed.

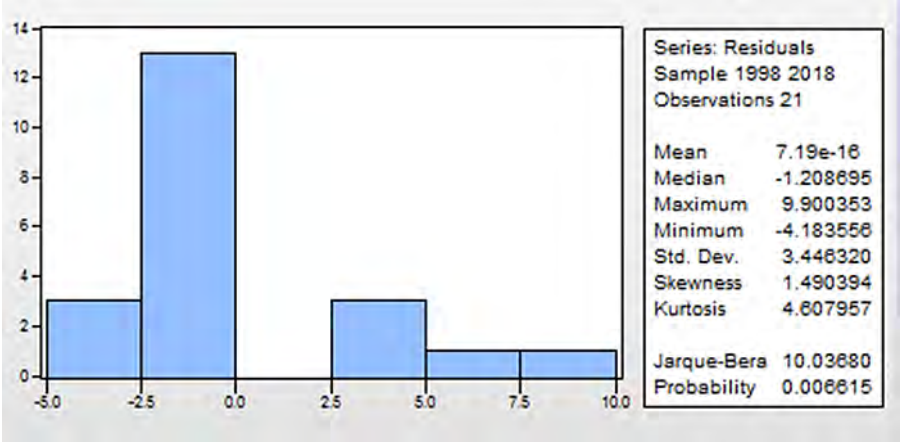


Figure 4. Residual homoscedasticity testing
Source: Authors' representation using EViews 7.1.

The Jarque-Bera test was used to test whether the errors are part of a normal distribution or not. The situation of a perfectly normal distribution implies the value of skewness equal to 0, and the value of kurtosis equal to 3. As these two reference values are exceeded, the errors tend to no longer belong to a normal distribution. The default assumption of the test is that the errors are part of a normal distribution. The probability of the Jarque-Bera test is lower by reference to the significance threshold of 5%, which means that the null hypothesis of the test is rejected, so the errors are not part of a normal distribution, which is also supported by the values of the skewness and kurtosis.

5. Conclusions

The concept of fiscal pressure, through paying taxes, is an important issue for the individuals and legal entities of the Romanian state.

Through this article, it was presented that in a developed national economy, it is mandatory to report the gross domestic product, where the collection of high taxes creates greater fiscal pressure, to the detriment of economic developments.

The decrease of the tax rates in Romania also favoured the decrease of the fiscal pressure degree, the taxpayers feeling more relieved and eager to claim the profit in their business, which indicates that the influences of the high rates of the value-added tax are very important for the living standard of the Romanian taxpayers.

One of the important conclusions of this article is that the decrease in tax rates, especially value added tax, had a positive influence on the tax burden in 2016. However, we cannot deny that a lower VAT rate implies, also, a lower risk of foregone revenue from this source.

Finally, we appreciate that the multiple regression model revealed that the level of VAT and the level of the gross domestic product have a strong influence on the fiscal pressure when a level of significance of 5% is taken into account, 79.95% of the variance of the fiscal pressure being explained by the model.

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Is the Digitalisation of Tax Institutions a Solution for Voluntary Tax Compliance?

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Abstract

In the stage of evolution in which the global society finds itself today, digitalisation is a key concept according to which new processes are designed, and efficient procedures solve current problems. Digitalisation, first implemented by the private sector, must also have a transposition in the public sector and can be a tool to improve the collection of tax obligations owed by individuals and legal entities, in the context where voluntary tax compliance is still a challenge for most member states of the European Union. This article aims to show the influence on the collection of tax receivables exerted by variables such as the share of tax obligations in income, educational level, and the degree of use of the Internet in relation to public institutions. The analysis takes into account EU countries over the last 12 years, during which time the use of the Internet has intensified. This analysis is a starting point in designing strategies for digitizing fiscal institutions, where they do not exist, depending on the specificities of each state.

Keywords: Tax compliance, fiscal revenues, digitisation.

JEL Classification: H21, H30.

1. Introduction

We are at the beginning of a new era of industrialisation, in which the digitalisation component is the key concept to intuit the direction of the changes we are experiencing. According to Cărăuş & Călugăreanu (2015), we live a digital age transition to an economy that focuses on information. Due to the COVID-19 health crisis that quickly spread its effects in all areas, the world society was put in an unforeseen situation and had to rethink, counter clockwise, ways of working, procedures and techniques in order not to remain in lockdown. In this context,

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digitalisation has been one of the reforms adopted by many organisations, private or governmental, to maintain and streamline business.

Increasing the quality of public services through digitalisation requires public institutions, first of all, to take measures to facilitate the implementation of digitalisation: to provide the legislative framework, logistical support, infrastructure. Digitisation in the public sector involves major investments in equipment, software, networks, technologies, but also in staff in public institutions, through tailored training, promising instead to streamline processes and reduce long-term costs. Of course, the efficiency of public institutions, of the results illustrated in society, is not immediate and also depends on the level of the population's adaptability, openness to the new and the speed with which it acquires new skills. However, the adoption of digital tools in public administration and even the idea of e-government represents new objectives in public sector digital innovation (Burwell & Jorn, 2020). The costs for digitisation are significant, and the efficiency of the public sector will only increase if new technologies are assimilated to ultimately increase the performance of public services provided. The effort of public authorities in charge of implementing digitalisation in various fields is far from strictly financial and material (we are talking about the budget allocated by governments, therefore an operational conditioning). The difficulty lies in the way resources are distributed and the key people in the institutions accept and convince the rest of the staff of the importance of digitisation - of allocating resources and supporting the effort at the level of human resources.

However, digitalisation can improve many technical processes, services provided to the population can be carried out faster, with reduced physical contact, with a declining staffing need. For a state budget, digitalisation can be a solution to reduce long-term costs in terms of reducing administrative and personnel costs. However, it is interesting to study whether digitisation is also a way to increase budget revenues, if the collection of taxes increases thanks to the digitalisation of collection services.

2. Problem Statement

Unlike the private sector where digitalisation is a tool for greater profitability and where its influence is easier to quantify, in the public sector digitalisation must take into account the particularities of the latter and be applied to facilitate the fulfilment of state functions. The conditions related to legality, integrity, democracy will be taken into account (Manzoor, 2014), and also that the objectives of the state are: to provide solutions for social pressure, to allocate resources to meet the needs of individuals (Kotler & Lee, 2011), to redistribute revenues according to the public interest (Mihaiu et al., 2010).

Public sector performance refers to the results of activities, and Afonso et al. (2005) determine it by calculating the indicators of opportunity (results in health, education, justice and public administration) and those "Musgrave" (allocation, distribution, stability). Other authors take also into account indicators of national defence or infrastructure departments (Hagiu, 2017). Efficiency is an indicator that

also takes into account the amounts used to achieve the level of performance, for example the budgetary effort involved. Empirically comparing public sector performance and efficiency, Afonso et al. (2005) show that countries with smaller public sectors perform better and more efficiently than countries with larger public sectors, which indicates a decrease in the marginal product obtained by increasing public spending. As government financial resources are limited and the interest in public services is growing, numerous studies have focused on the efficient use of public money, often indicating that the results could have been achieved at a lower cost. A study made by Borge (2008) et al indicates that an increased democratic participation is associated with a better efficiency, while higher fiscal capacity weakens efficiency. Effectiveness shows the result obtained by the investments made - outcome (Veiss, 2012), the achievement of the final objective (Kjurchiski, 2014), which was actually achieved compared to what was programmed (Mandl et al., 2008) and is finally reflected in the living standard of the population. In other words, efficiency focuses on quality, and effectiveness on achieving goals (Popa, 2017). Moreover, the need to increase the performance of the public sector is accompanied by the requirement of citizens to see how public funds are used (Joumard et al, 2007).

Therefore, the digitalisation of public institutions, regardless of their particular purpose, must be implemented in order to increase their performance, reducing budgetary costs for better quality services (efficiency), which improve the social conditions of the population (efficiency).

3. Voluntary Compliance

The correct declaration to the state institutions of the properties and incomes, accompanied by the payment of the fiscal obligations within the terms provided by the law are the financial-fiscal form that it takes on the civic spirit. Conventionally, it is considered that taxpayers pay tax obligations for one of the following reasons: fear of not being caught avoiding / defrauding, or intention to submit and comply with fiscal rules (Scholz & Pinney, 1995). But, given the fact that the fiscal obligations are reflected in the budget of each taxpayer, there is a well-known, intuitive possibility for the latter to make a misreporting (Porumboiu et al., 2019). Studies on voluntary compliance show the need for paradigm shifts to increase the willingness of the population to pay taxes, to the detriment of using the coercive force of the state in collecting amounts due to the budget. The reasoning lies in the decrease of costs allocated to the collection of budget revenues, insofar as the use of state authorities for the collection of taxes, duties and contributions generates a cost higher than the amounts recovered.

The solution suggested by a World Bank study (2010) is in fact to simplify the tax system, because this aspect influences voluntary compliance, as well as taxpayers' tax knowledge (Saad, 2014). On the one hand, the legislation must be clear, easy to understand for all taxpayers, and on the other hand, the level set for taxes is also important. In other words, the taxpayer must be aware that additional state services cannot be obtained if individual payment obligations are not met,

because the public sector needs funding; also, the typology and values of tax obligations must be adapted to the national economy, because they will influence the way the taxpayer will direct their income.

The taxpayer's behaviour is a response to a series of stimuli, external - related to the economic, social context, but also internal - psychological, the latter being determined by the way the taxpayer perceives the tax system to which they must submit, the fairness of the tax system, the behaviour of other taxpayers (Erard & Feinstein, 1994). The compliance strategies that revenue-collecting institutions must have must aim at a "partnership" with the citizen, so that the latter responds positively and of their own intention to the fiscal requirements. The desideratum of fiscal compliance is voluntary compliance and the use of coercive force of law is only for exceptional situations, all the more so as, globally, capital mobility opportunities increase the size of tax avoidance (Phua, 2015). Frey (1992) provides evidence that strict monitoring and punishment lead ultimately to greater noncompliance.



Figure 1. Spectrum of taxpayer attitudes to compliance

Source: Organisation for Economic Co-operation and Development (2009), p. 11.

Voluntary compliance is related to the state's ability to increase fiscal morality among citizens and represents the consolidation of a social norm of compliance (Luttmer, 2014). For the state, a low level of voluntary compliance is a fiscal risk and coincides with the possibility of not collecting the tax claims at the expected level (Porumboiu & Brezeanu, 2019). Trust in public institutions is strongly correlated to tax morale (Torgler, 2007). The fiscal behaviour of the population is influenced primarily by the level of income, but the influence of other factors is also indisputable, and we randomly list some of them: the perception of tax rules, the type of link created with certain public institutions, risk aversion, education, standard of living, etc. Therefore, the fiscal revenues of the state are a result of the fiscal policy and the economic situation (Mara et al., 2009) on the one hand, but also of the fiscal behaviour of the taxpayer, on the other hand.

4. Aims of the Research and Research Methods

This article aims to quantify the influence that several variables have on tax revenues in European Union countries, and to indicate whether more frequent

internet use and digitisation could increase voluntary compliance and the collection of fiscal obligations.

In this analysis, in order to measure the impact of several independent variables on the tax revenues from the states under study, we used as a dependent variable the share of fiscal revenues in the gross domestic product, which ensures the proportionality of the compared values. Figure 2 indicates that, for the most part, the level of taxes collected in GDP remained constant in the analysed states, between the two reference periods. However, there are indisputable differences between the weights from one country to another, from 27% of GDP in Romania or about 30% in the Baltic States, to 46% of GDP in Belgium or Denmark. If we take into account the absolute level of GDP of the mentioned countries, it can be deduced as a consequence that the amounts that make income to the national budgets are incomparable, hence the different capacity of the governments to develop the public sector.

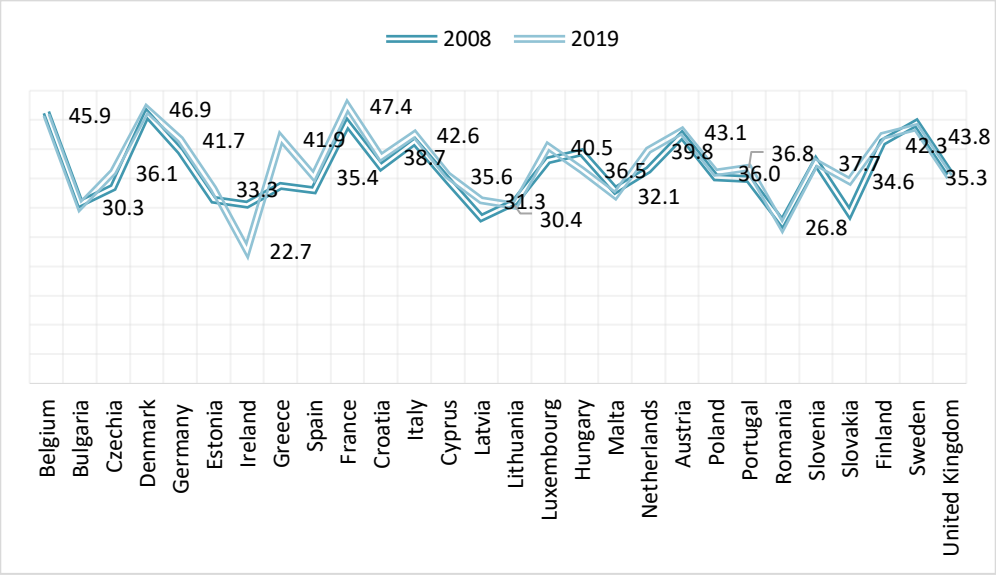


Figure 2. Fiscal revenues related to GDP in 2008, 2019 respectively, in European Union Member States

Source: Eurostat Database.

To see if the level of tax revenues in GDP is influenced by the level of education, the share of tax revenues in national net income and the degree of internet use in relation to public institutions, we conducted an analysis using Eurostat data for 2008-2019 on the Member States of the European Union. The method used is panel regression, comprising the following variables:

Table 1. Variables used in the present analysis

Variable name	Variable type	Calculation	Variable expression
Taxes/GDP	Dependent	Total taxes and fees (which constitute tax revenue), relative to gross domestic product (GDP)	%
Taxes/NNI	Independent	Total taxes and fees (which constitute tax revenue), relative to national net income (NNI)	%
Digital	Independent	The degree of Internet use in relation to public institutions, compared to the total contacts with these institutions	%
Education	Independent	The population that graduated a form of tertiary education (university, college, business school), from the total population	%

Source: Authors' synthesis.

5. Findings

We first proceeded to calculate the correlation coefficients, to see if the variables used are strongly correlated or not. The result indicates a moderate correlation between the level of taxes in GDP and that of taxes relative to NNI, the other correlations being weak or non-existent.

Table 2. Coefficients of determination (Pearson)

Variables	Taxes/ GDP	Taxes/NNI	Digital	Education
Taxes/GDP	**1**	0.631	0.275	0.025
Taxes/NNI	0.631	**1**	0.276	0.063
Digital	0.275	0.276	**1**	0.410
Education	0.025	0.063	0.410	**1**

Source: Own calculation.

Table 3. Multiple linear regression results obtained using Excel

rsq	0,584			
adjrsq	0,580			
	Estimate	Std. Error	z-value	Pr(>|z|)
(Intercept)	11.085	1.418	7.819	<0.0001
Taxes/NNI	0.564	0.030	18.515	<0.0001
Digital	0.037	0.009	4.269	<0.0001
Education	-0.079	0.025	-3.159	0.002

Source: Own calculation.

From the point of view of the three explanatory variables, only the level of taxes in the national net income and the share of internet contacts with public institutions are strongly statistically significant as the probabilities associated with the coefficients (Pr (> | z |)) are less than 1%. Considering the coefficient of determination R-sq, 58% of the variation of fiscal revenues in GDP is explained by the three independent variables, the difference of 42% being determined by variables that were not included in this analysis. The model equation obtained is:

Taxes/GDP (%) =11,085 (%) +0.564*Taxes/NNI (%) +0.037*Digital contact (%)-0.079*Education (%) (1)

```
Fixed-effects (within) regression               Number of obs      =       336
Group variable: Tara1                           Number of groups   =        28

R-sq:                                           Obs per group:
     within  = 0.5758                                         min =        12
     between = 0.6609                                         avg =      12.0
     overall = 0.6562                                         max =        12

                                                F(3,305)           =    138.02
corr(u_i, Xb)  = -0.0373                        Prob > F           =    0.0000
```

TaxePIB	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Taxevenitn~l	.5669785	.0326409	17.37	0.000	.5027486	.6312084
Contactdig~l	.035657	.0088359	4.04	0.000	.0182701	.053044
Educatie	-.0764507	.0258277	-2.96	0.003	-.1272738	-.0256277
_cons	10.94825	1.32522	8.26	0.000	8.340514	13.55598
sigma_u	3.4440426					
sigma_e	.96148518					
rho	.92769731	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(27, 305) = 146.90                     Prob > F = 0.0000
```

Figure 3. Fixed effects regression results obtained using Stata
Source: Own calculation.

For estimating the model using the Stata software (Torres-Reyna, 2007), the results are as shown in Figure 3. Since the associated value Prob> F = 0.0000 is less than 0.05, the fixed effects are appropriate. Compared to the multiple regression estimated by Excel, we notice that the values of the regression coefficients, as well as their sign, are very close. According to the values displayed, the model equation is the following one:

Taxes/GDP (%) =10.948 (%) +0,566*Taxes/NNI (%) +0,035*Digital contact (%)-0,076*Education (%) (2)

Figure 4 shows the degree of use of the Internet by the population in interaction with public institutions, as a way to quantify the digitalisation of contact of individuals and legal entities with the public sector. Differences between states are extremely large.

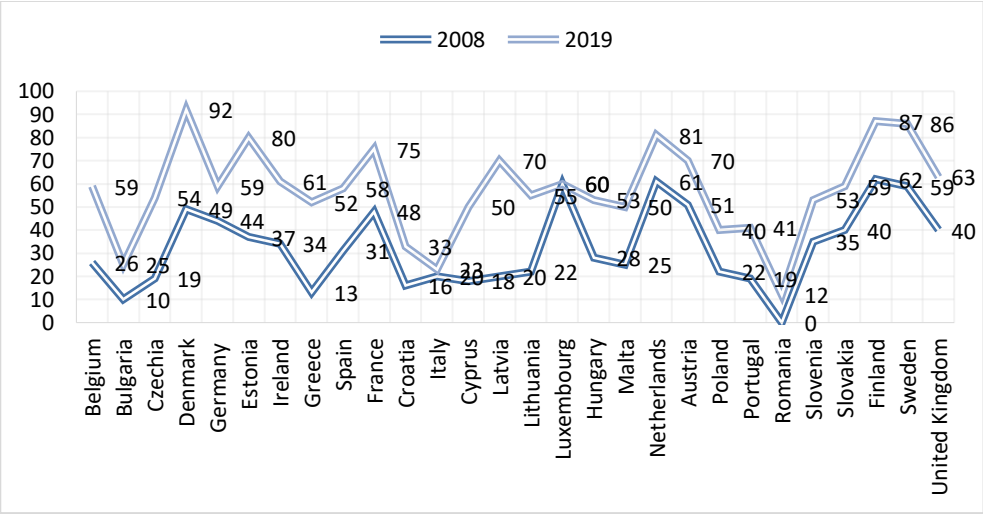


Figure 4. Digital contact with public institutions in 2008, 2019 respectively, in European Union Member States

Source: Eurostat Database.

In the case of Romania, the share of internet connections between citizens and public institutions in the period 2008-2019 was about 11% of total contacts, the lowest share in the European Union. At the opposite pole are countries with weights such as: Denmark - 82%, Sweden - 76%, Finland - 75%. There is a very big difference in the use of the Internet to contact public institutions by citizens of the European Union, with differences between states exceeding 50 percentage points.

If Romania had a use of the Internet in contact with public institutions similar to the countries mentioned in 2019, for example 75%, all other independent variables remaining unchanged, the value of tax revenues could have reached 30% of GDP, instead of 26.8%. Of course, tax revenues are not limited to the way digitalisation is used by the public sector, but its importance is undeniable. However, the share of tax revenue collection in GDP is an aspect to be studied closely, because it is not only the lack of digitalisation that explains the fact that Romania has the lowest share of tax revenue in GDP, of only 26.8% in 2019, while the EU average is 37.3%.

6. Conclusions

Voluntary compliance, rather than digitising public institutions, is a priority for most governments. EU member states with a low share of revenue in GDP need to

be aware that lower tax revenues also mean a lower financial capacity of governments to support the public sector. Fiscal strategies must be adjusted so as to increase the degree of voluntary compliance and the trust in institutions, and to ensure higher fiscal revenues to national budgets. Also, the trend of digitalisation in the economy must be implemented in the institutions of the states that have a low digital contact of the population with the public sector. The level of taxes related to income has a certain influence on tax revenues, and to a lesser extent the degree of use of the Internet with public institutions.

From the perspective of current social requirements, we can say that, regardless of the ability to increase or not the collection of tax receivables, the digitalisation of the public sector, including tax revenue institutions, is a necessary step in adapting state institutions to technological progress. The digitisation of the public sector must be conceived as a strategy to improve the service provided (for the citizen / taxpayer / beneficiary) and, at the same time, to increase the procedural efficiency (for the user institution).

In this case, with regard to the collection of tax revenues, digitisation must be a series of services for the taxpayer through which he can declare, verify, pay unconditional obligations such as the work schedule, and for tax institutions, it must be a lever to improve the relationship with the taxpayer, with an effect of increasing the degree of tax compliance.

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Viral Marketing and Its Influence on Customer's Purchasing Decisions: A Quantitative Study in Lebanon

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Abstract

Since the use of social media has increased dramatically allowing marketers to use it as an advertising tool and to communicate with customers frequently, viral marketing has become one of the most important strategies adopted by marketers to build brand awareness and brand engagement that will ultimately affect consumers' buying decisions. So far, limited data is available about viral marketing in the Lebanese market. This research aims to study the effect of viral marketing on the purchasing decisions of customers. A quantitative study was conducted through distributing a survey to a sample of 599 participants. The results showed that most people take their friends' and families' advice when purchasing a product online and they tend to share their product experience on social media and the content they are interested in. Moreover, viral marketing influenced the buying decision of customers through their ability to gather information from other consumers' comments.

Keywords: purchase decision, social media, viral marketing, viral message, word of mouth.

JEL Classification: M31.

1. Introduction

As traditional marketing is becoming less attractive to customers, marketers are shifting towards applying more technological methods to gain customers' trust and arouse their interest. One of the most important innovative techniques used nowadays is viral marketing. With the growth of internet use and extensive use of social media, word-of-mouth communication has changed from being traditional to becoming incorporated in the world of web to improve customer reach (Sharma & Sharma, 2015). Through the use of social media, mainly Facebook and YouTube that are considered as the main communication channels of viral marketing, customers are able to exchange data, posts, images, and experiences, whether

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personal or advertising messages, that will assist them in taking important purchasing decisions (Hamed, 2017; Reichstein & Brusch, 2019).

As marketers intend to develop their social media strategy, they think of the possible ways to engage their customers as to become active members with the product or brand in order to build loyalty and long-term relationship with their customers (Miller & Lammas, 2015). Moreover, studying the online buying behaviour of customers and the way they retrieve marketing messages and take action should be examined (Haryani & Motwani, 2015). A lot of factors should be considered when setting a viral marketing strategy and one of the factors is the influencer. Influencers also will play a vital role in persuading and spreading of messages in online networks (Miller & Lammas, 2015).

The aim of this paper is to show the impact of viral marketing on consumer buying behaviour in Lebanon and to reveal whether different viral marketing content on social media will affect customers' decisions towards products or brands. Nevertheless, the effect of friends' and families' comments, shares, and likes to a post on consumer decision will be analysed. This research will support the Lebanese database and will give researchers an idea about the Lebanese customer purchasing behaviour and viral marketing impact on them. In addition, this research can be used by marketers who wish to include viral marketing in their strategy.

2. Problem Statement

2.1. Literature Review

Traditionally word-of-mouth is known to be a one-to-one communication process through which customers share information regarding products or brands with their families and friends (considered strong bond) and with strangers (considered weak bond). However, nowadays with the evolution of the Web and technology use, this communication process has been transferred to online networks such as Facebook, Instagram, YouTube, Snapchat, Twitter, etc. and thus got named as electronic word-of-mouth (e-WOM) (Lopez & Sicilia, 2012).

E-WOM, a non-personal communication process, is considered as a trusted source for customers to gather data and take purchasing decisions as they see it deprived from marketing purposes. That's why e-WOM is shown to affect brand image, engagement, and equity (El Baz, et al., 2018). On the other hand, viral marketing (VM) is a promotional method used by organizations where marketing messages are designed to be widespread from one person to another through encouraging or rewarding them (for instance, like our product or share our post) (Alhelberg, 2018). Other terminologies used for viral marketing include: buzz marketing, referral marketing and electronic or internet word-of-mouth marketing (eWOMM) (Irwansyah, et al., 2019).

As customers take the point of view of people they trust before purchasing products, influencers will play an important role in shaping the customers'

purchasing decisions where influencers have to ability to largely affect the distribution of viral marketing messages (Hirvijarvi, 2017).

Moreover, informative, humour, and emotional content was seen to enhance the customers' motivation to purchase (Hassan, 2018). According to a three-stage (reading, interest, and referral) model analysis studied by Pesher et al. (2013), entertaining content will attract customers to read viral messages, build interest, and refer it to others.

According to Haryani & Motwani (2018), effective viral marketing strategies with clear content, popular brand, and secure entry affect the purchasing decisions of customers. Furthermore, according to a research done by Sawaftah, et al. (2018) on 177 participants, it was shown that viral marketing affects the buying behaviour of consumers more the e-WOM, and age was not proved to be considered a factor of influence. Moreover, a questionnaire conducted by Hamed (2017) on 710 consumers revealed that there is a strong and tight connection between viral marketing and consumer's intention to purchase where viral marketing will enhance the consumers' purchasing actions.

A study by Irwansyah (2019) on 352 individuals showed that viral marketing influenced the purchasing behaviour of customers due to the participants' ability to obtain data from other consumers' comments.

According to Ahmed (2018), his research on 650 individuals indicated that families and friends and viral marketing hugely affect the purchasing decision of consumers. Thus, purchasing decisions are mainly influenced by the spread of word-of-mouth, comments, and effective viral marketing strategies.

Sharma & Sharma (2015) stated that consumers who are interested in a product or information tend to spread it as these same consumers used to receive viral messages from friends and families on social media. Thus, people tend to trust shared posts or messages from friends and families. In addition, purchasing decisions are affected by interesting, informative, creative viral message content especially for adolescence.

3. Research Question

As insufficient data is available in Lebanon regarding studying viral marketing and its effect on buying decisions, this study will answer the below research questions:

Q1: How do customers in Lebanon respond to viral marketing messages/Ads?

Q2: Do comments/likes/shares affect Lebanese customer purchasing attitude?

Q3: What is the type of content that Lebanese customers prefer to share and get motivated to purchase?

4. Research Methods

In order to measure the effect of viral marketing messages posted on social media on the purchasing behaviour of consumers, primary and secondary data was collected, and a quantitative descriptive analysis was conducted. The primary data

included a survey conducted on 599 Lebanese candidates created by Google forms and distributed on social media platforms, mainly Facebook and Instagram. The sampling was non-probability sampling as participants voluntarily chose to fill the form. The survey included demographic information such as age, gender and education level. Moreover, 39 questions were addressed to conclude on consumers' buying behaviour, use of social media, and effect of viral advertisements on purchasing behaviour. The secondary data was collected through academic electronic resources and databases.

5. Findings

5.1. Demographic Information

Of the 599 candidates questioned, 36 % were females and 64 % were males. However, ages were distributed as shown in Figure 1. The majority of those who participated were between 18-25 years, who represent the main population that use social media. In addition, data collected regarding the educational level of the candidates showed that 67 % hold a university bachelor degree, 20 % a master's degree, 7 % a PhD degree, 3 % a secondary school degree, and only 3 % were not educated at all.

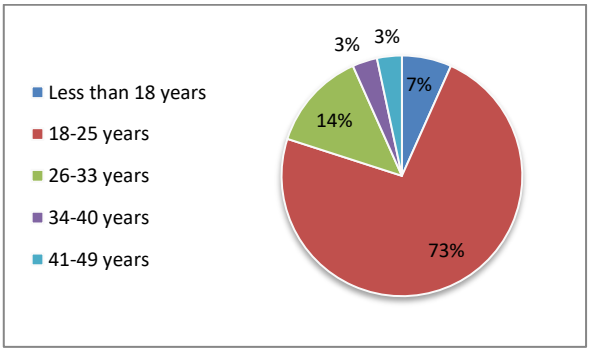


Figure 1. Age distribution
Source: Author's development.

5.2. Viral Marketing/Social Media Use/Purchasing Behaviour Information

i. What social media platforms do you use?

In Lebanon, the main platforms used are Facebook (43.9%), Instagram (53.9%), and YouTube (33.9 %) (Figure 2).

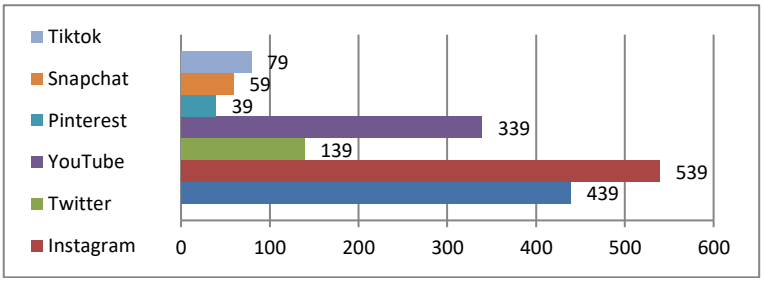


Figure 2. Number of customers who use social media platforms
Source: Author's development.

ii. Have you ever decided to purchase a product that was advertised on social media?

When asked about their purchasing behaviour, consumers were more prone to purchase products when exposed to advertisements on Facebook (70 %), Instagram (67 %), YouTube (23 %), Snapchat (3 %), Pinterest (3 %), Twitter (6 %), and Tiktok (3 %). These results go along with the number of consumers who use each platform (Figure 3).

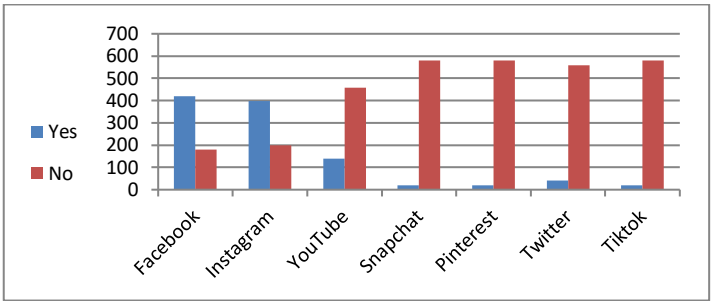


Figure 3. Number of customers who purchase on social media
Source: Author's development.

iii. Do you usually read customers' comments before purchasing a product? Do you usually look at the number of shares/likes a post has before purchasing a product?

It has been shown that 90 % of the consumers are interested in reading customers' comments before purchasing products while only 10 % do not read comments before their purchases. Moreover, the study showed that 70 % of the people take into consideration the likes and shares of posts before purchasing their products, while 30 % do not.

iv. If you get interested in a product, do you share the post/ message with your friends or family? Do you get influenced to buy a product or service after hearing/reading about if from friends or family?

About 80 % of the respondents stated that they share a post or message if they found it interesting, while 20 % do not.

In addition, 80% are convinced to purchase a product or a brand if they received a post or a message from their friends or family, while 20 % are not convinced.

v. *Do you share a POSITIVE experience with a product with your friends and families on social media? Has reading a POSITIVE customer response or comment about a product changed your decision about buying a product or service?*

Around 60 % of Lebanese customers share positive experiences, while 40 % do not.

On the other hand, 87 % of those who receive positive comments or responses on products will get influenced to purchase the product, while only 13 % do not get influenced.

vi. *Do you share a NEGATIVE experience with a product with your friends and families on social media? Has reading a NEGATIVE customer response or comment about a product changed your decision about buying a product or service?*

Half of the respondents declared that they share a negative experience and 50 % do not. Furthermore, 83 % changed their purchasing decision when reading negative comments or negative responses from customers, while 17 % were not affected. Consequently, those who share negative experiences tend to affect 83 % of the customers' purchasing decision. That shows the huge effect negative e-WOM has on customers' buying behaviour (Figure 4).

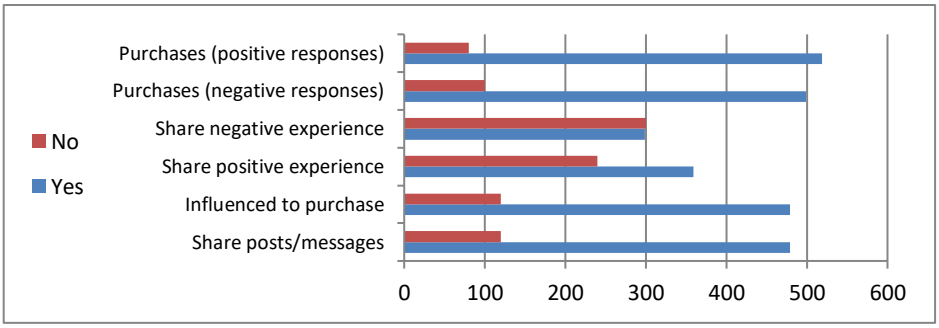


Figure 4. Sharing posts and experience versus the influence to purchase
Source: Author's development.

vii. *Do you purchase a product immediately and spontaneously after seeing an interesting advertisement on social media?*

When questioned whether they purchase a product immediately after being exposed to a viral message, 67 % stated that they do not, while 33 % said they will.

viii. What type of viral message content do you share?

As revealed, consumers are more likely to share humour, surprisingly negative, informative, and engaging content. Therefore, for viral marketing messages to spread, it is best to include the above content (Table 1).

Table 1. Measurement of viral content sharing

Viral Content	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Humor	37%	40%	17%	3%	3%
Sad	3%	37%	43%	7%	10%
Negatively Surprising	30%	37%	30%	0%	3%
Positively Surprising	13%	13%	27%	24%	23%
Informative	40%	27%	27%	3%	3%
Popular Song	20%	27%	37%	3%	13%
Celebrity	16%	17%	43%	7%	17%
Engaging	27%	35%	34%	0%	4%

Source: Author's development.

ix. What type of viral advertisement content will motivate or attract you to purchase a product?

Accordingly, the most types of content that encourage or convince consumers to purchase are the informative, humour, popular product, and limited offer content. That is why, such content will motivate consumers to take action and purchase if embedded in viral marketing messages (Table 2).

Table 2. Measurement of motivation per viral content

Viral Content	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Humor	32%	29%	32%	7%	0%
Informative	40%	23%	33%	4%	0%
Violent	3%	13%	34%	20%	30%
Sexual/Romantic	10%	7%	30%	33%	20%
Emotional	7%	36%	33%	7%	17%
Fear	7%	10%	36%	27%	20%
Celebrity	7%	33%	27%	20%	13%
Musical	17%	23%	40%	10%	10%
Limited Offer	20%	33%	23%	17%	7%
Popular Product	23%	37%	27%	10%	3%

Source: Author's development.

x. *How much is your purchasing decision affected if a friend/family shared with you a post or message on social media?*

Consequently, sharing posts and messages on social media especially by our friends and families will actually affect our purchasing decision as 23 % are shown to be strongly affected and 47 % to be affected with the shares friends and families send to them on social media (Figure 5).

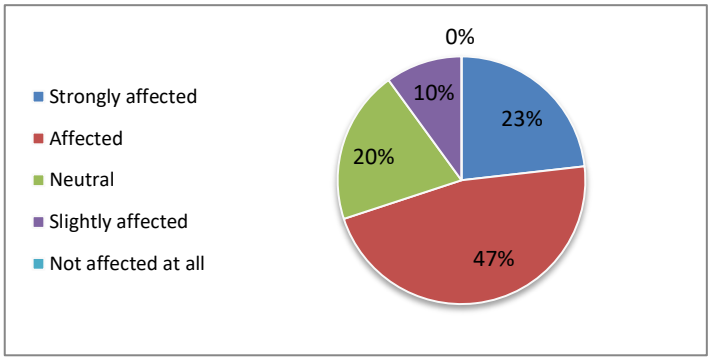


Figure 5. Measurement of purchasing decision influence
Source: Author's development.

xi. *If a product is viral on social media (its post is spread everywhere), do you try it?*

Viral products on social media will be purchased by 63 % of consumers, while 37 % will not try it.

6. Conclusions

In Lebanon, when deciding on the target market for viral marketing strategy, it was shown that customers between the age of 18 and 33 years spend most of their time surfing Facebook and Instagram. Moreover, the fact that most of those who participated in the survey are educated, this will decrease the research bias making the results more valid as participants are considered more knowledgeable about the use of social media and Ads.

In answering our first and second research question, responding to viral marketing messages can be assessed by marketers through the percentage of likes, shares, and comments. As the research revealed, consumers use less Pinterest, Snapchat, Twitter, and Tiktok, therefore their purchasing behaviour will be less affected as they are less exposed to advertisements on such platforms. However, their decision to purchase after the use of Facebook, Instagram, and YouTube is higher as they adopt such platforms more. In addition, Lebanese customers being disclosed to viral messages will not guarantee customers' purchasing action. The presence of advertisements on social media is triggering customers to purchase

products that they find interesting. However, as the customer likes the product, he/she will turn to take a look at the comments, likes, and shares. Customer satisfaction is shown to be an important factor to the spread of viral messages and it is measured through the number of shares/likes. Thus, the more customers are satisfied, the more positive comments, likes, and shares will support the post or message that will in turn increase the customer willingness to spread positive word-of-mouth, the faster marketers will reach their ultimate goal of action, purchasing. Thus, popular products with high shares/likes are more subject to high purchasing level than those with less popularity. In conclusion, the ability to engage customers will reflect the success of viral marketing programs and will alter the purchasing decisions of customers.

Moreover, in general, companies who work on social media are afraid of the negative feedbacks of customers that will generate a negative e-WOM. According to the data presented, Lebanese people tend to share more positive experience than negative ones on social media, accordingly, giving companies more time to correct any misunderstanding or dissatisfaction before reputation and image is affected.

On the other hand, viral marketing content is very important in persuading customers to engage and purchase. As shown, Lebanese customers mainly get motivated by informative, humour, and popular products content that must be used by marketers to increase the chance of customers' response to viral marketing messages. Thus, responding to the third research question, when occupying a business in Lebanon, informative, humour, and popular content are the best to be used in marketing products with an objective to enhance the purchasing action of customers.

Oppositely, limitations of the study include the age range of participants where still older educated customers who have high purchasing power can be affected by viral messages. In addition, although a definition was stated for participants to understand viral marketing concept, however, there is a possibility that some were not able to differentiate it from word-of-mouth.

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The Importance of Tools Specific Mobile Networks and Social Online Networks for Start-Ups in Bucharest

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Abstract

Currently, intelligent communication systems, especially those in the online environment, are constantly expanding, the main step forward being the use of models based on the specificity of the decision-making processes and the analysis criteria, thus constituting various decision variants, which are evaluated and presented to the decision makers.

Mobile networks and online social networks are the most accessible marketing tools that involve the target audience, but are also among the most important and topical tools for promoting a start-up.

In order to survive in the market, it is necessary that start-ups constantly adapt to the changes of the needs and expectations of customers, also considering the strategies used by the competitors. The most important element is the integrated marketing communication, which can be an advantage that can differentiate the start-up from competitors, being valid in the long term in the conditions of continuous change of the market on which it activates and of the actions of the competitors.

For start-ups, TV and radio commercials are almost impossible, involving high costs, however mobile and online social networks remain the most affordable and beneficial for businesses that are just starting out. The latter can create marketing and promotion campaigns, the main starting point being the keywords, market targeting by audience and location, etc.

The main advantage of integrated marketing communication through mobile networks and online social networks is that the message transmitted by a start-up is the same, regardless of the tools for disseminating them.

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This article is based on a quantitative research carried out at the level of the young entrepreneurs from Romania in order to identify the role of the specific tools of mobile networks and online social networks for start-ups set up by them from European funds.

Keywords: marketing communication, integrated marketing communication, start-ups, mobile networks, online social networks, online marketing, marketing tools.

JEL Classification: L31, M31.

1. Introduction

The Internet is a global network of networks that may be accessed by computer, mobile phone, digital television, and other devices. The number of Internet users continues to rise, and communication through the Internet has become an everyday occurrence. The use of the Internet by businesses for brand display and building has become commonplace, if not unavoidable (Majercakova and Madudova, 2016).

Online marketing encompasses electronic customer relationship management and digital customer data management, as well as the use of digital media, such as the web, e-mail, and wireless media.

Mobile marketing, according to Andreas M. Kaplan (2012, p. 130), is a marketing activity conducted through a ubiquitous network to which consumers are always linked via a personal mobile device. To be considered for mobile marketing, three requirements must be met.

First and foremost, there should be a pervasive network. This phrase was invented by Mark D. Weiser (1991), chief scientist of Xerox PARC in Palo Alto, who began with the idea that a ubiquitous network is not basically a single network, but rather an amalgamation of multiple networks.

Secondly, the mobile network should be accessible to all users at all times. When it comes to mobile phones, this is a regular occurrence because most people rely so heavily on them that it is unusual to leave the phone at home. Continuous access, on the other hand, is no longer dependent on the user, but rather on the technology, because the gadget must be turned on continually.

Finally, the possession of a personal mobile device. The mobile device can be defined as any instrument that allows access to a ubiquitous network beyond a defined access gateway. The classic example of the mobile device, which is commonly used, is the mobile phone.

Social marketing - online social networks

According to Kaplan & Haenlein (2010, p. 61), "Social media is a collection of Internet-based apps that are built on some of the conceptual and technological underpinnings of Web 2.0 and enable the production and exchange of user-generated content." Keeping the definitions of social media and mobile marketing in mind, we describe mobile social media as any mobile marketing application that allows for user-generated content training.

Companies that use online social networks are often equipped with some information about the consumers they deal with. Also, in general, consumers agree to get knowledge from the company.

2. Problem Statement

It is explicit that conventional social media offers enormous opportunities for companies in various sectors. Mobile networks and online social networks are considered the stronger tools for online marketing, which is the biggest source of promotion for small and medium businesses today (Kaplan and Haenlein, 2011).

Market Prospecting

Mobile networks and online social networks provide important data about consumer habits. Now companies can easily obtain details of check-in of consumer, and their experiences can be seen in the reviews. These networks have made it easier for companies to obtain information about age, gender, how many customers visited the store, who are frequent visitors and also which customer spends more time in the store.

When this data is properly produced using various data extraction technologies, it does not provide organizations with the chance to manage their consumers efficiently. In general, it is claimed that social media provides customers more power. However, social media applications on mobile offer a certain amount of control to businesses in order to efficiently run their business.

Marketing Communication

There are two forms of mobile social network communication: company-to-consumer (B2C) communication and user-generated content (UGC) (User Generated Content).

An example of B2C social mobile communication is Cheryl Ann Cole's marketing of her album Messy Little, which was released in 2010 with the aid of Facebook Places (Hosea, 2011). People who passed through 114 ads in their hometown and London were encouraged to check in at the billboard. When the client checked in at that location, they were routed to Cheryl's Facebook page and given two complimentary tickets to her X-Factor performances. Furthermore, the location was noted in both the artist's shared calendar and the users' calendar, which could be viewed by friends. This method is a prime example of viral marketing promotion.

If a firm accomplishes anything out of the usual, the second form of communication, i.e. user-generated content, is a fantastic advertising tool. Users have the potential to turn such a basic statement into viral marketing pushes (Kaplan and Haenlein, 2011). In April 2010, Mc Donald's implemented a promotional plan that included the distribution of $5 and $10 gift certificates to 100 users who checked in at a Mc Donald's location in particular. This campaign has grown so successful with consumers, that a 33% increase in Mc Donald's check-in generated less than $1,000 in spending.

Discounts and Promotional Discounts

We live in a digital consumption era. Various mobile social media applications enable the personalization of marketing for specific clients and for a certain time period.

The marketing of new Virgin America goods is a typical example. When it began the California-Cancun service, it conducted a promotional campaign utilizing mobile social networks, which users registered for via Loopt from one of three Border Grill Taco trucks in San Francisco and Los Angeles.

Similarly, customers are given a "Barista Badge" if they visit five different locations. Sales promotions are typically thought to be tedious, but with the introduction of mobile socializing apps, they have become extremely exciting, quick, and cost efficient.

Customer Loyalty Programs

Every corporate organization aspires to long-term growth. It is attained, however, not through a single purchase dictated by sales promotion activities, but through recurring commercial interactions between the consumer and the company via client loyalty. A client, for example, might acquire the status of gold, silver, or bronze if they check in at specific places on a frequent basis.

Similarly, Foursquare bestows the title of Mayor on a client who has checked in at a location on a regular basis for the last 60 days. Every Wednesday, the Mayor receives a complimentary pizza from Domino's.

Tasti D-Lite, a New York-based frozen dessert firm, encourages customers to link their Foursquare and Twitter accounts to D-membership Lite's cards (Clifford, 2010). Consumers who agree to this are awarded extra bonus points for every purchase they make and, at the same time, their Foursquare and Twitter profiles are updated, raising awareness of the brand D-Lite keys. As a result, it benefits both customers and D-Lite keys.

3. Research Questions/Aims of the Research

A research was carried out at the level of the young entrepreneurs from Romania in order to identify the role of the specific tools of mobile networks and online social networks for start-ups set up by them from European funds.

The main objectives of the present research were:

- measuring the importance of the specific tools of mobile networks and online social networks in the process of prospecting the market in order to determine the potential customers and the target market segment;
- identifying the importance of specific tools for mobile networks and online social networks in the process of promotion at present;
- determining the degree of interest of the producers for attracting new customers by offering discounts and promotional discounts;
- identifying the need to use specific tools for mobile networks and online social networks for greater customer loyalty.

For the analysis and interpretation of the results, the information provided following the application of the questionnaire was structured and organized in the form of graphs and tables, for easy highlighting of the main distinguishing elements regarding the role of the specific tools of the mobile networks and the online social networks for the start-ups set up by them from European funds.

4. Research Methods

The research was carried out at the level of 100 respondents, by completing a physical questionnaire, the sampling method chosen being of an improbable type, namely snowball. The respondents were young entrepreneurs who set up a business through European funding, between the ages of 20-45 years, with middle and higher education, according to the table below.

Table 1. Socio-demographical data

	Sex		Age			Studies		Residence	
	Female	Male	20-25	26-35	36-45	medium	higher	Urban	Rural
Respondents	30	70	34	41	15	35	65	89	11

Source: Authors' contribution.

5. Findings

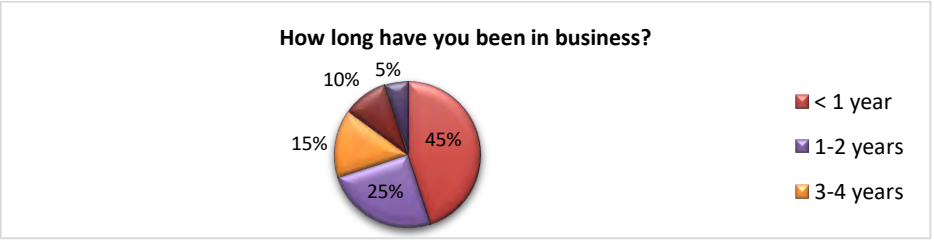


Figure 1. Seniority in the field
Source: Authors' contribution.

The people who participated in this study were represented mostly by young entrepreneurs who have a business of less than one year (45%) and are up to date with everything new in terms of innovative tools for marketing campaigns. A share of 25% of the respondents have a business of 1-2 years, 15% have a business of 3-4 years, 10% of 4-5 years and the rest of 5% are business entrepreneurs established for more than 5 years.

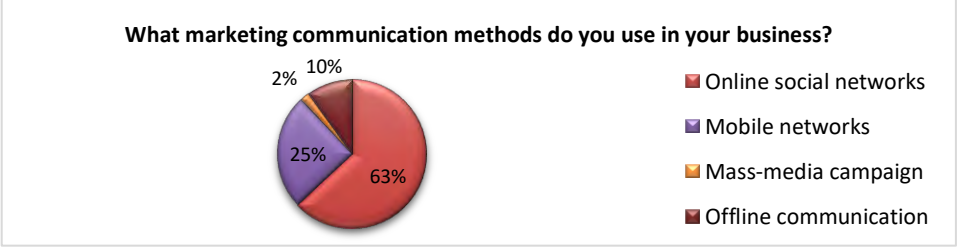


Figure 2. Marketing communication methods
Source: Authors' contribution.

The persons surveyed in the study specified, for the most part, that they use as a method of marketing communication, online social networks (63%), or mobile networks (25%), a percentage of 10% still resort to classical methods of communication in the environment, i.e. offline, and only 2% allow themselves to invest in media campaigns.

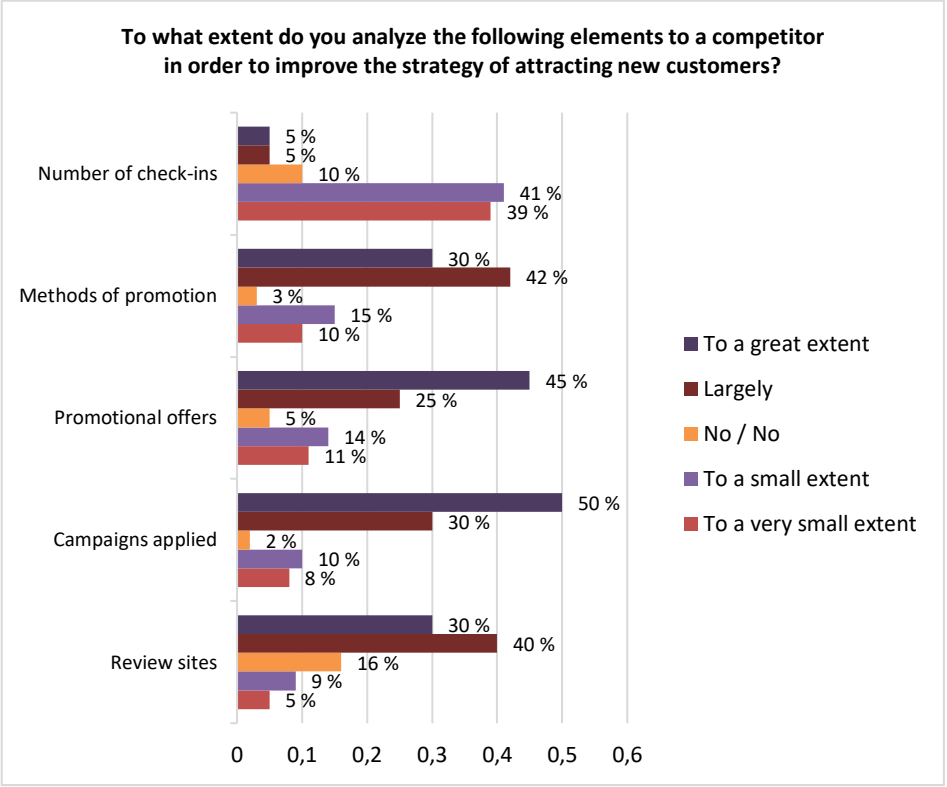


Figure 3. Competitor element analyzed

Source: Authors' contribution.

Specific instruments of online social networks and mobile networks are quite used by small companies in the market to attract new customers. Often these are used by competitors to improve services and to bring something new to the market, which will guarantee their success.

Most respondents indicated that they use the following tools for this process, to a large and very large extent: reviews (70%), online campaigns that the competitors use, as a model (80%), their online promotional offers (70%)) and the methods of promotion that the competition uses (72%). But the majority also specified that the most important and not considered are the check-ins that potential customers give in a certain competition store (80%).

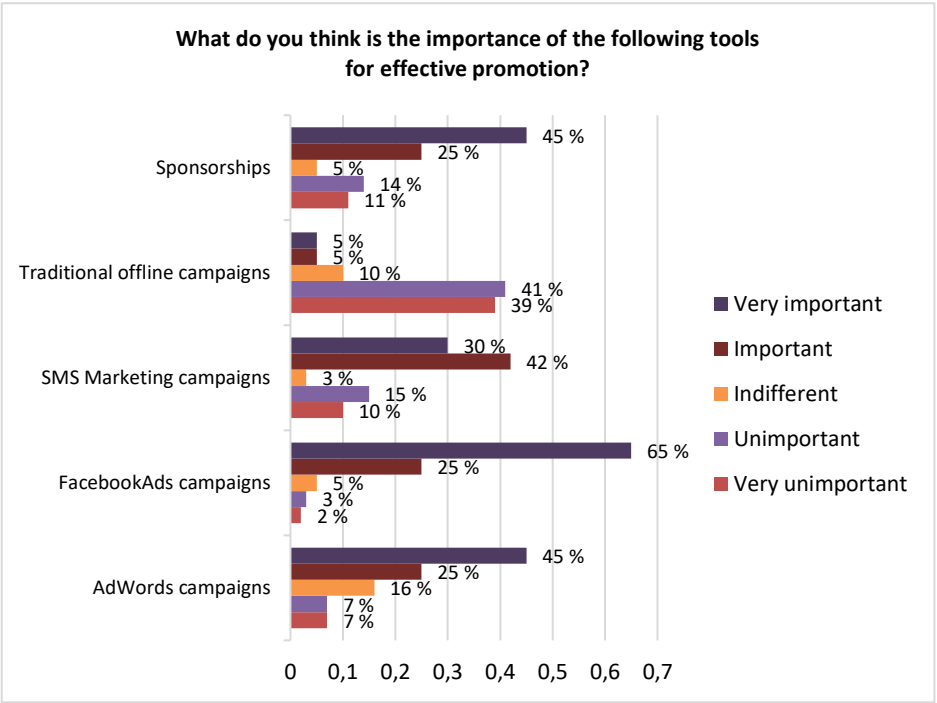


Figure 4. Importance of tools

Source: Authors' contribution.

In the modern era, traditional marketing has been replaced by online marketing in most cases. Thus, the tools specific to online social networks and mobile networks play a vital role in the marketing activity of companies.

Most of the respondents mentioned that they use promotion tools such as: for this process, the following tools to a large and to a very large extent: AdWords campaigns (70%), Facebook Ads campaigns (90%), SMS Marketing campaigns (72%) and sponsorships (70%). But most also specified that the least used are now traditional offline tools (80%).

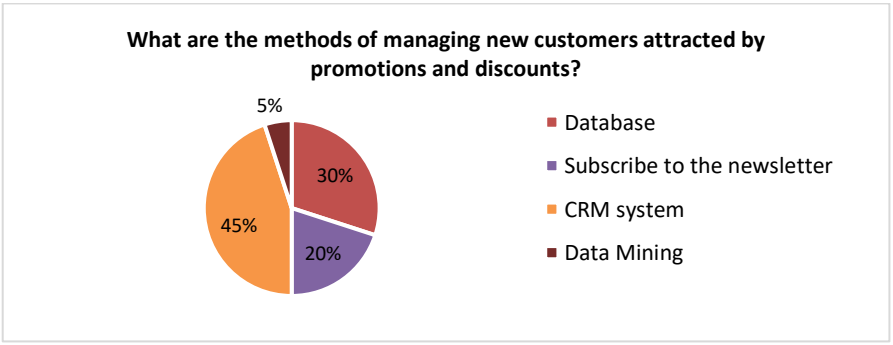


Figure 5. Methods of managing new customers attracted

Source: Authors' contribution.

Most of the respondents stated that they believe he best way to attract customers is by offering promotions and discounts. For the management of the clients attracted, the respondents specified that they use CRM systems (45%), databases (30%), the newsletter system (20%) and very few of them specified that they use Data Mining systems (5%).



Figure 6. Future strategy

Source: Authors' contribution.

Respondents opined that they can retain customers in the following ways: Provide samples (25%) Partnering (25%) Providing output of loyalty cards (30%) Providing rewards by buying repeated products (20%).

5. Research Limits

It should be mentioned that this study is limited to a number of 100 respondents, from the entrepreneurial environment, and the results obtained are not 100% representative.

Another limitation is the age category of the respondents, which are mainly young and related to the digital environment, and they represent a limited percentage of Romanian entrepreneurs.

6. Conclusions

The people who participated in this study were represented mostly by young entrepreneurs who have a business of less than one year (45%) and are up to date with everything new in terms of innovative tools for marketing campaigns. A share of 25% of the respondents have a business of 1-2 years, 15% have a business of 3-4 years, 10% of 4-5 years and the rest of 5% are business entrepreneurs established for more than 5 years.

The persons surveyed in the study specified, for the most part, that they use as a method of marketing communication social networks (63%), or mobile networks (25%), whereas a percentage of 10% still resort to classical methods of communication in the environment, i.e. offline, and only 2% allow themselves to invest in media campaigns.

The tools specific to online social networks and mobile networks are quite used by small companies in the market, to attract new customers. Often these are used by competitors to improve services and to bring something new to the market, which will guarantee their success.

Most respondents indicated that they use the following tools for this process, to a large and to a very large extent: reviews (70%), online campaigns that the competitors use, as a model (80%), their online promotional offers (70%) and the methods of promotion that the competition uses (72%). But the majority also specified that the most important and not considered are the check-ins that potential customers give in a certain competition store (80%).

In the modern era, traditional marketing has been replaced by online marketing, in most cases. Thus, the tools specific to online social networks and mobile networks play a vital role in the marketing activity of companies.

Most of the respondents mentioned that they use promotional tools such as: for this process, to a great extent the following tools: AdWords campaigns (70%), Facebook Ads campaigns (90%), SMS Marketing campaigns (72%) and sponsorships (70%). But most also specified that the least used are now traditional offline amps (80%).

Most of the respondents stated that they believe that the best way to attract customers is by offering promotions and discounts. For the management of the clients attracted the respondents specified that they use CRM systems (45%), databases (30%), the newsletter system (20%) and very few of them specified that they use Data Mining systems (5%).

Responders opined that can retain customers in the following ways: Provide samples (25%) Partnering (25%) Providing output of loyalty cards (30%) Providing rewards buying repeated products (20%).

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Some Considerations on Integrating Corporate Social Responsibility in the Marketing Strategy of Banking Institutions

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Abstract

The paper tackles the optimal manner of using corporate social responsibility in banking institutions to improve relations with stakeholders. Based on the previous literature, the paper explains how corporate social responsibility should be integrated in the marketing strategy of the bank, considering the relations of the banks with a wide range of stakeholders. The analysis emphasizes that it is important to integrate corporate social responsibility in the marketing plan in a structural manner, knowing that different types of stakeholders are sensitive to different behaviours of the bank in terms of sustainable actions undertaken.

Keywords: Corporate social responsibility, relationship marketing, banks, stakeholders, marketing strategy.

JEL Classification: G21, M31, M14.

1. Introduction

The banking system was largely considered to be the starting point of the financial crisis started in 2008. After a long period of risk accumulation, partially enhanced by the credit expansion promoted by the banking system in the period 2005-2008, the financial crisis came with disastrous effects on the world economy and, of course, with a negative opinion of the general public on the banking system behaviour.

The beginning of the financial crises also highlighted the crucial role of the banking system in the economy. The states were obliged to use public financial aids to save the main banks in order to allow the economy to continue functioning. Even with these public measures, the financial crisis had important effects on the social well-being of the world population.

The negative effects of the financial crisis on the image of banking institutions are often considered in the literature. In an attempt to improve their image among clients, but also among shareholders, potential investors, employees, communities,

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etc., banks intensified their corporate social responsibility (CSR) actions. However, the manner of using corporate social responsibility as an instrument to improve the image of the bank in the relationship with different stakeholders was different and so was the efficiency of employing this instrument.

Therefore, we considered important to show, based on the previous literature, how an efficient model of developing CSR practices can be promoted by its full integration in the marketing strategy of the bank.

2. Problem Statement

The research of corporate social responsibility in banks is a topic that gained importance in the last ten years. The analysis is made in different contexts, due to the complex and interdisciplinary character of corporate social responsibility and to its various effects on the bank image. The literature follows two important topics.

On one hand, it tackles the role of corporate social responsibility in the relationship between banks and their investors. The results in this direction are complex. The general conclusions of Goss and Roberts (2011) explain that corporate social responsibility mitigates risks perceived by the creditors thus contributing to diminishing the cost of capital. El Ghoul et al. (2011) emphasize that corporate social responsibility contributes to mitigate risks, thus decreasing the cost of equity. These findings are completed with specific analyses on the banking system.

Chen and Gavious (2015) show that shareholders react differently to corporate social initiatives, as minority shareholders value positively corporate social performance, while institutional investors and major shareholders are insensitive to these initiatives. Glossner (2019) brings useful insights by considering the investment horizon and highlights that shareholders with a long-run investment horizon are more concerned about CSR, but more in the sense of avoiding CSR concerns and the incumbent risk than of enhancing CSR strengths of the banks.

Bae et al. (2018) find a non-linear correlation between banks' corporate social performance and the cost of debt, with a mitigating effect of the former on the cost of debt. However, to a limited extent, the decrease in the financing cost is lower for more intense implication of the banks in corporate social responsibility.

The other main stream of literature is regarding how corporate social responsibility actions undertaken by banking institutions in different countries are perceived by customers and influence banks' image. The literature in this regard is mainly formed of empirical studies based on interviews with samples of clients on particular aspects and on specific national environments, providing sparse conclusions on the subject. However, some general lines are as follows.

Corporate social responsibility is able to have a positive contribution on the brand image and bank reputation. Landrum (2017) published a survey that mentions that more than half of the population interviewed would pay more for products from CSR-performing companies and the trend is more accentuated among young people. Also, Fatma and Rahman (2016) for the Indian banking system, Cowan and Guzman (2020), Lecuyer et al. (in press), Polychronidou et al. (2014) and Xie, Bagozzi and Gronhang (2019) show that corporate social responsibility improves brand image.

However, the literature also identifies mitigating factors such as religious beliefs (Ramasamy et al., 2013), gender (Calabrese, Costa and Rosati, 2016), emotions, attitudes and moral values (Chen and Huang, 2016; Xie, Bagozzi and Gronhang, 2019) or national characteristics such as the law system (Demirbag et al., 2017). From a different perspective, Millon-Cornett et al. (2016), based on an empirical analysis of the U.S. banks demonstrate that these institutions include corporate social responsibility in their instruments used for improving their image seriously affected by the 2008 financial crisis.

The literature also explains that the efficiency of different types of actions included in the field of corporate social responsibility varies, with more altruistic ones being valued more (Perez and Rodriguez del Bosque, 2015; Chen and Huang, 2016). Goyal and Chanda (2017) demonstrate that community and environment-focussed CSR actions are positively related to customer loyalty, and community and customer directed ones are correlated with customer recommendation. Rivera et al. (2016) conclude that training and environmental CSR actions are positively correlated with customer satisfaction.

Other studies analyse how corporate social responsibility is employed in the relationship of banks with other stakeholders. Korshun, Bhattacharya and Sen (2009), Prior, Surroca and Tribo (2008), Benitez et al. (2020) or Tourky, Kitchen and Shoalan (in press) among others analyse how corporate social responsibility influence the relation of banks with their employees. Other categories of stakeholders considered from this perspective are suppliers (Govindan et al., 2018) and communities (Goyal, 2006).

The effectiveness of different types of CSR actions in the relation with specific types of shareholders and the complex interaction of corporate social responsibility with the brand image and customer loyalty makes necessary the integration of banks' policy in terms of CSR in the marketing strategy of the banks. The existing literature supports this idea (Ranangen, 2015).

3. Research Questions/Aims of the Research

The complex mechanism through which corporate social responsibility influences brand image and the relationship of the bank with a wide range of shareholders, as demonstrated in the literature, imposes the integration of the corporate social responsibility policy of the bank in its marketing strategy.

The present paper presents the main particularities of the marketing strategy in banking institutions and explains how and why it should integrate corporate social responsibility in a coherent manner.

4. Research Methods

The paper uses the analysis of the previous literature as a basis for the recommendations regarding the optimal design of a marketing strategy for banks that integrate corporate social responsibility. The professional analytic inference based on secondary data investigation is used in a structured process built upon a classic

economic model specific to banking marketing (Olteanu, 2005) to describe the optimal manner of incorporating CSR policy in the marketing strategy coherently to the objectives of the bank.

5. Findings

According to Bhattacharya, Daniel and Sen (2009) the motivations that drive the buying decisions are related to functional benefits of the good offered or to the fact that buying the good makes customers feel better and corresponds to their moral values. Banks can use corporate social responsibility in relation with the second group of motivations and, therefore, integrate it in the marketing activity.

There are two major paths of action for including corporate social responsibility in the design of marketing strategy in banks.

The first one consists in designing dedicated programs targeting the brand image. Corporate social responsibility can thus become an instrument to consolidate the image of the corporation in the eyes of clients and other stakeholders. One should keep in mind that in the banking industry, characterized by a generally high level of homogeneity in the services offered, corporate image is primarily targeted, the service brand being significantly less powerful in stakeholders' cognition (see Olteanu, 2005).

As a consequence of the high homogeneity of the financial services provided by banks, the marketing department has as permanent concern to individualize the service offered according to clients' expectations. If from a technical point of view, the means of personalizing the services offered are limited, one possible way to achieve this goal is to attach them some attributes related to adapting to customers' moral goals and concerns. By considering corporate social responsibility in the design of the banking services, financial institutions address primarily a special category of clients, respectively the caring consumers, segment which recorded a spectacular increase in the last decade and remains on an ascending trend. The integration of corporate social responsibility in the design of the banking services can be done either in the core product or in the auxiliary elements related to the financial services provided. An example for the first case can be the development of dedicated products directed towards environmental protection, such as the issuance of green bonds for financing complex environmental protection programs implemented by private actors or the green mortgages, instrument implemented by several banks in Romania for encouraging the development of green residential projects, but in the meantime to respond to particular segments of clientele concerned with minimizing their environmental impact. In the second case, the consideration of corporate social responsibility is not related to the characteristics of the core product, but with how it is provided for the client. The bank can choose specific ways to deliver it (for example online or through other electronic devices, instead of the classical written form), using recycled materials in the activity of the bank employees, developing special department for assisting clients at distance or manifesting a constant concern for minimizing the quantity of natural resources used in the daily activity by the banks. One widely recorded trend in the banking sector is

the choice of certified green buildings for their agencies or meeting points with their clients and stakeholders, as a statement of their preoccupation for environment and community. Another form of auxiliar attributes related to corporate social responsibility attached to the financial services that can be valued by clients and stakeholders are the informational attributes, generally contributing to financial education or environmental concern awareness.

In terms of marketing process levels, considering that the auxiliary attributes of the financial services appear in the direct interaction of the consumers with the employees of the banking institution, within agencies or virtually, the corporate social responsibility should be implemented both in the general level of the bank process level and in the functional one. The general level refers to the design of the marketing process in the bank headquarters and provides those general conceptual attributes of the financial service that are identical in all agencies and instances where the service is provided. The functional level encompasses the particular features of the service intimately related to its provision, which can differ from one agency to another or in time.

The analysis of how corporate social responsibility may be implemented in the marketing strategy can also be made according to what phase of the marketing process (Olteanu, 2005) is concerned with including corporate social responsibility elements. Though specific CSR elements can be implemented throughout all phases, there are several particularities related to each phase.

The market-oriented strategic planning provides the opportunity to integrate CSR especially in defining the mission of the bank and to a lesser extent in the decisions related to the operation domains and to identifying strategic activity units.

The integration of the corporate social responsibility in the strategic planning phase is merely indirect, throughout its potential influences on the generic strategy designed for specific operation domains. The main generic strategies put in evidence by Porter (1985) are the following: the cost domination, the differentiation and the focus. Coherent choices in terms of corporate social responsibility can be identified for each generic strategy, but they are different. In the cost domination strategy, the choices in terms of CSR must be those that converge with the general objective of cost minimization, for instance implementing electronic exchanges of information instead of the written one. In the differentiation strategy, educational or social goals, as well as clearly defined environmental projects can be attached to the service provided. In the focus strategy, those CSR goals clearly associated to the moral values and goals of the clientele segment targeted need to be considered, the others being usually avoided due to their weak power of penetration in the market niche.

The Strategic marketing planning phase offers the possibility to consider how corporate social responsibility can be used in the service design and how it impacts on the decisions related to the marketing mix components. For example, in making the strategic planning of the financial service provision, corporate social responsibility is to be considered at functional level, in the auxiliary attributes that concern the delivery of the main financial services. In the same vein, in the strategic planning of the promotion policy at a general level, the corporate social

responsibility can be embedded in the design of the promotional activity in such way as to encompass the concerns of the targeted segment of clients in terms of message, communication channel, informational content etc.

The mission of the company is clearly the focal point where corporate social responsibility should be implemented for insuring an efficient integration of this powerful tool in a successful bank marketing strategy. According to Payne (1993), the mission of the company must describe the corporate goal in a long-run perspective, the principles, values, beliefs and aspirations encompassed in the corporate culture and then transposed into corporate actions. If the bank manages to incorporate corporate social responsibility correctly in the corporate mission, then the bases for an efficient corporate social responsibility policy in improving corporate image are created.

The integration of corporate social responsibility in the choice of the marketing instruments has also some particularities. It is also important to insure and adapt the use of marketing instruments in order to ensure the coherence with the corporate social responsibility goals assumed. Hence, in the segmentation, considering corporate social responsibility may require conducting a market research able to identify the caring consumers and their relative value. Then, the product or corporate strategy should use these finding to assess the correct weight and type of the corporate social responsibility activity, knowing that, according to Beasley and Ghatak (2007), their success depends on the importance of the caring consumers segment in the volume of the potential market and on the institutional features of the economic environment.

In the positioning decisions, corporate social responsibility can be one important form of product or company differentiation as documented on a sample of Nepalese banks in Upadhaya, Munir, Blount and Su (2018).

The coherence of corporate social responsibility with the marketing mix is also important. In terms of product design, as seen before, responsible goals can be integrated in the core product that can be specifically oriented towards caring consumer segments (green mortgages, for example), or in auxiliary attributes of some services addressed to a large mass of consumers (see for example, the cause-related marketing). The decisions related to the promotion of the product or service can be impacted to a bigger or a lesser extent by corporate social responsibility according to the sensitivity of the target segment of clients to the responsible actions of the bank. The decisions regarding the distribution of the service, including the distribution channels, the adequation of the distribution place etc., give the best results when they are designed to be coherent to the corporate social responsibility goals assumed by the banking institution. Even in terms of price policy, corporate social responsibility should be considered, especially if we consider that, at least for certain segments of clientele, the association of the financial service to a certain corporate responsible action can diminish the elasticity of the demand to price increases.

Also, one must consider the wider perspective of the relationship marketing. In this vein, the effect of corporate social responsibility on the relationship of the bank

with the other stakeholders is very important. Ranangen (2015) emphasize the need to consider corporate social responsibility when designing the management system of the relationship of the bank with the entire range of stakeholders.

6. Conclusions

The paper provides some considerations on how corporate social responsibility can be used as a financial-banking marketing instrument. Based on the study of the literature on how corporate social responsibility influences the bank relations with stakeholders, we explain in a theoretical approach how corporate social responsibility should be integrated in the marketing strategy of banks for optimal outcomes.

The literature on corporate social responsibility demonstrates that it affects corporate image and the relation with stakeholders. However, the state of the art regarding how it should be used as instrument of the relationship marketing reveals a sparse image, the studies published so far being focused generally on narrow research questions. Therefore, an effort of contributing to the structuring of the specialty literature in the field is useful. This paper represents an attempt of offering a synthesis of the conclusions of the specialty literature regarding the relationship between financial-banking marketing and the corporate social responsibility. It then puts forward considerations about how corporate social responsibility policy should be integrated in the marketing strategy of banks starting from the planning phase, to ensure the necessary coherence with the objectives of the corporation in terms of relationship marketing.

The paper puts in evidence that corporate social responsibility should be integrated in all phases of the marketing strategy, in a manner coherent with the particularities of the financial products and in the relationship with different types of stakeholders, knowing that different categories of corporate social responsibility actions have different efficiency in relation with specific stakeholders and considering different mitigating factors.

As a bottom point, in the present economic conditions characterized by a strong competition, corporate social responsibility cannot be ignored in the banking activity. Its integration in the marketing strategy of the banking institution in a comprehensive and coherent way, represents the necessary condition for obtaining the best results in terms of corporate image and stakeholders' loyalty.

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Awareness of the Endogenous Factors Influence Purchasing and Consumption Decisions

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Abstract

Companies use marketing to understand the consumer, produce products according to their needs and desires, and, as a result of consumer satisfaction, the company makes a profit.

Many factors influence consumption and purchasing behaviour, and these factors include psychological or endogenous factors. The determination of these factors is done through psychological tests or using research aimed at consumers' reaction to specific hypotheses issued.

In this paper, we review endogenous factors: perception, motivation, learning, personality and attitude, depending on their impact on consumer decision-making. In addition to their definition, we also show how these factors influence consumer behaviour and an example of research that sought to determine the influence of the element on consumer behaviour and how marketing can help reduce adverse effects for the company, generated by the endogenous factors of each consumer.

In the case of this article, a research was conducted among a sample of 180 respondents that aimed to determine which of the endogenous factors exerts the greatest influence on behavioural decisions (purchasing and consumption) of consumers.

Keywords: marketing, consumer behaviour, endogenous factors.

JEL Classification: M31.

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1. Introduction

Consumer behaviour is an essential element in the economy, especially in marketing, as it tracks the way the potential customers of specific products act, why they are influenced before and during shopping. Manufacturers and firms can use their knowledge of consumer behaviour to change them to buy certain products in as large quantities as possible to make the most profits. The consumer's reaction is the result of attitudes and motivations of the individual's personality, which is influenced by a series of factors, both endogenous and exogenous, which imprint their decisions as a consumer. In most cases, there are five categories of factors that influence the consumer's behaviour: cultural, social, psychological, personal-psychological and situational psychological. This article attempts to measure awareness of the influence of endogenous factors among consumers and the extent to which they consider endogenous factions to influence consumer decision-making. To achieve this goal, marketing research was carried out as a research tool.

The studied topic is important for the literature because it addresses endogenous influencing factors individually, separately from the general umbrella of personal elements of influence and tries to identify the extent to which each of the factors highlighted in the literature influences consumer behaviour and whether there are significant differences in the degree of influence or they act as a unitary whole on decisions.

In the first part, the article addresses a review of the literature identified and selected as relevant for the subject studied, and in the second part it presents the results obtained by the authors in their own research.

2. Problem Statement

Endogenous factors of influence of consumer behaviour: a theoretical approach: Marketing has grown over the twentieth century, from focusing on the production of goods to creating products and services according to customer needs. As a result of the change in the purpose of the company's output, the consumer's behaviour has emerged in marketing, and this behaviour is also part of the economic activity of the people. Consumer behaviour is manifested by purchasing and consumption decisions taken by people when it comes to goods and services (Balaure et al., 2002, p. 179). Some factors influence directly or indirectly the decision-making process of purchasing and consuming customers. They can be "individual - which refers to personality, cognitive power, lifestyle and perceived risk, and environmental factors - which refers to the socio-demographic factors (the reference group, the families), the economic environment. All goods and services are equally influenced by income levels; for example, when a person's income is reduced, spending on durable and cultural-fun activities is the most affected. Decisions are the functionality and price of goods and services" (Şeclăman, 2014, p. 15).

The consumer's behaviour is influenced by two types of factors, which are directly observed and deducted. Among the direct factors are economic,

demographic, marketing and situational factors. The deduced elements are divided into two categories: endogenous factors (perception, motivation, personality, learning, and attitude) and exogenous factors (family, group of belonging, reference group, social class, culture, and subculture) (Cătoiu and Teodorescu, 2004, p. 47).

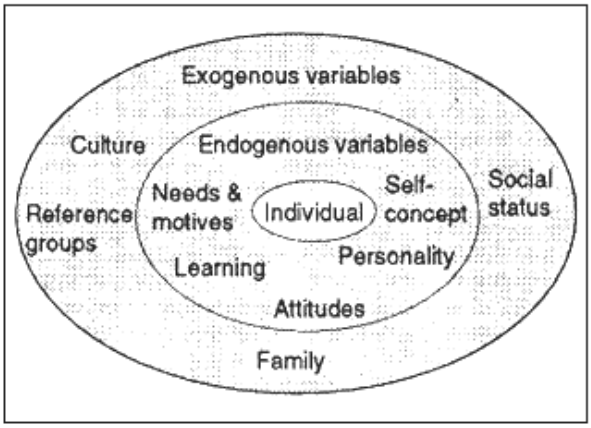


Figure 1. Endogenous factors of influence
Source: http://www.fao.org/docrep/004/w3240e/W3240E05.htm.

Next, we will present the endogenous factors, namely perception, motivation, personality, learning, and attitude. These factors are also defined as psychological factors, as marketing uses psychology to explore how these factors influence consumers' consumption and purchase patterns. The way to investigate endogenous factors is most often done by generating hypotheses that interact with the human mind, referred to in the black box literature. As a result of this interaction, certain behaviours appear, which are included in behaviour patterns (Cătoiu and Teodorescu, 2004, p. 57).

Perception

Perception is considered a process by which people select, organize and interpret information and create a picture of the environment (Kotler and Armstrong, 2004, p. 193). Every day consumers have lots of images, many of which are not taken into account. A photo can be relevant to a person if they identify themselves with that image or if it is consistent with its values and principles. One example is that people passionate about sports or competition consumers will react differently when they sees an image (sometimes an ad) in which a sporting competition or a product sponsoring a game or sport is presented compared to another person who does not have the same passions or values. In the economic environment, there have been numerous experiments in which individual images have been shown in activities (viewing a movie), encouraging the consumption of a product, and then it has been found that sales for that product have increased, making it a direct link to image display.

As a result of the research done by the academic environment and the business environment, products are perceived by the consumer as suitable for them.

Research is being done to determine how packaging, colour, and even the size of food should look so that the consumer prefers it to the detriment of another, is considered a quality product and provides consumer confidence (Ampuero and Villa, 2006).

Motivation

Motivation is that faith that causes you to do or not to do a particular action. This would be a short definition of motivation. Motivation is also influenced by certain factors such as primary needs, emotions, consciousness, education. Due to these factors of influence, there are several types of motivation: primary motivations, rational motivations, emotional motivations, conscious motivations, or intrinsic motivations (Blythe, 1998, p. 21).

Research on consumer motivation shows that consumer motivation has many dimensions and that high motives, such as hedonistic or normative, must be delimited by social and moral norms; however, they should be taken into account to have a complete picture of what motivates the consumer (Barbopoulos and Johansson, 2016, p. 75).

Personality and learning

Personality is a set of features by which a consumer differentiates himself/herself from another, having a different consumption and purchasing behaviour (Cătoiu and Teodorescu, 2004, p. 71). Personality builds over time, being a mix of genetic, hereditary, innate traits, and others trained in family and family environment, at school, at work, or in society.

The behaviour of certain brands and products is, to a certain extent, determined by the consumer's personality. Research has concluded that the consumption of a particular type of product is often determined by, and the products are created on the target audience model. It can be said that there is a strong link between the consumer's personality and the personality of a brand (Banerjee, 2016, p. 213).

Learning is that change that can be observed or not, which can lead to repeated consumption based on previous experiences (Cătoiu and Teodorescu, 2004, p. 69). Most likely learners are children and adolescents. Most often, the way of consumption is formed in childhood and adolescence, when the influences of the family and the close ones play an important role.

Attitude

Attitude is defined as a learned trend by responding to the purchase of a product or service. Perspective may be cognitive, based on knowledge and information, practical when based on feelings and emotions, and intentional, represented by intent (Blythe, 1998, pp. 88-90).

Attitude often leads to the purchase of a product by reference to a particular principle or value. The position is also related to certain demographic factors. In a research, it was concluded that the preference for a natural (sustainable) wine is closely associated with a favourable attitude of consumers towards sustainable products, and among these people are young people, the latter preferring sustainable products such as food (Sogari et al., 2015, p. 312).

However, the researchers' questions arise when identifying consumer awareness about the existence of these endogenous influences.

3. Research Questions/Aims of the Research

Thus, we examined some factors that impact consumer behaviour and purchasing decisions, each of which has a significant role in the economy, especially in marketing and sales.

To begin with, the study includes an analysis of the literature, which highlights the results obtained in other research. Given the purpose of research (identifying endogenous factors that have the most significant impact on purchasing and consumption decisions) and research objectives (including the determination of endogenous factors that influence consumer decisions by category of purchased products), one of the hypotheses was established, according to which the impetus for environmental responsibility, spirituality and perceived effectiveness of consumers are the key psychological determinants of sustainable consumer purchasing decisions. This hypothesis was established after studying the specialized literature: In the case of a survey conducted among 450 people, structural equation modelling was used to predict the power of the variables under consideration. According to the findings, the desire for environmental responsibility, spirituality, and perceived consumer effectiveness is the most essential psychological determinants of consumers' long-term purchasing decisions. The findings of the study will be helpful to policymakers and government agencies to develop campaigns to encourage sustainable purchasing habits among young consumers. Promoting sustainable purchasing habits may reduce the harmful effects of unplanned purchases on the environment and society.

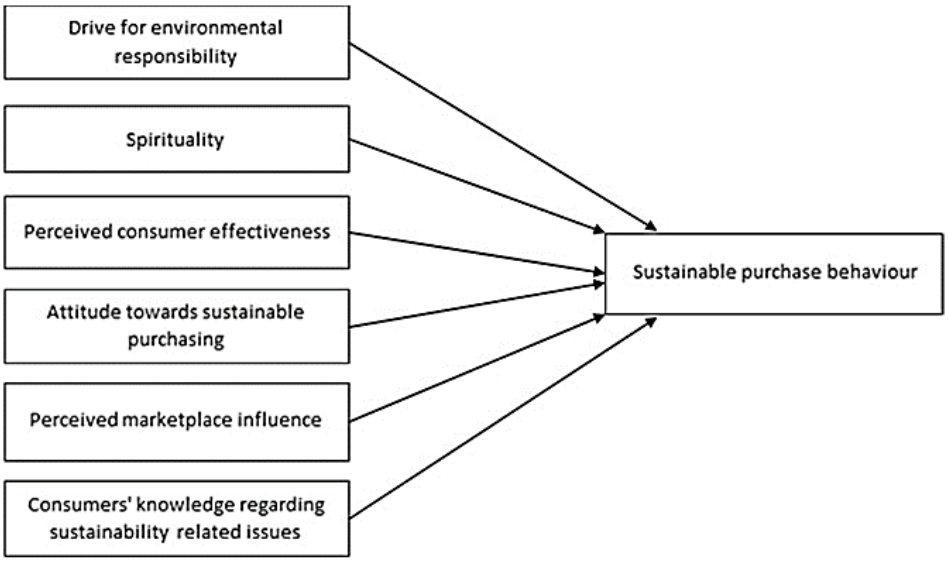


Figure 2. Model of endogenous factors of influence
Source: Joshi & Rahman (2019).

4. Research Methods

In this article, exploratory research on the literature was carried out, first of all, in order to identify which are, in general, the most important endogenous factors that influence of the consumer decision-making process. For the research part, a model from the literature was studied to see the level of influence exerted by endogenous factors on behavioural decisions, followed by quantitative marketing research (pilot research) to determine which are, for Romanian consumers, the most influential endogenous factors in purchasing decisions and especially if they differ depending on the category of products purchased. To conduct this research, a questionnaire was designed as a research tool, which was applied to a sample of respondents. The most important results obtained are highlighted in the next section.

5. Findings

To identify the extent to which consumers are aware of the influences exerted by endogenous factors on their consumption decisions, we surveyed a target group of 180 respondents aged 20-26 with a level of increased education (university studies in progress) and middle-income.

They responded to a questionnaire consisting of 21 questions, 14 thematic and seven classifications and identification.

Among the questions in the questionnaire, the most relevant to the quality of the answers provided were the following:

Which of the following factors will influence the choice of certain services at the expense of others?

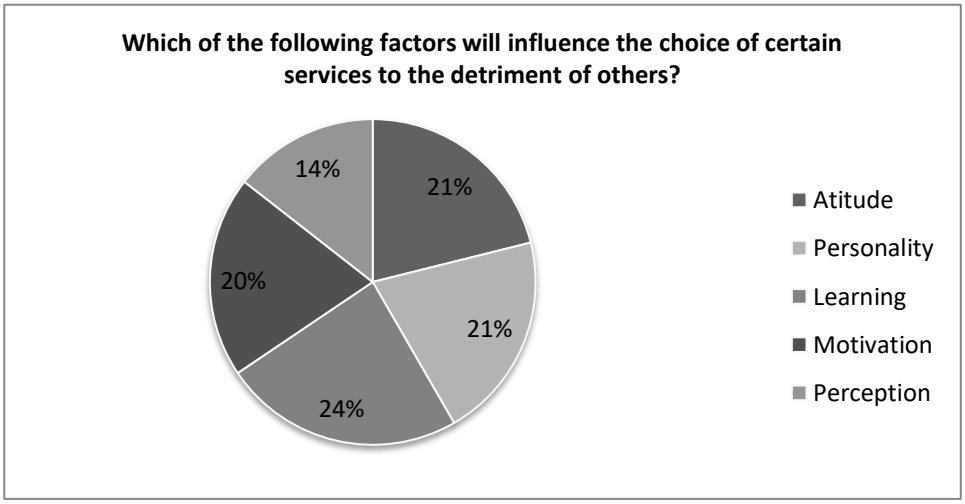


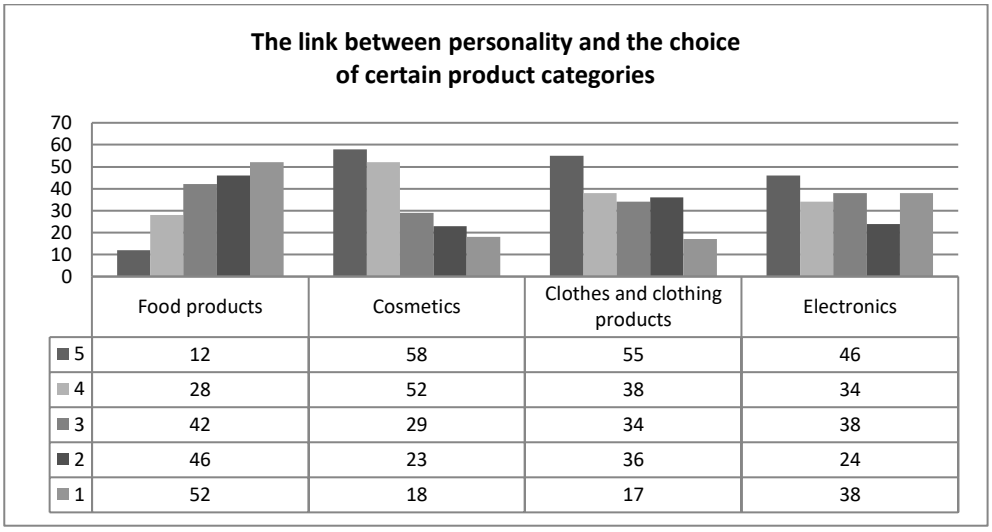
Figure 3. Endogenous factors and their consumptions influence
Source: Made by the author for the research.

As a result of the answers, we can see that the distribution of responses is balanced, meaning that most consumers consider that learning (the learning level) influences them most in choosing certain services at the expense of others, but the differences to the other factors of influence (personality, motivation, and attitude) are not significant.

From the answers offered, respondents were asked an open question about the level of influence that learning exerts on consumer decisions as follows: To what extent do you consider that knowledge has changed your consumption decisions (open response)? Respondents' answers refer, in most cases, to changes in the degree of awareness of the quality of certain products and learning by experience, in the sense that, with self-education or acquiring new information, they responded much more rationally to performing acquisitions than before. Also, in experience-based learning, respondents have referred to consumer habits and familiarity with specific products they continually acquire.

Another question in the questionnaire referred to how consumers choose certain types of products according to their degree of matching with their personality.

Do you consider that you choose the following product categories according to your personality?



	Food products	Cosmetics	Clothes and clothing products	Electronics
5	12	58	55	46
4	28	52	38	34
3	42	29	34	38
2	46	23	36	24
1	52	18	17	38

Figure 4. The link between personality and the choice of specific product categories
Source: Made by the author for the research.

Score Food: 12×5 + 4×28 + 3×42 + 46×2 + 52×1 = 60 + 112 + 126 + 92 + 52 = 442

Score Cosmetics: 58×5 + 52×4 + 29×3 + 23×2 + 18×1 = 290 + 208 + 87 + 46 + 18 = 649

Clothes Clothes and Apparel Score: 55×5 + 38×4 + 34×3 + 36×2 + 17×1 =
= 275 + 152 + 102 + 72 + 17 = 618

Product Score Electronics: 46×5 + 34×4 + 38×3 + 24×2 + 38×1 =
= 230 + 136 + 114 + 48 + 38 = 566

Following the scores, we can see that personality has a significant influence on the acquisition of Cosmetic products, followed by the purchase of clothing products and electronic products, the last being the food.

6. Conclusions

Determining consumer behaviour is a complex process, and it can be achieved by measuring some indicators. The psychological influences of consumer behaviour can more strongly determine how an individual consumes and buys than the directly observable factors. By identifying the psychological profile, a company will know what types of products they prefer, how they should look and why they buy a particular product. It is often noted that consumers purchase products and services, but it is unknown why they are buying that product and not another one; at the moment, the product market is a diverse one, and the competition is high.

The loyalty of a client has a more significant connection with the values and ideals to which it adheres than with the level of income obtained. Building solid brands with which a consumer can identify is made by personalizing the marks and assigning specific characteristics following the target audience personality.

As for awareness of the influence of endogenous factors on consumption decisions, there seems to be a complicated discussion in that most of the respondents react to endogenous controls, most of them involuntarily but conscious if they are subject to a retrospective analysis of purchasing and consumption decisions.

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Local Action Groups Implications in Rural Romania

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Abstract

Common Agricultural Policy is known to determine most of the present changes in the Romanian agriculture. Local development strategies are currently representing a viable solution to uplift rural potential. The European LEADER axis, through its cross-sectional structure, contributes to each nation's rural development identified objectives across both national and international programmes, being measure that focuses on offering additional opportunities for sustainable development for rural communities, taking care of the local needs, aiming directly at caring for cultural heritage, economic development and strengthening group organizational skills. The current paper aims to highlight the importance of Local Action Groups for rural citizens in Romania. These essential groupings are of important relevance for rural communities since they address measures to enhance the socio-economic situation.

Keywords: LAG, rural development, financing, income, LEADER.

JEL Classification: Q01, Q19.

1. Introduction

The Romanian rural area is represented by an area with great diversity of physical, economic, social and ecological aspects, creating heterogeneous rural communities, with their own identity and characterized by unity through diversity.

Regional development consists in a broad process of development of all areas of a state, which brings a balance between the levels of economic and social development of different regions, considering the long-term management of natural

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resources and the protection of the natural environment (Bran et al., 2020; Faludi and Neamțu, 2020).

Several threats have been signalled when it comes to Romania's rural area economic and social extensive development, and the impossibility of finding a successful way out of this situation would further hurt communities. Rural Romania is lacking economic diversification, whereas international funding is increasingly providing investment for non-agricultural streams, even though agriculture still lacks high-tech equipment and has access to poor market (Paul, 2020).

Now, Romania, as a European country, is forced to solve existing and emerging problems related to the economic and social development of rural communities, given the existence of resources with a pronounced limited character, the need to preserve the national identity and the need for environmental protection. Thus, it is necessary to formulate clear goals and develop national and local strategies that allow economic development, which would also solve social problems, while maintaining and conserving the balance of the natural environment.

In the current stage of development, the Romanian village is going through both an acute economic and social crisis and an identity crisis. In this context, it is necessary to find new models of sustainable development, starting from the structure, size and economic-social specificity of each rural community (village, commune and region) (RNDR, 2020).

In recent years, the sustainable development of rural communities has been influenced primarily by the demographic developments of a society in the process of modernization and transformation. Thus, the process of population decrease in rural areas is a current trend on the backbone of rural-urban migration (attenuated since 2008), characterised by a negative natural increase of the population and a high percentage of infant mortality (Staic and Vladu, 2021).

From the experience of the previously two financial programming periods in Romania, it was found that LEADER can contribute considerably to the daily life of the rural population. It can play an important role in encouraging innovative responses to old and new rural problems and becomes a sort of laboratory for strengthening local capacities and testing new ways to meet the needs of rural communities. The implementation of LEADER has led to important results in many rural areas in the Member States of the European Union (EU) and could play a significant role in helping rural areas to adapt to ever-changing contemporary realities (Luca et al., 2018).

Awareness of the importance of the LEADER tool increases local development, creates new jobs, supports a new digital economy and acknowledges the need for cooperation between Member States in trying to protect the interests of farmers. (FNLAG, 2020).

2. Problem Statement

The present paper puts on the radar the importance of LEADER through Local Action Groups (LAGs) for local rural communities and wants to achieve this

through systematic statistical analysis of the most recent official indicators of rural Romania.

The LAGs are a non-profit group of local community representatives (such as trade unions, business associations and municipalities in the territory administered by the LAG) that manage LEADER projects in rural European areas (Menconi et al., 2018).

The field of sustainable development of Romanian rural environment is no longer an emerging one, at least in terms of empirical research, and yet there are still ambiguities, including in terms of definition and delimitation from a conceptual point of view. In the current conditions, the sustainable development of the rural environment is the general word, when talking about development policies at national and European level, the focus is rather on the recognition of the multiple functions of agriculture in today's human society, as well as on the vital role of rural space, which ensure the existence and efficiency of agriculture. The policy of integrated sustainable development in rural areas is still poorly addressed, most often being contradictorily interpreted.

The 2020 strategy, unlike the previous one, did not remain a vision without resonances in terms of concrete facts. A typical example of the path that has been taken to the knowledge society is National Rural Development Programme (NRDP) 2014-2020. The NRDP 2014-2020 aimed to make rural development smart, sustainable and inclusive, according to the Europe 2020 Strategy. According to these three distinct features, the general objectives of the current Strategy are: innovation, environment and climate change mitigation.

Even though the LAGs preparation and implementation of sub-measure for 2014-2020 implied the lowest effective allocations throughout the strategy (Dinu et al., 2020), its implications and effects are beyond direct recognition and could impact the near future of rural communities.

One of the situations in which it is explicitly emphasized that innovation must be the key priority for rural development is when innovative actions are tailored for local communities in accordance with LEADER principles (Popescu, 2017).

The Local Action Groups represent public-private partnerships made up of various representatives of the socio-economic sector from the respective territory. At the decision-making level, the social and economic partners and civil society representatives, such as farmers, women, rural youth and their associations, must represent at least 50% of the local partnership. LAGs have different legal structures and forms of organization, such as: non-profit associations, associations-foundations, local or regional authorities, companies, cooperatives. LAGs represent the interests of residents and their communities, being the engine of the LEADER Program (Menconi, et al., 2018). The value added of this approach is associated with local empowerment through the development of local strategy, delivery and allocation of resources.

LAGs across the EU made efforts to contribute more on the sustainable development of the rural communities, through continuous reorganization and initiatives launch aiming at employment stability and economic diversification and

even at touching the selection criteria for accepted projects in order to be more adaptable to the present scene (Arroyo et al., 2015).

The LEADER program has evolved over time, along with other common agricultural policies. The information from the assessments and those provided by rural stakeholders shows that the LEADER approach is a tool that works effectively in different situations and types of areas, by adapting rural decisions to the extremely diverse needs of rural areas (Florescu and Rahoveanu, 2021). By encouraging local participation in the development and implementation of sustainable development strategies, the LEADER approach can prove to be a valuable resource in future rural policy. LEADER funding was provided through the Structural Funds (EAGF, EAGGF, EAFRD) and through the NRDP. For the 2014-2020 programming period, LEADER funds can be accessed through Measure 19 - Local LEADER Development of the National Rural Development Program 2014-2020. Through LEADER, the development of rural areas and small towns with a population up to 20000 inhabitants, specifically addressing the needs of local development in education, business, agriculture, health, social services, infrastructure, culture and environment, facilitating the implementation of projects with an innovative multisectoral and cross-cutting approach, to support the needs of the eligible and to meet the objectives of the Europe 2020 Strategy.

Romania has started exploring the possibility of setting up Local Action Groups since 2005, when the first territorial definition exercises took place. The Romanian Fund for Social Development was chosen as the initiator together with the Ministry of Agriculture in this endeavour, starting from the previous experience in establishing informal partnerships in disadvantaged communities.

The main objective of local development strategies is to provide support to those rural areas, by implementing small-scale projects. Through this approach, LAGs can better target the needs and priorities of their territory, as they are part of the territory. The literature shows that Europe is characterized by a high degree of diversity in the implementation of the LEADER program (Menconi, et al., 2018).

It is mandatory for rural stakeholders to become more resilient, as challenges would be easier to face in such a way, especially in the present globalized market and digital era. Agriculture and other rural activities need to be amended with up-to-date abilities in order to find social and economic prosperity. Resilience could not easily become a fixed characteristic of rural Romania, though continuous adaptation should be prioritized through local programmes (Simmie and Martin, 2010; Tudor, 2015).

There are several theories about the incipient elements that are at the stage of LAG formation. The initial assumption was that the civil society in the territory, the economic agents and the public authorities meet spontaneously and decide to form a partnership. In most of the cases, the emergence of the Groups was due to the coagulation of a very small group of initiators who gradually managed to convince a larger and more diverse number of local development actors to join the proposal. There is an obligation for all governance structures of the LAGs that the representation of any category of participants in the economic, civil or public sphere

should not exceed 50% of the decision-making rights in the Local Action Group. Public representatives must represent less than 49% of the stakes. A higher number of private entities is considered a favourable condition for operation.

LAGs proved to offer economic diversification from the traditionally agricultural based activities to non-agricultural solutions, to provide agriculture with multifunctionality, which is possible through socio-cultural heritage improvement, improvement of local food importance in food security fulfilment and further stabilization of rural incomes (Florescu and Rahoveanu, 2021).



Figure 1. Treemap of effective payments for 2014-2020 period by county, measure 19.2. and 19.4. as of 29th of October 2020

Source: Authors' conceptualization based on AFIR database.

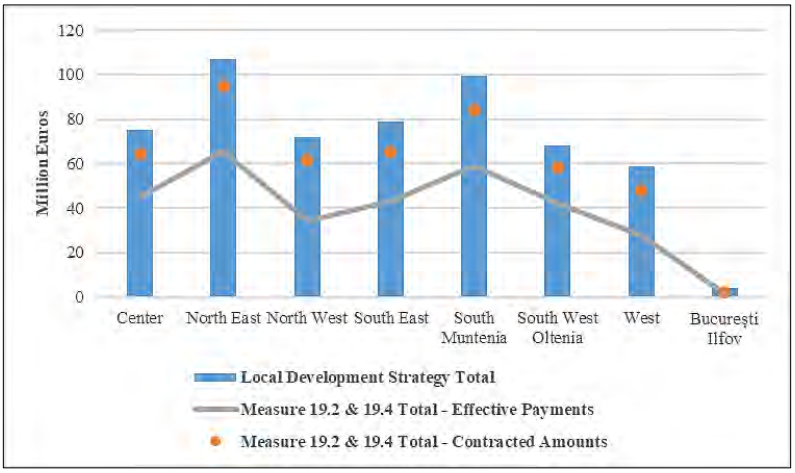


Figure 2. Total Local Development Strategy allocations for 2014-2020 period by NUTS classification and the representation of both contracted amounts and effective payments in million EUR

Source: Authors' conceptualization based on AFIR database.

The financing of the Local Development Strategy for the 2014-2020 period can be observed in Figure 1 & 2, the top-five counties making up 20% of the total payments, while top 10 counties reach 36%; among the first 10 counties (summing more than 114 million euros), four are from the North-Eastern region, and two belong to South-Western Oltenia region. Both regions are historically known to contain severely disadvantaged rural areas (Mitrică et al., 2020). The largest contracted amount (for measures 19.2. and 19.4.) out of the total Local Development Strategy, is in the North-Eastern region, with 89% , and the lowest amount is in the Western region (82%), excluding Bucharest-Ilfov region. Interesting to note is the fact that out of the total 479 million euros for 19.2. and 19.4. measures for the 2014-2020 period, the effective payments out of the total contracted amounts still miss, being close to 170 million euros (34% of contracted amounts), meaning that in the upcoming period before the next Multiannual Financial Framework (MFF) and in the first part of the next MFF, opportunities for local communities still exist altogether with room for improvement across future rural incomes and general socio-economic status.

3. Aim of the Research & Methods

The paper highlights and interrogates different specific databases (Romanian National Institute of Statistics – INS, Financing Rural Investment Agency of Romanian – AFIR and the European Commission's Agricultural Data Portal – AGRIDATA) in order to accurately illustrate the representativeness of LAGs in total rural Romania, aiming to provide an accurate socio-economic impact of the LEADER programme. The analysed time frame consists in the two previous MFFs.

The upcoming analysis is structured in such a way that provides the study a fair proportion, it starts from identifying the demographical representativeness of LAGs in the rural side of Romania and quickly follows with several economic and labour-related indicators analysis.

The current research focuses on statistical analysis of the relevant and current data in order to correctly assess the direct LEADER effects over the respective implementation period. Existing research work focuses on pointing out: social effects of collective learning through LEADER (Dargan and Shucksmith, 2008), administrative opportunities (Marquardt et al., 2012) and quality of life improvement (Turek Rahoveanu, 2012), whereas the present study describes the improvement of the essential economic indicators throughout the past 14 years of LEADER implementation.

4. Results

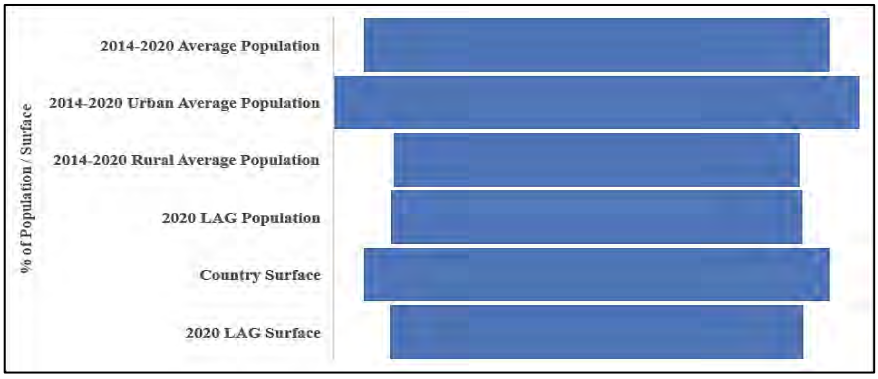


Figure 3. Visual representation of Romanian LAGs population & surface
Source: Authors' conceptualization based on INS and AFIR databases.

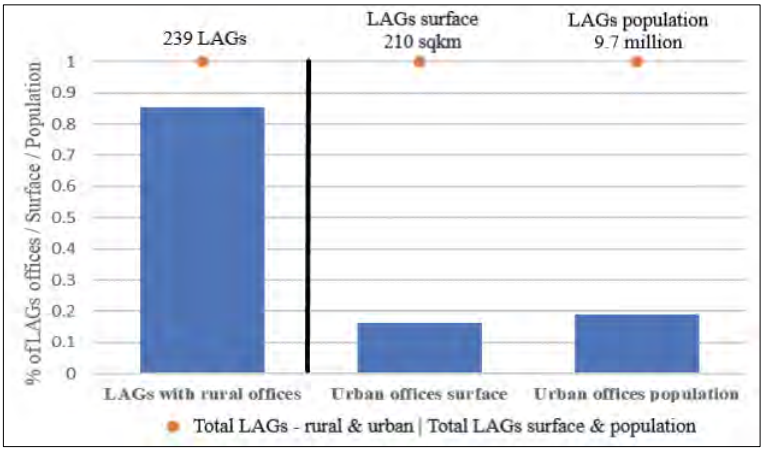


Figure 4. LAG offices representation by origin area out of the total 2020 figures | Urban offices visualization out of the total 2020 LAG surface & population
Source: Authors' conceptualization based on INS and AFIR databases.

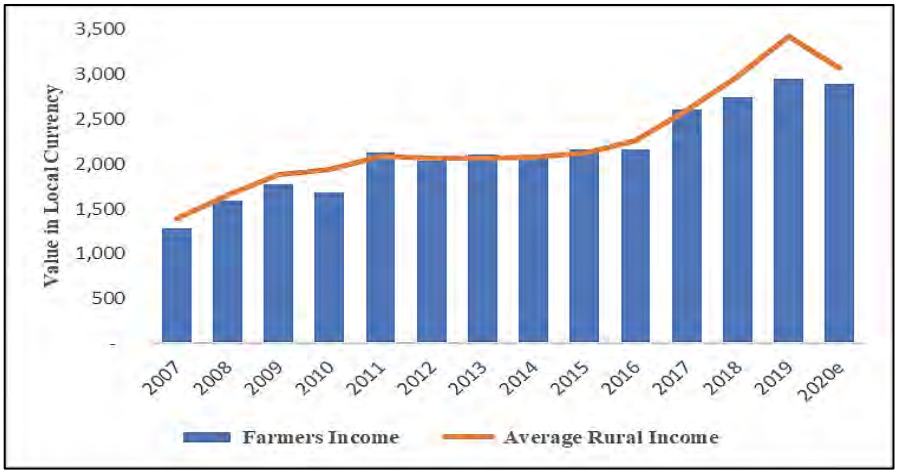


Figure 5. Farmers' income compared to Average Rural Income for 2007-2020 period, estimating the 2020 values based on average historical figures in Local Currency
Source: Authors' conceptualization based on INS and AFIR databases.

In Romania's case, as can be seen in Figure 3, the 2014-2020 Average Population represents 100%, the Rural Population for 2014-2020 representing up to 87% of the average; 2020 LAG Population covers 88% of the 2014-2020 average, counting more persons than the rural average due to the surrounding urban areas and the 2020 LAG Surface covering more than 88% of total Country Surface. LAGs cover a significant amount of land (88% for 2020), while containing almost 45% of Romanians (according to the 2014-2020 INS population), and at the same time addressing and supporting local developing strategies throughout the countryside (Menconi et al., 2018). European LAGs are known to be the main actors in the Union's rural development (EP, 2013), in Romania's case, they also quantify a vast majority of the rural space. According to both Figure 3 and Figure 4, rural representation in Romania could easily be described as part of a LAG, and focusing on rural communities does not imply only targeting farmers, but also the entirety of its citizens. Rural incomes on the previous two MFF recorded a 5% increase throughout the years in comparison with the farmers' income, capping at an all-time high of 16% increase for rural income vs farmers' income in 2019, according to Figure 5.

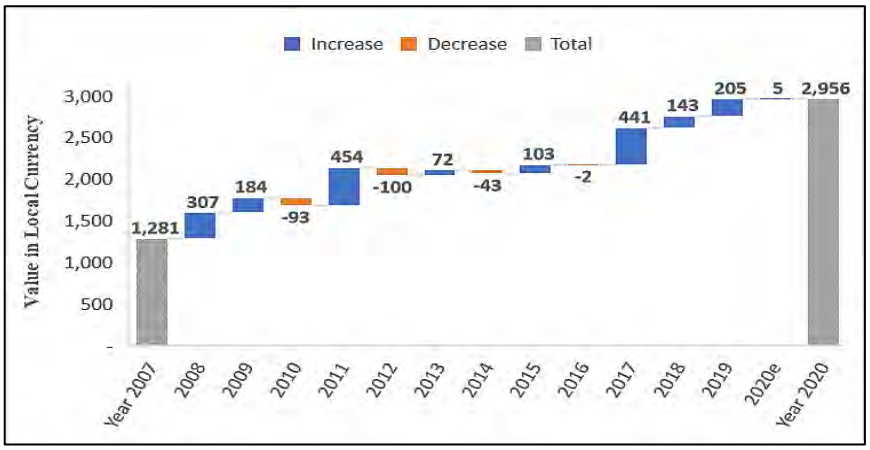


Figure 6. Farmers' income waterfall for 2007-2020 in Local Currency with 2020 estimates based on average historical figures

Source: Authors' conceptualization based on INS database.

The Average Rural Income is only 5% larger than Farmers' Income across 2007-2020 (Figure 5), indicating high agricultural dependency of rural areas, and small representativeness of non-agricultural high-income initiatives in rural areas. A 130% increase in farmers' income in 14 years as shown in Figure 6 might indicate the relevance of development measures under the LEADER programmes, the ups and downs also reflecting the yearly seasonality in agriculture. The two largest income increase blocks have been registered in 2011 and 2017 with more than double of an increase compared to the remaining upsides throughout the period.

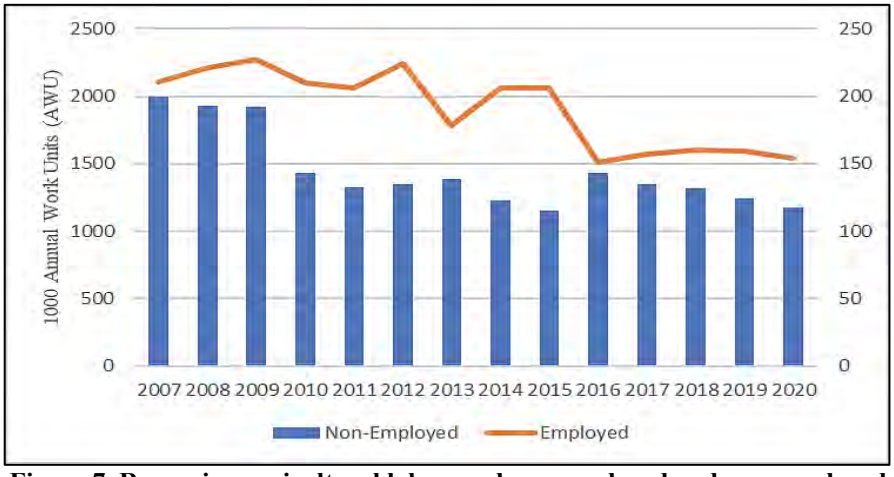


Figure 7. Romanian agricultural labour volume employed and non-employed

Source: Authors' conceptualization based on INS database.

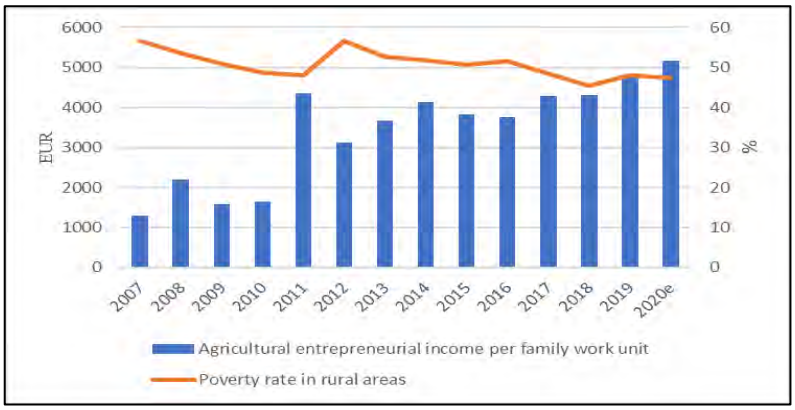


Figure 8. Agricultural entrepreneurial income per family work unit and the Rural Poverty Rate with 2020 estimates

Source: Authors' conceptualization based on AGRIDATA database.

The annual work units in agricultural labour (Figure 7) recorded a 41% drop from 2007 values at the end of the 2014-2020 MFF period. The average yearly decrease of the agricultural workforce recorded a 3% margin with the largest decreases being recorded in 2010 (-26%) and 2014 (-11%), while the largest increase was recorded in 2016 (+24%). Corroborating the previous figure with the agricultural ascending trend (Figure 8) of a yearly increase average of 18% across the 2 MFFs and the expected shrinking poverty rate in rural areas of an average yearly decrease of 1%, it is by far a fairly true statement, that agricultural income growth is in line with current agricultural developments and that general economic standards have been improved across the rural areas of Romania.

6. Conclusions

The problem of rural development is one of the most complex problems of contemporaneity, due to the fact that, in its essence, it involves achieving a balance between the requirement of preservation of rural economic, ecological, social and cultural space in the country, on the one hand, and the tendency to modernize rural life, on the other hand, rural development being at conflict with urban expansion.

Mobility of population and labour force, education and research, rational use of resources, modernization of agriculture and rural communities, protection of cultural and ecological heritage, streamlining of the administrative act must become topics in the permanent attention of all stakeholders (authorities, inhabitants, economic agents, NGOs and associations) as a manifestation of social capital collaborating towards aiding common handicaps: impassable roads, non-existence of sewerage networks and water supply malfunctions.

The remaining payments out of total contracted amounts will further push socio-economic indicators in a better position in the upcoming transition period up to the next MFF for each LAG, creating opportunities and new paths for future development. Rural and farmers' income increases, labour volumes reduction and

rural poverty rates reductions are socio-economic indicators that have been currently assessed, which also showed improvements over the last two funding periods, clearly evidencing that the LEADER program has brought many benefits for rural Romania, and LAGs do represent vectors of real and efficient local rural development, creating the premises for implementing rural development models that respect all the international agreed principles and include all the objectives and priorities at national level.

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Sustainable Development of a PDO or PGI form the Voluntary Scheme "Traditional Product"

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Abstract

The European Union introduced in its regulations, for the first time in 1992, the term of traditional agri-food. In Romania, the first use of this term can be tracked back to 2003 and is particularly linked to the implementation of the European acquis, when a list of national products was sent to the EU. Nowadays Romania has a traditional voluntary quality scheme recognized at EU level and more than one product registered according to the EU quality schemes. Any Romanian or European can register a product under the voluntary scheme in the National Registry of Traditional Products and will receive from the Romanian ministry of Agriculture a certificate and the right to use the national logo. A Romanian product registered in the national voluntary quality scheme by more than one producer can easily be identified and developed in a European quality scheme. The paper's objective is to analyze the legal framework of the Romanian voluntary scheme in comparison with the European quality schemes: Protected Designation of Origin (PDO) or Protected Geographical Indication (PGI) (REGULATION (EU) No 1151, 2012), in order to identify common ground between the two documentations. Also, the advantages of registering first a product as traditional will be presented, as well as the advantages after registering a product as European quality scheme. In order to accomplish the objectives, a comparative study has been developed and certain models have been presented. International and national literature has been taken into account. The result of the research is useful for small producers as it reveals how to transform a traditional product registered in Romania into a European quality scheme, using the documentation prepared nationally as a basis. A case study for the registration of the PGI "Caşcaval de Săveni" will be used as a model to illustrate the pathway for the producers.

Keywords: European quality scheme, agri-food, traditional products, legislation, rural development.

JEL Classification: N40, N44, N50, Q01, Q18.

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1. Introduction

Following the establishment of the European Economic Community (EEC), a series of horizontal (general) and vertical (for specific products) directives have been drawn up to address the issue of the free movement of foodstuffs at European level, without prejudice to consumers' health and interests. In order to respect European diversity, the Council Regulation (EEC) No 2081/1992 on the *"protection of geographical indications and designations of origin for agricultural products and foodstuffs"* and the Council Regulation (EEC) No 2082/1992 on the "*attestation of specificity for agricultural products and foodstuffs*" were implemented.

The definition of *"traditional product"*, as we know it today, has its origins in *"Council Regulation (EC) No 509/2006 of 20 March 2006"* on traditional specialties guaranteed (TSG), which replaced the definition of the certificate of specificity for agricultural products and foodstuffs in the Council Regulation (EEC) No 2082/1992. Under this Regulation, Member States have been obliged to adapt their specific national legislation so that products falling under the conditions of the Regulation are controlled by private control bodies and the labelling of marketed agricultural and food products is differentiated by a specific EU symbol. The definition in the Council Regulation No 509/2006 states that *"traditional"* is specific to the product whose use on the Community market can be demonstrated for a period of time between generations, twenty-five years regarding a TSG.

Until the closing of the negotiations on Chapter VII Agriculture, regarding Romania's accession to the European Union, the above-mentioned European regulations were transposed into Romanian legislation, which were then subsequently amended, as shown in Table 1.

Table 1. Synthetic presentation of the national normative acts that regulate quality schemes until the accession of Romania

Year	National normative act	State
2003	Order No 339 of May 19, 2003 on the approval of the List containing the geographical indications protected and recognized in Romania for food products	Published in the Official Gazette No 351 of 22/05/2003 Repealed by Order No 212 of 30/03/2004
2004	ORDER No 233 of April 8, 2004 for the approval of the Norms regarding the specificity certificates for agricultural products and food products	Published in the Official Gazette No 414 of 10/05/2004 Repealed by Order No 160 of 14/03/2008
2004	Order No 212 of March 30, 2004 on the approval of the List containing geographical indications and protected and recognized designations of origin in Romania for food products	Published in the Official Gazette No 313 of 8/04/2004
2004	Order No 715 of October 6, 2004 for the completion of the Order of the Minister of Agriculture, Forests and Rural Development No 212/2004, regarding the approval of the List	Complete the Order No 212 of 30/03/2004 Annex Published in the Official

Year	National normative act	State
	containing the geographical indications and the protected and recognized designations of origin in Romania for food products	Gazette No 921 of 11/10/2004
2004	Order No 690 of September 28, 2004 for the approval of the Norm regarding the conditions and criteria for the attestation of traditional products	Published in the Official Gazette No 938 of 14/10/2004 Repealed by Order No 724 / 1082 / 360/2013 regarding the attestation of traditional products, published in Official Gazette No 688 of 11/11/2013
2004	Order No 214 of March 31, 2004 on the approval of the List of Protected and Recognized Geographical Names in Romania for Spirits	Published in the Official Gazette No 352 din 22/04/2004 Repealed by Order No 147 din 08/03/2005

Source: Documents issued by the Ministry of Agriculture and Rural Development www.madr.ro.

In 2003, Romania presented to the European Union a list containing the geographical indications protected and recognized in Romania for food products, whose protection is recognized by the agreement between Romania and the European Union, included in the annex to Order No 339/2003, respectively a list containing the geographical names protected and recognized in Romania for spirits, by Order No 214/2004. These lists contained PGI, PDO notified to be officially recognized and protected as European Union names such as: "pălincă", "horincă", "țuică", Sibiu salami, Pleşcoi sausages, Topoloveni plum magiun and about 50 other names in the category of dairy products, products of meat or bakery.

It was only in 2018 that the necessary steps were taken to create a national voluntary quality scheme. The Order No 724/2013 was issued to repeal the Order No 690/2004 regarding the Norms that stated the conditions and criteria for the attestation of traditional products. The European Union approved the changes in February 2020. Since then, Romania has had its first voluntary agricultural product certification scheme, which is registered in the Technical Regulation Information System, also known as the TRIS database. A quality scheme aims to certify the quality and characteristics of products or of the production process, thus reassuring consumers. Also, registering a quality scheme contributes to the sustainable development of the rural environment. The Common agricultural policy (CAP) has as objective the promotion of agri-food products registered on quality schemes through different measures. These direction is revealed in the Commission staff working document called the Evaluation of the impact of the CAP on generational renewal, local development and jobs in rural areas din 8.04.2021 (in Annex 4).

At the same time, the Agency for the Financing of Rural Investments (AFRI) provides financial instruments, investments through PNDR Sub-measure 3.1 - Support for the participation for the first time in quality schemes.

The purpose of the sub-measure is to support farmers and farmer groups applying for quality schemes for the first time, in order to increase the number of applicants producing and marketing agricultural and food products on the basis of quality schemes (AFIR, 2021).

2. Problem Statement

At present, Romania has a small number of product names registered on PDO or PGI quality schemes. Shortly the registration of the name of *"Caşcaval de Săveni"* - Protected Geographical Indication will be published. This is the eighth Romanian quality scheme recognized by the EU, in addition to the protected designation of origin – *"Telemea de Ibăneşti"* and the 6 protected geographical indications: "Magiun de prune Topoloveni"(Commission Implementing Regulation (EU) No 338, 2011), *"Salam de Sibiu"* (Commission Implementing Regulation (EU) No 234, 2016), *"Novac afumat din Ţara Bârsei"* (Commission Implementing Regulation (EU) No 640, 2017), *"Scrumbie de Dunăre afumată*" (Commission Implementing Regulation (EU) 1878, 2018), *"Telemea de Sibiu"*(Commission Implementing Regulation (EU) 1725, 2019) and *"Cârnaţi de Pleşcoi"*(Commission Implementing Regulation (EU) 1667, 2019).

For this reason, the Romanian legislator came to meet the interests of producers, by connecting the national legislation to the criteria of PDO and PGI quality schemes. With the recognition of the voluntary scheme *"traditional product"* by the EU, Romanian products are closer to gaining protection as PDO or PGI, as well as the recognition of their quality, as we will show in this study.

Till now, the only relevant paper in this domain in Romania has been written by Simoni et al. (2017), but in 2018, the legislation for traditional product registration changed, when a new one was registered with the European Union as voluntary quality scheme. However, the authors did not focus on the similarities between the Romanian legislation and the EU regulations back then.

The present study aims to help producers understand the huge potential of registering first their product as voluntary quality scheme "traditional product", as the documentation for the Romanian scheme has a lot in common with the one requested for a PGI or PDO, as it will result from this paper.

3. Research Questions/Aims of the Research

The study will demonstrate the benefits of manufacturers accessing the voluntary quality scheme *"traditional product"*, as a step forward in growing the awareness of the need for association to facilitate the recognition of products as PDO or PGI.

This paper aims to show in practice how several producers from a geographical area, who have completed the registration procedure in the Register of Traditional Romanian Products (RTRP), can start specific and related steps to obtain European recognition of product names, PDO or PGI.

4. Research Methods

The study aims to demonstrate the similarities between the documentation related to the certification of agri-food products on the voluntary quality scheme *"traditional product"* with those required for registration as a PDO or PGI. The research has undertaken a conceptual and methodological dimension. The information was processed by analysing, evaluating and comparing the data that come from the legislation and that can lead to the identification of the common points of the two types of records. Thus, both the evolution of European legislation regarding European quality systems and that of Romania in the field of traditional agri-food products were analysed.

The information presented is taken from the public database of MADR, www.madr.ro and from the EU official sites.

5. National Voluntary Quality Scheme, a First Step towards Sustainable Development of National Products in European Quality Schemes

The paper will present general information on the sector of traditionally certified products and will show to what extent this preliminary step helps or has already helped manufacturers to access European quality schemes.

5.1. The Situation of the Registrations on the Voluntary National Quality Scheme "Traditional Product"

As consumers today are much more focused on the quality and origin of products, the registration of European quality schemes is a strategic advantage for producers. Nowadays, consumers are more focused on the quality and origin of food products (Albuquerque et al., 2018; Becker & Staus, 2009; Grunert & Aachmann, 2016, Pieniak et al., 2009). On the other hand, the consumption of local products offers benefits from the development of the internal market, by creating short chains that make the capitalization of local resources efficient and that ensure to the consumers the need of fresh and quality local products.

At present, the urban population interested in a healthier lifestyle is returning to traditional products that respect as much as possible the authentic characteristics. As many producers have noticed the increase in demand for such products, on 31.12.2020, the number of certificates of traditional products, registered in the National Register of Traditional Products (NRTP) reached 685. It should be mentioned that, Order No 724/2013 on the certification of traditional products - based on which the certificates of traditional products for the years 2014-22 June 2020 were granted, was amended by Order No 112/2020, according to which the exchange of traditional product certificates was required until 31.12.2020 (amendment published in the Official Gazette No 538 of June 23, 2020). Consequently, the data presented below reflects the situation for 2020 and represents the total number of certificates issued in 2020, as well as the certificates for the years 2014 - 22 June 2020 exchanged until 31 December 2020.

Of these, over 50% of the total number of certified products is in the counties of Brașov (169), Maramureș (56), Alba (46), Argeș (37), Neamț (33) and Buzău (33).

The analysis of the territorial distribution of registered traditional products shows that there is a high interest of producers in all areas of the country to access this quality scheme and implicitly in the logo which, printed on products, increases their visibility and adds value. The temperate continental climate and the geographical conditions specific to our country are a determining factor in increasing the potential for registering products on this quality scheme, and create the premise for a wide range of products, given that we find all forms of relief in Romania. These environmental conditions also affect the specificity of the products, as the organoleptic characteristics of the products are, in most cases, related to animal feed, which differs from one geographical area to another.

Also, the identification in a county / area / geographical area of a large number of products with the same name reveals a high potential for the registration of a PDO or PGI quality scheme. Creating such a national legal framework for the registration of traditional products in Romania has provided major benefits for the small producers, because it has been an important first step towards recognizing the national products at European level. Through the registration of products in the National Register of Traditional Products, it has become possible to identify the products that are suitable to become a PGI or DOP. These European schemes include the particularities / specificities related to a certain geographical area. In the cases of the products "Cașcaval de Săveni" and "Cârnați de Pleșcoi", the producers gathered in an association with the purpose of preparing the documentation for the recognition as PGI has had as starting point the particular registration of each unique producer of their product as a voluntary quality scheme that met the conditions of a "traditional product".

Certainly, there will be other famous products in our country, given that, for example, for the name "Cașcaval de Brădet" 7 producers in the geographical area are registered in NRTP -, whereas for the name "Virșli" there are 3 manufacturers registered.

5.2. "Caşcavalul de Săveni", from the Traditional Product to the PDO Quality Scheme

The Association of Producers "Caşcavalul de Săveni" (APCS) includes 5 members, i.e., the economic operators - SC CICOS SRL, SC GERARD SRL, SC VIOFANNY SRL, SC LACT PRODCOM SRL, SC GENYS COMPANY SRL, SC FAVIS SRL, and later the economic operator SC VLĂSIE COMPANY SRL joined. All these operators had obtained during 2014 and 2015 certificates for their own traditional product, a type of cheese obtained in the Săveni area, giving it various names according to the producers' preference. In 2016, they set up the Association and send forward the documentation to MADR in order to obtain the PGI recognition for the product.

It seems that European consumers are not very familiar with the legislation regarding quality schemes. Still, in Romania the term "traditional" is well known

and used for describing something that comes from our ancestors. Romanian respondents to Eurobarometer 389 (2012) recognized only in a proportion of 25% any of the European quality logos. Because the traditional term is so well known in Romania, changing it to PDO or PGI quality scheme will facilitate, probably, the integration of European specific names in the consumers' perception. This might have a positive impact on the other European products that are registered as quality schemes, which are marketed in Romania.

5.3. "Cașcavalul de Brădet", one Step Closer to the European Union

"Cașcaval de Săveni", which is in the final stage of the procedure for gaining recognition as a PGI, can serve as a model for the 7 producers of cașcaval de Brădet, because the term "cașcaval" designates in the Romanian area a specific type of cheese, the product being differentiated by name depending on the area in which it is produced and by the production method used. As a result of the registration of the Brădet cheese product, 7 different producers created the premises for a collaboration among the producers to recognize the uniqueness of the product at European level.

The registration of the PGI Cașcaval de Săveni took more than four years, as there were two oppositions from Greece and Bulgaria for the name "cașcaval". Since they were resolved and there is a precedent for registering a new cheese name, the procedure will be much easier.

The registration of "Cașcaval de Brădet" as a traditional product within the voluntary quality scheme recognized at the level of the European Union implies the elaboration of a specific documentation, which can be easily adapted and used in the process of registering the product as PGI.

According to the National Institute of Statistics (INS, 2021), data regarding the herds of animals (cows) Argeș County is the 3rd most populated county, linking this to the old traditions of producing Cașcaval de Brădet, with a notoriety of over 100 years, there is an obvious potential to register a geographical indication protected in Brădet geographical area.

Today we are talking about the commune of Brăduleț consisting of nine villages and hamlets: Piatra, Ungureni, Slămnești, Uleni, Galeș, Aluniș, Cosaci, Brăduleț and Brădet. The first toponym on the territory of the current commune of Brăduleț is Brădet, which was documented in 1506 by the chancellery of Radu cel Mare, which certifies an exchange of land between these families and the monks of the Brădet monastery.

5.4. From Traditional Product to PGI Quality Scheme

Currently, in European legislation, the term "traditional" appears defined in the context of the registration of a TSG quality scheme according to art. 3 of Regulation 1151/2012 and implies "proven use on the national market for a period of at least 30 years". The phrase "specific character" is assigned to a product whose properties are clearly distinguishable from another product in the same category and which is used to register a quality scheme such as PGI or PDO.

In the national legislation, respectively in the *"Joint Order No 724 / 1082 / 360/2013 of the Minister of Agriculture and Rural Development, of the Minister of Health and of the President of the National Authority for Consumer Protection regarding the attestation of traditional products"*, with subsequent amendments and completions, "traditional product" is considered to be a food product that is made with locally produced raw materials, for which no food additives are being used and that has a traditional recipe, a traditional production and / or processing mode, and which has some particularities that can be found in similar products that belong to the same category (Chebeleu, 2020). Comparing the two definitions, it can be observed that both at national and European level the term traditional is related to the use of the name for marketing, proven by the connection of the product with the geographical area, and the difference is given by the name, which in the case of the traditional product is a personalization that is not covered by European regulations. The difference between the 2 definitions also emerges from the different production quantities.

Table 2. Comparative situation of registration documents at national and European level

Requirements for certification documentation at national level (Task book)	**Requirements for European PDO and PGI certification documentation (Task book and single document)**
Copy of the proof of registration in the Register of associations and foundations (Equivalent registration documents for MS or EEA producers)	Documents certifying the establishment of the applicant group ("group" means any association, whatever its legal form, consisting mainly of producers or processors of the same product)
for traditional product (acc to art. 6, Order No 724/2013, with subsequent amendments and completions)	for PDO / PGI (acc to art. 7, Reg. No 1151/2012):
Product name - personalized, unique name that has not been previously registered	product name as used in the commercial language or in the common language (name of the product already existing in the agri-food chain circuit)
Short description of some characteristics required for a traditional product:	
A product that does not contain additives obtained through chemical synthesis and by other means, such as: food additives, vitamins, minerals, aroma; the product has at origin raw materials;	in the case of PGI - description and justification of all restrictions on the supply of raw materials; specific stages of production to be carried out in the defined geographical area;
Regarding the characteristics of the ingredients that should be used in the manufacturing process:	
- they do not contain food additives, except for natural ones, respectively dyes, aromas, vitamins, minerals, natural sugar; indication of the ingredients used and of the main organoleptic, physico-chemical and microbiological properties, are applicable.	

Requirements for certification documentation at national level (Task book)	**Requirements for European PDO and PGI certification documentation (Task book and single document)**
Short description of the method of production	
- the method should be specific, well known locally, authentic and invariable - the producer will describe the traditional technological process, which will include all production phases, specifying the operations performed manually	There are no required criteria
Some specific elements regarding the packaging	
Photograph and description of the product by section, as the case may be, illustrating the specific characteristics of the product, shape; production and / or processing mode, which reflects a traditional technological process of production and / or processing for the product can be found different from other products that belong to the same category	Description of the elements that define the specificity of the product Colour map of appropriate size to allow precise delimitation of the production area or geographical area
Some minimum requirements and procedures that must be followed for the verification and control of the traditional character of the product	
- Minutes of finding the conformity of the conditions declared in the documentation with those in the field; - Sanitary-veterinary authorization / registration and for food safety; - Copy of the analysis bulletins of the product made at an accredited laboratory;	Copy of the contract concluded with a private body for inspection and certification of agricultural and food products for the verification and certification of the accuracy of the data contained in the SC. Certificate of conformity of the product issued by the ICO in accordance with the requirements of no. 1151/2012 European Regulation and of the CS edition x, version x, revision x, as the case may be
Requirements and limitations regarding the production capacity	
The production of a year, i.e., 365 days, may not exceed the average quantity of 150 kg / liter per day total certified traditional product and not more than 400 kg / liter per day total of the product that is certified as traditional. There is an accepted exception for the bread and dairy production. Traditional bakery has still to keep its production in a certain range: the average quantity of the productions cannot exceed 300 kg per day in total for a certified traditional product and can never exceed 800 kg per day total per certified traditional product;	Socio-economic information on: - current production; - the estimated quantity that it is provisioned to be made in the next 5 years; - customer related information (current and potential), applied to every element of the product chain (production, distribution, marketing); - the geographical destination of the product, current and estimated for 5 years; - the current economic situation and estimated for 5 years.

Requirements for certification documentation at national level (Task book)	Requirements for European PDO and PGI certification documentation (Task book and single document)
Other data, paperwork or bibliographic references requirements	
Regarding the history references of the product, there will be mentioned the traditional character and any historical connection of the future registered traditional product with the place where it is produced or there will be given a notoriety statement on behalf of the local association of producers of the traditional product that will be signed by its representatives.	Regarding the age of the product or the result of the historical connection of the product with the geographical area Evidence that highlights the link between the geographical area and the quality or characteristics of the product, or some link to a specific quality that comes from the geographical criteria, or the product's reputation or other characteristics that result from specificity and uniqueness.
Evidence regarding:	
Local raw material - produced locally, on the state of manufacturing territory;	concise delimitation of the geographical area; connection with the geographical area;
Other documents (if applicable)	
- List of production equipment - Proof of ownership for the production space; - A location map of the space with the location of the equipment used	Other data and information showing the need to obtain protection.

Source: Adapted from Ministry of Agriculture and Rural Development, www.madr.ro and from the EU official sites.

6. Conclusions

The registration of a traditional product as a voluntary national scheme recognized by the EU means that a product can be obtained only in a certain quantity, meeting the provisions of the Order No 724/2013. Small producers must register and/or must be authorized in the sanitary-veterinary field, in order to ensure / respect the traceability of the product that goes directly to the consumer. The registration of traditional products contributes to the consolidation and promotion of short supply chains, which are characterized mainly by direct sales in fairs, own stores, markets.

Regarding the registration of a product name on a PDO or PGI quality scheme, it is worth mentioning that it stimulates the association of producers, individual farmers, animal breeders from a geographical area, who use identical methods of obtaining a certain product and the same recipe with notoriety in the area. Also, with the registration of a product name, specifically at national level, it represents a model for other producers, from another area, as they will benefit from the effects of the locally developed model. In Romania, there are many products of the same category, but with specific properties determined by the place of manufacture and the quality and specificity of the raw material

In conclusion, the national voluntary scheme is a real help for identifying Romanian products and producers who can associate in order to register products in the European Union as PDO or PGI quality schemes. By default, the documentation prepared for the individual registration of the traditional product is a support / a model in the preparation of the specifications and the single document, which are necessary to register and obtain protection on a PDO or PGI quality scheme. Following the comparative analysis presented, it turned out that most of the requirements for the registration of PDO or PGI are also found in the specifications to be drawn up for the traditional product.

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Romania's Agro-Food Sector: Issues of Cluster Development and Competitive Positioning

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Abstract

Economic theory and international practice confirm the role of clusters as catalysts for competitiveness based on innovation and internationalization. European countries are facing the challenge of becoming prosperous societies based on modern, competitive and efficient economies in terms of use and are continuously developing agricultural resources. Mobilizing agro-food actors towards a clean and circular economy, through in-depth cooperation along trade channels such as the use of new technologies, implementation of sustainable solutions plus innovation, are critical for achieving the goal of increasing productivity and responding to the globally growing demand for agro-food products. At regional level, clusters play an important role in making smart specialized operational strategies, facilitating SMEs' access to global markets. This paper aims to identify Romanian agro-food clusters and their competitiveness on the international markets and to answer to the following question: How many agro-food clusters are established in Romania and in which regions of the country? Is cluster formation an engine for the development of the Romanian agro-food sector? Are local clusters internationally competitive?

Keywords: agro-food sector, clusters, agriculture, Romania, competitiveness, development.

JEL Classification: Q13.

1. Introduction

The significant variation of regional economic performance is a specific feature of an economy such as Romania and other Eastern European countries. Numerous theories have been proposed to explain why some regions achieve significantly higher growth rates than others, in Europe or even globally. "In developing countries, there is an active discussion as to the possibility of use of cluster approach to the regulation of socio-economic development of regions. Unfortunately, as of now, cluster projects are not being implemented. However, the role of clusters in the

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development of regions is huge, as they are "growth points" of not only the region but of the whole national economy" (Borisova, Abramova, Zageeva, Popkova, Morozova, Litvinova, 2015).

In the Eastern region of Europe, only Poland manages to compete with the developed countries from Western Europe. This success is due to the growing regional agricultural disparities, which are inevitable consequences of the transformation process and economic growth. The Polish economy is differentiated by the massive economic concentration in 3-4 regions of the country, which generates a quarter of the total gross domestic products. Regarding Romania, it is necessary that companies from the agro-food sector unite their capacities within a national network of clusters in order to support the development at local, regional and international level. Additionally, collaboration with other organizations, cross-sectoral clusters from abroad and development of national and international economic relations and market could lead the Romanian agro-food sector to success. Economic clusters are "geographic concentrations of interconnected companies, specialized suppliers, service, providers, firms in related industries, and associated institutions in a particular field that compete but also cooperate in producing similar products" (Porter, 2000).

The main attributes of this paper derive from the way of systematizing the information. Theoretical aspects are supplemented with examples, financial information, comparative data and results. Firstly, this article aims to identify Romanian agro-food clusters. The geographical concentration of farming activities can promote institutional innovations for farmers. Sharing resources, knowledge, and markets in clustered regions lead to income improvements for farmers (Dadan, Ihle, Heijman, 2017). According to (Porutiu, 2020) the aim of Romanian clusters is to create a regional brand of agro-food products and to be known nationally and internationally. Romania's accession to the European Union in 2007 has created new opportunities to improve the productivity of rural areas. In the European Union, agriculture is one of the main interest areas and the largest area of EU expenditure (Bronisz, Heijman, 2016).

Second, we will examine the competitiveness of Romanian agro-food cluster on the international market. The Romanian agro-food clusters are still at an incipient level. It is necessary to stimulate innovation and collaboration in terms of economic competitiveness, including the acquisition and development of technological equipment for the agricultural sector, food industry and the related sectors, such as Bio economy, renewable energy, environment and climate change, eco-technologies and advanced materials, information technology and communications, in order to finally achieve a sustainable regional development of these sectors, and smart growth conducive to social inclusion (European Cluster Collaboration Platform). We observe the bold and optimistic goals, but it is necessary that these objectives be supplemented with research, promotion, human resources development, the creation of an electronic communication network and the development of national and international economic relations.

2. Literature Review

Starting with the 1990s, Michael Porter made an analysis of clusters, carrying out several works on this topic and those with the biggest impact are "The Competitive Advantage of Nations,"1990, “Clusters and the new Economics of Competition”, 1998, “Clusters and Competition: New Agendas for Companies, Goverments and Institution”, 1998. Currently, most international cluster studies use Porter's work as a model. Michael Porter (Porter, 1990) has shown that it is not enough to interpret only the classical factors of production and to explain the success or failure of a region or a country economy. Economic success linked with innovation, research and sustainable development is influenced by a dynamic interaction of several factors, such as demand conditions; firm strategy, structure and competition; factor conditions; related and supported industries (Serbanel, 2020). Starting from Porter's definition, Otsuka and Ali (2020) reinterpret the definition of agro based clusters as a “geographically proximate and interlinked group of commercial farmers of a product or a group of closely-related products and related interconnected companies for input supply, service provision and processing”. Starting from agro-food clusters and agricultural clusters, and going further in the future, we can achieve an advanced classification called agro-industrial cluster in which the products are processed and transformed by industrial factories into finished products or prepared food. According to Otsuka and Ali (2020) “the range of stakeholders connected with each other’s is generally longer and the strength of their connectivity is relatively weaker in agricultural clusters than in agro industrial clusters. In agricultural clusters farmer directly purchase input from input suppliers and no value addition and processing is done, because agricultural products are destined for local wet markets and non-quality conscious city markets”.

Since Marshall (1920), economists around the world have noted and highlighted three different factors of agglomeration: input-output links, labour market sharing, and information dissemination. These distinct mechanisms, but also the engine of profitability, are associated with cost or productivity benefits for companies. “Taking into account the relationship between the growth of economic activity and the initial level of economic activity in an industry both convergence and agglomeration effects may be present” (Delgado, Porter, Stern, 2014). The three authors wanted to present in their paper called "Clusters, convergence, and economic performance”, (2014) that industries in a certain region may be subject to convergence effects due to low productivity and return. The profitability of economic activity may be declining due to the competition cost and congestion costs. Too much corporate presence in an industry related to the size of a region can intensify local competition and harm new start-ups or existing growing businesses. If the price of specialty products raises at all local companies, there could be declining returns due to congestion costs. From another perspective (Porter, Porter, 1998) in the paper named “Location, Clusters, and the "New" Microeconomics of Competition” present us that “the prosperity of a location depends, then, on the productivity of what firms choose to do there. These sets of wages can be sustained and the profits can be earned. Both domestic and foreign firms contribute to the prosperity of a location based on the productivity of

activities they perform there. The presence of sophisticated foreign firms often enhances the productivity of domestic firms and vice versa". The better the quality of the business environment in a region, the more complicated and sophisticated is the competition among firms. Companies can use advanced logistics approaches if in that region or country there is a high quality of transport infrastructure. Companies also need well-educated people and high-quality schools in the regions or countries in which they operate in order to achieve competitive quality strategies. If bureaucracy is cluttered, companies encounter difficulties in their daily activity and this can affect the business. Exactly for this reason governments must encourage the development of business through concrete actions, such as a light bureaucracy and various other facilities. Knorringa and Nadvi (2016) reinforce the idea that there is a risk for those clusters that have been internationally competitive but have not invested in innovation; research and technology have eroded their market position. Analyses realized over time in clusters case especially in developing countries have shown us that success is not guaranteed. Moreover, the involvement of companies within a cluster can increase or decrease, and the profits obtained will not only be differentiated, but can also have a clear impact on the dynamic attempts within the group.

In the research conducted by Hughes and Boys (2015), we find that in less developed agricultural regions, local producers benefit from a high demand for their products. More than that, even the companies related to this sector benefit from growth demand for their products and services. These benefits can occur through two principal channels. The first one is through supply chain links where different components of local economies are affected by local food systems sales. The impact of these links is in farmers' markets, food centres and local food distribution. In this regard, the conclusion is that the impact of the local food system on local employment and income is positive and growing, but the agricultural region is weak and underdeveloped. The second channel can be done directly, through connections between companies or through intermediaries - such as a vocational school supported by the local business environment. The latter can reduce the cost of doing business through what economists call "congestion savings", meaning general cost reductions, due to business which is grouped in a certain area.

3. Methodology

The questions that the article is trying to answer are the following:

- How many agro-food clusters are established in Romania and in which regions of the country?
- Is cluster formation an engine for the development of the Romanian agro-food sector?
- Are local clusters internationally competitive?

To answer these questions and develop this paper, an empirical research was conducted using both quantitative and qualitative methods. To achieve the results of this paper international databases were used (International Trade Centre), which contains a nomenclature of 22 agro-food sectors (Romanian National Committee for

Macro Prudential Supervision, 2020). Statistical analysis will be performed in the form of maps, direct graphs, comparisons and results to demonstrate Romania's competitiveness. The data is free for public access and the creation of a free user account is required. In order to accurately assess agro-food trade at the regional level, I identified the countries that are in trade relations with Romania in terms of global exports and imports of agro-food products, in 2-digit product categories. The analysis is performed for the period 2017-2019, but with a greater emphasis on the years 2018-2019. Although statistical data for 2020 are largely available, but given the pandemic year caused by Coronavirus, I considered that data are not relevant for the present analysis, because worldwide there were difficulties in terms of supply caused by land, sea and air transport blockages and others restriction. Strictly for 2020, another specific and comprehensive analysis is needed.

4. Result and Discussion

At European level, agriculture and food are among the most active areas in terms of innovation projects. The digitization of agricultural and food activities is gaining momentum. The closest project to this paper is SmartAgriHubs - a cluster of over 155 partners, consisting in start-up companies and SMEs, which can get access to technology-testing, financing advice, market intelligence and networking opportunities. The project is divided into nine regional clusters (UK & Ireland; Scandinavia; France; North West Europe; Central Europe; North East Europe; Iberia; Italy & Malta; South-East Europe), in seven sectors and 28 innovation experiments were performed. Thus, it is functioning as a catalyst for changes in the future agriculture, aiming to digitize millions of European farms (https:// smartagrihubs.eu).

In the analysis conducted by the Romanian National Committee for Macro Prudential Supervision, in 2020, with the focus on reducing vulnerabilities resulting from increasing trade deficit in agro-food products, 10 action measures have been proposed, among which we find: support schemes offered by the authorities through guarantees offered by credit guarantee funds; financing through European funds and guarantees like SME Initiative and Innovfin; investment in promotion and exports. These facilities are proposed to be offered especially for companies that create food chains, generate local clusters, produce ecological goods, produce goods that are in the Top 10 imports agro-food and others. If these measures are implemented in a short time, first of all Romania would reduce its existing trade deficit in terms of agro-food products and also with the help of a sustainable development corroborated with huge agricultural potential that it has, could achieve surplus in few years.

Romanian clusters are divided into regions, include a few of the country's regions and sum up a number of 7 agro-food clusters (Agro Transilvania Cluster, Cluster Agro-Food Regiunea Centru, Indagrovest, Inomar Cluster, ADR S Oltenia, IND-AGRO-POL Cluster and BioNEst Cluster). At a simple glance, the map indicates that there are 3 regions or gaps in which clusters are not present. The first region is located in the Center-West and includes the counties of Sibiu, Alba, Valcea, Hunedoara and Caras Severin, the gap being quite large. The second region with a

large gap on the Romanian map is represented by the Southern half of Moldova region from counties Bacau to Galati, along with other counties from other regions such as Buzau, Braila, Tulcea and Ialomita. The third gap is located in the Center-North and is represented by the counties of Mures, Bistrita Nasaud, Suceava, Maramures, Satu-Mare and Botosani. In order to develop the agro-food sector, Romania needs clusters in all regions to compete, but at the same time to create a unitary value chain for exports.



Figure 1. Romanian agro-food clusters map

Source: https://agrocluster.ro/.

As Figure 2 shows I performed an analysis of sectors placement using an axis with 3 variables (EUR) and 4 quadrants. Vertically we find market share of world exports between 2018-2019, and horizontally there is the Romanian export growth rate between 2018-2019. Bubbles represent the exported value in 2019. As can be seen in the axis below in terms of exported volumes in 2019, cereals are on first place with a value of 2588110 thousand Euro. On the second place are oil seeds and oleaginous fruits with an exported value of 1080331 thousand Euro. On third place is the live animals sector with a value exported in 2019 of 437450 thousand Euro. Regarding the Romanian export growth rate between 2018-2019, cereals record a 20% increase in 2019 versus 2018, and the growth of this sector worldwide in the same period is 0.6%. Oil seeds and oleaginous fruits register a decrease by 10% in 2019 versus 2018, although worldwide the growth of this sector in the same period is 0.5%. Regarding the Romanian export growth rate between 2018-2019 of live animals, it registers an increase of 16% in 2019 versus 2018, and globally this sector registers an increase of 0.1%. Although Romania recorded significant increases in

some sectors between 2018 and2019, decreases can be observed in sectors like: products of animal origin; live trees and other plants; edible vegetables; edible fruit and nuts; sugars and sugar confectionery and others. The main problem is that these decreases are significant, starting from -9% and reaching up to -14%, especially given the fact that they have worldwide overall tendency to grow.

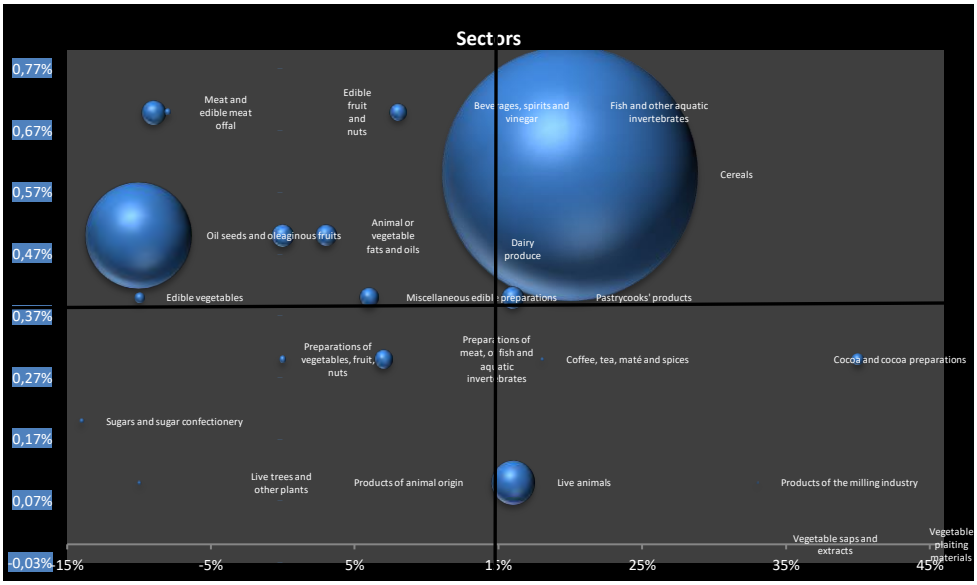


Figure 2. Placement of Romanian agro-food sectors in 2019
Source: Authors' own computation based on trademap.org.

The evolution of agro-food exports had a slightly increasing evolution in 2019 compared to 2018 (Figure 3). Although Romania registers an increase in exports in 2019 of 8% compared to 2018, this result is cancelled by the registered increase of imports with 11% in 2019 compared to 2018 (Figure 4). The total value of imports of agro-food products in these two years exceeds 14 billion Euros, while the exports made in the same period register a bit over 11 billion Euros. This negative result is caused by the fact that Romania exports a lot of raw materials and not finished products. Although the quantities of products are large, the value collected has a small gross margin. If the Romanian cluster system worked, and necessary measures were taken by adopting innovative measures, it could lead to a larger gross margin. There are many examples of good practice in Europe, especially in Western countries like Germany and Netherlands that Romania could take over and adapt to its own business model. However, if we look closer, we will find the model of the Polish agro-food sector, which is increasingly globally competitive.

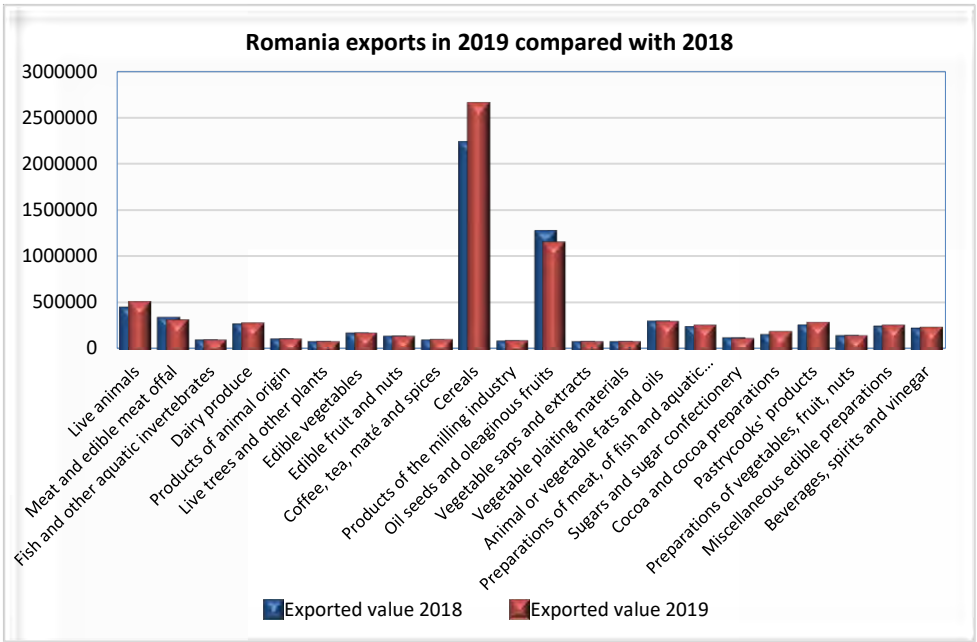


Figure 3. Romanian exports in 2019 compared with 2018
Source: Authors' own computation based on trademap.org.

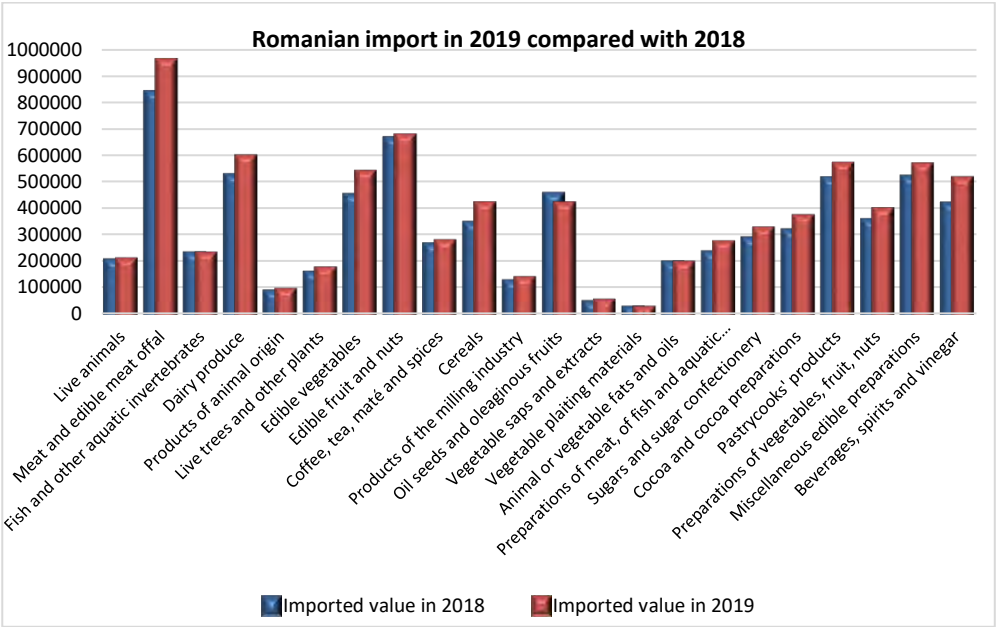


Figure 4. Romanian import in 2019 compared with 2018
Source: Authors' own computation based on trademap.org.

Romania's trade deficit related to the agro-food sector is constantly growing, and in December 2019 an amount of over 4 billion Euros had been accumulated (Figure 5). Only in the last 3 years, Romania has registered a trade deficit of agro-food products worth over 3.5 billion Euros. Between 2017 and 2019, an increase in trade deficit can be observed from year to year. This aspect shows that Romania is losing market competitiveness in front of its competitors both at European and global level. This country has only three sectors in which they registered a commercial surplus: cereals sector, live animals and oil seeds and oleaginous fruits. A reason for concern for Romania is the fact that these deficits deepen annually, without seeing a prospect of recovery. The sectors with the largest deficits in the period 2017-2019 are: meat and edible meat offal (-1.7 billion Euro); Dairy produce (-1 billion Euro); Edible vegetables (-1 billion Euro); Edible fruit and nuts (-1.7 billion Euro); miscellaneous edible preparations (-1 billion Euro) and many others. For this reason, we realize that clusters from the agro-food sector do not have an impact in business development, growth and deficit reduction. Thus, it is absolutely necessary to increase the number of clusters, and the Romanian Government to offer facilities and support to these sectors by developing irrigation infrastructure, developing agricultural equipment, supporting start-ups and small and medium-sized companies.

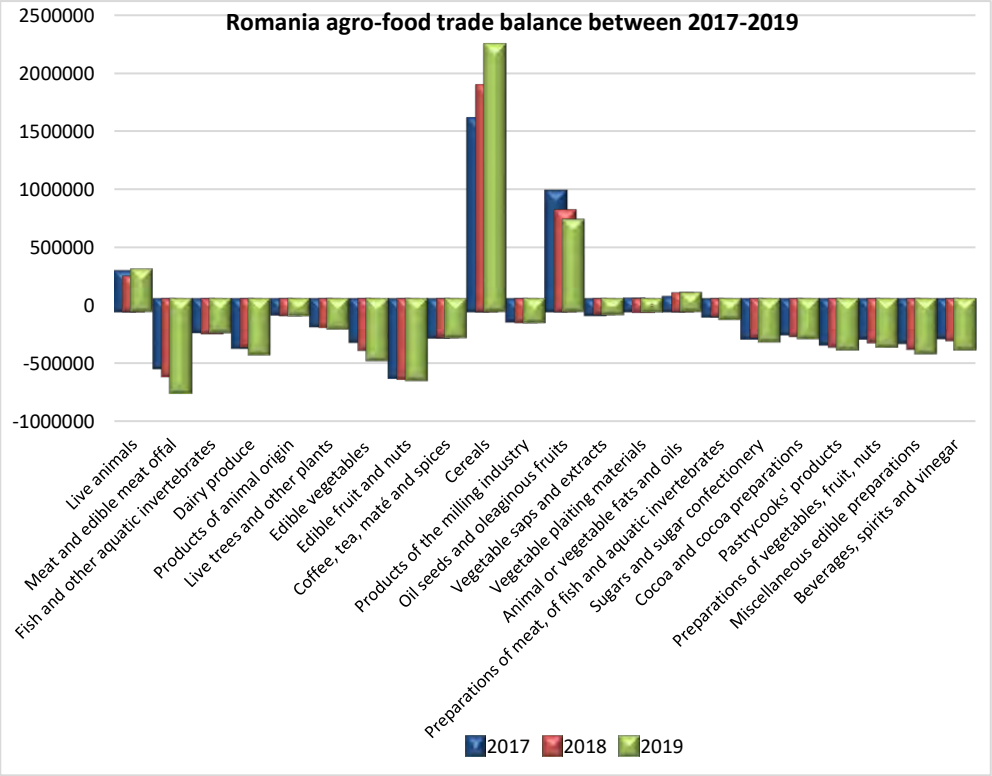


Figure 5. Romanian agro-food trade balance between 2017-2019
Source: Authors' own computation based on trademap.org.

5. Conclusion

Romania has always had different regions from a cultural point of view, but also regarding economic development. These require different policies because the variations across regions are significant. The first step that needs to be taken is to identify existing clusters and to do a SWOT analysis to identify individual strengths and weaknesses. The regions and counties of Romania must be crowded with clusters in order to create an organizational structure that allows the development and concentration of agricultural and economic potential. Farmers' efforts to build clusters or cooperatives together with production factories, distribution companies, traders or key accounts still do not have the desired results. With Romania's entry into the European Union, conditions have changed, and farmers and companies operating in the food industry must develop new business and collaboration models. Undoubtedly, they need a national agro-cluster strategy that will allow them a presence on the world agro-food table.

As observed, Romania is not on a good path in terms of evolution of the agro-food sector. Most governments adopt annual programs, subsidies, financing and guarantees for development, but unfortunately the achievements are few. The current analysis shows a deepening trade deficit reaching over 4 billion Euros in 2019, without taking into account the result of 2020 and how it is caused by the lack of clusters in most regions of the country and by the lack of skilled labour, innovation and technology development. Besides all these problems, Romania also has one of the most divided agricultural areas in the European Union. Thus, the agricultural cooperatives fail to work the necessary surfaces for the production development and sales increase. Additionally, start-ups and small, medium-sized companies need the support of banks in terms of financing the agro-food sector. It is necessary for these companies to regard banks as a business partner where the relationship is win-win for both parties. Unfortunately, at present the Romanian clusters are not the engine for the development of the agro-food sector, as they fail to be competitive on the European and global level.

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The Perspective of the Development of the Industry of the Future in Romania in the Context of Big Data and Digitalization

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Abstract

Industry is still the main branch that contributes to the formation and growth of GDP.

The Romanian industry has lost its supremacy in a series of fields, in which it was once even among the countries with a pronounced industrial accent. Given the resilience and development of the smart economy, we can no longer talk about reindustrialization, but about the development of the Romanian industry on multiple levels, taking into account the possibilities created by robotics, biotechnology, nanotechnology development, artificial intelligence, information technology, digitization of activities in society and so on.

The objective of this article is to identify the possibilities and perspectives of Romania's evolution in the current context, in a double sense: to bring the industry back to the level of European and global competitiveness, and on the other hand to find the formulas, even though the process of resilience, so as to maintain the priority role of this branch.

In the research conducted for writing of this article, we used a whole range of statistical-econometric methods. Thus, we used the index method, the structural analysis method, the dynamic series and the comparative analysis. These methods and others (correlation method, regression model, etc.) were used to process, compare and highlight the trend for the data used in the analysis.

This article has as final objective the identification of the possibilities available to Romania to align with the restructuring of the industry at the level required by the Member States of the European Union.

Keywords: industry, resilience, robotics, digitization, Big Data.

JEL Classification: E23, E31.

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1. Introduction

The article *The perspective of the development of the future industry in Romania in the context of Big Data and digitalization* aims to analyse the perspective of the evolution of the Romanian industry in the next period in the context of Big Data and the process of modernization and digitalization.

Based on an analysis of the way in which the Romanian industry has evolved so far, this article tries to foreshadow the way in which it will evolve in the next period. However, a pertinent analysis cannot be carried out without taking into account the effects the recent effects of the health and financial-economic crisis, which not only Romania is facing, but of the entire humanity.

The development of the industry has a past and a solid foundation, which although affected in the process of free market introduction, privatization and especially our country's access to the European Union, there are still important elements to be considered in the next period for reorientation and reconsideration of the Romanian economy.

Within the national economy, an important number companies will still contribute to the achievements of the Romanian industry. Despite the fact that during the pandemic crisis and the economic-financial crisis a significant number of companies in the field of industry, especially in the field of small and medium enterprises, have decreased their activity, being in the process of restructuring or simply having ceased the activity, we must consider what is the perspective of the evolution of the Romanian industry.

At present, the extractive industry, manufacturing, energy and others have had a significant number of employees, and it is possible for new jobs to appear through investments, which represents an important contribution in the national economy.

An analysis is made of the structural evolution of the industry and the authors try to validate some areas that in the next period must be in the spotlight, so that by introducing modern methods, the achievements of science, research and innovation, to take this branch of the national economy to a higher net level. Thus, some branches, such as oil extraction, natural gas extraction, coal production extraction of other important ores, need to receive the necessary attention and through modernization, they should be able to follow a positive evolution in the next period.

We must keep in mind that the energy industry can be improved by applying other production methods, and thus produce an important qualitative leap in this field. The extractive and processing industry must acquire the importance it deserves in the structure, so as to ensure a positive evolution in the next period as well.

The development of the industry of the future in Romania will no longer be possible at the expense of the standard traditional technological level, but based on discoveries, and especially on the perspectives of the new conquests with a huge impact on the industry, which will further develop. In this context, the elements related to robotization must be studied and assimilated in substantiating the development of the industry of the future, the one that allows the endowment with advanced mechanical, computer or mixed systems, in other words with robots for advanced production processes.

The development of the industry must also be achieved on the basis of biotechnology, in the sense that the technical and production uses of microorganisms, plant cell cultures and others must take precedence. Particular attention must also be paid to nanotechnology, which is a modern technique that allows the manufacture of devices with molecular content and others. Attention must also be paid to the identification and development of branches or areas of activity based on artificial intelligence.

Last but not least, projects based on information and communication technology, known as IT or ITC, need to be developed. Information technology is necessary for the processing of information in particular through the use of computers. We must also not forget that the industry of the future will also develop towards the exploration, preparation and use of underwater industrial activities. We are overcoming the shortcoming in the decision taken following the exploration and exploitation of oil and gas in the Black Sea, but we still hope that this will become particularly important in the period ahead. The digitalization of activities in society will increase and change the current ways of management, funding, project management and research activities.

In the context presented, the authors concluded that the fields of finance, education, research, health, local or central government will have to be deeply digitized in order to meet the requirements of a modern economy.

At the end of the article, the authors focused on the conditions that the government strategy adapted to the new directions must be met and in line with the projects of the European Union. In this respect, the actions planned for each sector are inventoried, which differ according to the objectives pursued and the specific conditions, but most must be in line with the coordinates of the future industry development.

2. Literature Review

Akçomaka and ter Weel (2009) conducted a study analysing the correlation between social capital, innovation and per capita income growth in the European Union. The authors capitalized on the existing level of knowledge and extended the analysis on improving the correlation between factors of production. Anghel et al. (2019) highlighted the important contribution of the industry to the formation of the gross domestic product in Romania, while Anghelache and Burea (2018) directed their research towards the analysis of the evolution of this branch. The authors aimed to capitalize on the results of up-to-date research by proposing new ways / strategies for improvement in the future. Anghelache (2019) performed a complex analysis of the Romanian industrial activity, using in this sense statistical indicators and graphical representations that showed how the industry evolved as a whole, but also structurally. Barbosa and Faria (2011), as well as Buesaa et al. (2010) addressed a number of issues related to innovation and research policy in Europe. Dachs and Pyka (2010) studied issues related to the internationalization of innovation activities and presented the main drivers for the European Union. A similar topic is studied by Onetti et al. (2012). Erosa and Cabrillana (2008) analysed the differences in

productivity between industries. Grand et al. (2016) focused on anticipating the problems generated by a large part of renewable intermittent energies in electricity production. Hoberg and Phillips (2016) analysed the factors that determine the endogenous differentiation of products. Iacob and Dumbravă (2020) made an x-ray of the main elements that characterize the Romanian industry. Kahn and Mansur (2013) studied the correlation between local energy regulations and the geographical concentration of employment. Lee et al. (2016) studied the industries in which capital is invested. Pinto (2009) addressed an issue of innovation diversity in the EU. Srholec (2009) addressed notions of innovation cooperation.

3. Methodology, Data, Results and Discussions

The authors used data published by the profile institutions (National Institute of Statistics and Eurostat), processing them in order to highlight the aspects subject to analysis. Also, some statistical methods were used (data series, structural analysis and study in dynamics). At the same time, the index method was used.

The data submitted to the study were obtained from the data sources used, samples from some official documents and analyses / interpretations of the authors.

- ***The main mutations in the branch structure***

In line with the global trend of fragmentation, specialization and cooperation on product components, in the national space or between different countries, the Romanian industry has gone through a process of deep division of industrial giants.

Characterized by an excessive degree of concentration and integration of production, in the process of implementing the market economy, enterprises have been transformed, divided or disappeared. As a result of the changes during the transition and implementation of the competitive market economy, in accordance with the new legislation, the total number of enterprises, organized on the basis of the new principles, was 49,178, compared to 1989, when there were 2,102 industrial enterprises, with a high degree of concentration and integration of production.

Table 1. Distribution of enterprises in industry, by size classes, in 2019

	Total enterprises	of which: by size classes, by number of employees:			
		- micro – (0-9)	- small – (10-49)	- medium - (50 - 249)	- big – (250 and over)
Total industry	**49 178**	**34 928**	**10 233**	**3 213**	**804**
- extractive industry	**1 072**	760	241	51	20
- manufacturing industry	**46 761**	33 031	9 870	3 115	745
- electricity and heat, gas and water	**1 345**	1 137	122	47	39

Note: The grouping was performed according to Eurostat criteria.
Source: Statistical Yearbook of Romania, 2019, I.N.S. - data processed by the authors.

The existing small and medium enterprises in 2019 represented 31.1% of the total number of active industrial enterprises. Their share in the total number of employees, as well as in the volume of turnover per total industry were much lower. This

explains, to some extent, the relatively slow evolution of the private sector in this branch, as small and medium-sized enterprises, although wholly owned by the private sector, still make a modest contribution to the volume of production achieved by the total industry.

The process of privatization of state-owned companies and large industrial companies, together with the still low proportion in the total industry of the production of small and medium enterprises, made up the share of private sector production as a whole in the industrial activity as a whole.

Table 2. Share of small and medium active enterprises in the total number of enterprises in the industry, by number of staff and turnover in 2018 and 2019

	2018	**2019**
	by staff number	
Extractive industry	21.95%	22.76%
Manufacturing industry	50.53%	49.84%
Electricity and heat, gas and water	23.71%	23.28%
	by turnover	
Extractive industry	21.81%	43.76%
Manufacturing industry	38.89%	37.88%
Electricity and heat, gas and water	31.25%	33.34%

Source: Statistical Yearbook of Romania, 2019, I.N.S. - data processed by the authors.

The data in table number 2 are for the years 2018 and 2019. We did not bypass the year 2020, in which a significant number of small and medium enterprises have reduced their activity, went into insolvency or went bankrupt, disappearing from the market.

According to the nature of the share capital, out of the active industrial enterprises existing in 2019, over 80% were enterprises with a majority private property, the most of the being in the manufacturing industry. Out of the total number of active industrial enterprises, an important number of units were constituted with entirely foreign capital, most of them being in the manufacturing industry.

In general terms, regarding the number of active economic agents, private entrepreneurs are also taken into account, and their number in the industry activity was, in 2019, quite high.

The differentiated growth rates of the prices of industrial products in certain branches and in different periods exerted, together with the changes determined by the evolution of the physical volume of production, a significant influence on the structure of production on the main activities.

In the period 2010-2019, with the advancement of the process of restructuring industrial enterprises and setting prices on market criteria, it is found that the share by sectors of activity of industrial production was mainly determined by the evolution of the physical volume of production, reflected by a slight increase in the share of the manufacturing industry and a declining trend in the share of the extractive industry and the production of electricity and heat, gas and water.

- ***The industry of the future*** will no longer be able to rely on the traditional / standard technological level, but on discoveries and especially on the perspectives of new conquests, with a huge impact on the industries that will develop. In this context, they must be studied and assimilated in the substantiation and development of industries based on:

a) Robotization, which involves equipping production processes with mechanical, computer or mixed systems, in other words with robots. This will involve increasing productivity, replacing labour in profitable, sensitive or harmful operations. In a narrow view, this perspective could be interpreted as a replacement of the human factor, which would increase the number of unemployed population. This appreciation cannot be accepted in this way, because robotization will involve the development of activity in other fields such as research, innovation, invention and others. Under these conditions, it is necessary to restructure education, the development of research institutions, innovation, in other words, to improve the quality of the workforce.

b) Development of industries based on biotechnology, in the sense of the use in technique and production of microorganisms, plant and animal cell cultures for the production of useful substances. Thus, these crops of plant and animal substances can be used in agriculture, the food industry, pharmaceuticals or other *organic* products. And now there is the problem of developing *bio* industries, an aspect that will develop in the next period. Biotechnology is a young branch of the future of science that aims to help prevent the effects of food shortages, raw materials, energy sources, by studying the possibilities offered by the activity of enzymes in industrial processes. The emergence and development of biotechnology is related to the evolution of molecular biology, which allows understanding the links between molecular structure, morphology and the ability to function, growth and multiplication. These give biological systems unique features of computers with telecommunications, they are novelties that do not aim only at a straight extension of the machines of the industrial era, but at the leap to biosynthesis and biotechnologies in the pure sense.

c) Paying more attention to the development of nanotechnology, which is a modern technique allowing the manufacture of devices with molecular content, capable of manipulating structural matter, atom by atom. Nanotechnology will evolve and impose development, as a result of research into new industries.

d) Development of branches or fields of activity using artificial intelligence, closely related to the IT system, based on information technology. Romania has an international IT school, and the problem that arises, first of all, is the development of this activity based on natural intelligence, which is developing towards artificial intelligence.

e) At present, a number of projects are known and developed based on information and communication technology, abbreviated IT or ITC. This information technology is necessary for the processing (procurement, processing, storage, conversion and transmission) of information, in particular through the use of computers. Information technology is a field, a link between classical electronics

and computer science. Information technology, also known as computerization process, finds application on multiple levels related to data and information, namely: processors, computers, hardware and software, programming languages, system design and industrial activities. The occupations of specialists in these fields are quite varied and are evolving at an accelerated pace, and will be used in the industries of the future. In the last period of time, the scope of information technology has greatly expanded, including mobile phones, automation of automobiles, applications in sensitive industries, along with an increased demand for IT specialists on the labour market. In this regard, we must notice the improvement of higher education, research and innovation in this field. We specify that, in these fields (telecommunications, software and IT services, hardware and electronics), the number of employees has increased year by year. Thus, in the peak years, 49,800 people worked in these fields in telecommunications, 54,300 people in software and IT services and 20,000 people in hardware and electronics. We recall that an important number of people (specialists) in this field work with great results abroad. It becomes a priority that we must program the development of these industries of the future in order to keep in the country the Romanian specialists, who have a high standard of training.

f) The industry of the future will also move towards the exploration, preparation and use of underwater industrial activities. It is not just a statement, but we are referring to concrete facts. Thus, in the marine platform (Black Sea) of Romania there are important natural gas and oil resources. Marine platforms also contain other mineral resources, which will be the subject of research, exploration, exploitation and development of the industries of the future. Similarly, we can approach the exploration of the cosmos. Of course, these thoughts are for the development of the industries of the future. These could only be achieved through the development of research and innovation and especially through international cooperation.

g) The digitalization of activities in society will increase and change the current ways of management, financing, project management and activities. The fields of finance, education, research, health, local or central government will go through a deep process of digitization.

Considering the aspects presented above, in the current stage of Romania's development, it is necessary to reconsider the role of industry in the national economy, clearly establishing the modern development strategy of the country's industry. In this context, it is necessary, in the new conditions of sustainable economic development, to develop, in particular, those branches which are based on national resources and which have a tradition, as well as those which have significant production capacities, establishing, at the same time, the reduction of the levels at which the energy-consuming productions operate, which require imports of expensive raw materials and energy resources.

The creation of rational production capacities must be considered, avoiding the excessive degree of concentration, which would ensure their operation at maximum capacity, with high productivity and efficiency, with high value added and a high degree of competitiveness, capable of also meeting the requirements of external partners. Continuing to assign increasing importance to small and medium-sized

enterprises, they would develop in line with large industrial enterprises, contributing, horizontally, implicitly to obtaining their finished products.

- ***The strategy must focus*** on new elements of sustainable development, the priorities of industrial policy and the sectorial approach, including elements aimed at:

a) the priorities of the industrial policy as a whole, respectively the acceleration of the structural adjustment, the improvement of the business environment, the attraction of an increased volume of foreign investments and the attraction of community funds;

b) the priorities in the sectorial strategies: the accelerated restructuring of some industrial sectors - the steel and the defence industry; supporting the intense development of key sectors in the economy - telecommunications equipment, information technology; ensuring the food security of the population, which imposes the development of the industries of tractors and agricultural machines, of the production of fertilizers, of the food industry; ensuring the health of the population, which requires the development of the drug industry; development of industrial sectors related to the modernization of the necessary infrastructure and facilities (means of transport, equipment).

- ***The actions envisaged for each sector*** differ according to the objectives pursued and the specific conditions, but most of them must be part of several common coordinates:

a) selective restructuring of manufacturing nomenclatures by eliminating non-viable products and technologies;

b) promoting high-performance technologies and high value-added products;

c) modernization of technical infrastructure and technologies in order to reduce costs, improve product quality and reduce pollution potential;

d) deep restructuring (organizational, financial, managerial and commercial) of state-owned national companies, in order to increase their attractiveness for foreign investors;

e) resizing the production capacities in relation to the internal and external demand for products / services;

f) outsourcing of operations complementary to basic productive activities;

g) reduction of pollution caused by industrial activity, according to the relevant standards of the European Union;

h) increasing investments in special programs of education and training of the labour force, in order to increase its professionalism, mobility and flexibility, thus achieving a closer link between the development of physical capital and human capital;

i) the development of the industry due to the high intelligence potential that Romania has;

j) giving high priority to development, innovation and innovations for the restructuring of the entire industry based on advanced technologies so that the entire economy operates on the most modern basis;

k) intensifying the geological prospecting, in order to capitalize on the superior natural resources available to Romania, thus developing on modern technological bases of the economy;

l) use of Community funds and participation in European projects. Romania needs to reconsider some possibilities to become useful for European and world cooperation.

Acting in the spirit of the European Union strategy on industrial development, in order to harmonize Romania's industrial policy aimed at increasing the industrial production of the community as a whole, and of each Member State, the Romanian industry and companies must demonstrate their ability to adapt to international market requirements.

4. Conclusions

From the study carried out by the authors and from the interpretation of the data, which have reflected the evolution so far of the Romanian industry, some mainly theoretical conclusions can be drawn. Romania must move quickly to research. At present, the percentage of GDP devoted to research of about 0.48% is not inconclusive, but insignificant and can lead to other ways of interpreting this evolution.

Another conclusion is that in the field of research and cooperation Romania must align with European standards, participate in future projects on the development of European Union industry and more widely in Europe and worldwide.

Another conclusion is that the measures that will have to be taken in a vision regarding the future development of the Romanian economy must be based on a very deep analysis of the effects that the pandemic and financial-economic crisis had on the evolution of the Romanian industry at some point.

At the same time, Romania should focus and find a way to improve some areas of industrial development in which to have the supremacy in order to participate in the major European projects aimed at the European Union. Of course, we must not forget that this recovery and resilience program must be combined with the ideas contained in this article regarding the development of the industry of the future based on the most modern discoveries of research and innovation.

The authors consider that the objectives proposed in conducting this study have been met. Of course, this research can be developed / improved by expanding the study area.

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The Art of Product Management – a Practical Guide for Product Value Maximization

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Abstract

In a realm overflowing with innovation hype, creating winning products that truly address our customers' needs has become a very challenging assignment. While everyone aspires to build the most desirable products for their customers, reduce risks, and generate great value for their businesses, they are unlikely to succeed without the right methods.

This article is a case study based on qualitative and quantitative research (252 respondents to a survey) that aims to identify which worldwide techniques help product managers balance the four big risks: value, usability, feasibility, and business viability. The sweet spot is about true product teams that move beyond the classical Agile delivery methodologies, adopting a continuous-discovery mindset, and taking full ownership of their outcome while making evidence-based decisions at each step of their product development process. Moreover, the paper consists of a list of recommendations on how to apply some essential Product Management principles such as a focus on the outcome, not on the output, usage of the right product metrics, and empowered teams.

Keywords: Product Management, Business Agility, Experimentation, Data-driven Products.

JEL Classification: C90, D02, D80.

1. Introduction

Every company's success depends on customers and their willingness to buy the products. Product managers are responsible for what the product teams build; thus, they are highly accountable for the success of the business.

In an era of continuous development and innovation, Product Management has become a crucial discipline, especially in companies for which technology represents an essential growth driver.

Effective Product Management requires experimentation and a data-driven mindset, strategic thinking, and great product leaders who can let go of the future they have imagined if this is not desirable anymore. The experimentation year,

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2020, has taught us that we need to embrace the uncomfortable process of letting questions lead our product creation process. We should run experiments that enable us to understand our customers' needs, measure the impact of our actions, and identify what works best, to move forward and scale in a very agile way.

However, when we start building a product, our brains crave certainty - most product managers tend to define all the requirements upfront, together with the stakeholders or users. After that, the development team gets a list of specifications and starts building them in iterations. This iterative development process is what most companies call *Agility*. The truth is, this describes only product teams working Agile on the operational level in a Waterfall organization. The best product organizations move from just practicing agile methodologies on the operational level to practicing true Product Management - adopt a continuous discovery process and focus on the value they want to deliver, not on the functionalities they need to build.

This article is a case study that focuses on identifying the maturity level of teams building technology-powered products, aiming to identify the most common challenges they face in their journey and propose recommendations on how to tackle them.

2. Problem Statement

Amid the increasing relevance of data in decision-making, extended customer and design centricity, and emerging software-development methodologies, the Product Management discipline has evolved to impact every aspect of building a successful product. As Marty Cagan (2017, p. 62), the founder of Silicon Valley Product Group, mentions, "the product manager role needs to be among the strongest talent in the company."

Notwithstanding the importance of product managers, the results of some recent surveys reveal that organizations are either underinvesting in this essential role or struggling to create an environment that fully empowers them:

- The 2021 State of Product Management survey done by Product Pan, based on more than 2200 responses, shows that the two most significant Product Management challenges are: getting consensus on product direction and setting roadmap priorities without customer feedback;
- McKinsey Product Management Index shows that only 35% of product managers have a clear development plan and know what to do to advance in their company;
- The Strategic Thinking Manifesto (2021) research, including 500 leaders at 25 companies, reveals that 96% of these do not have enough time to define a clear and proper strategy.

In this context, it is not a coincidence that some Product Management thought leaders admit that: "Product Management is hard" (Marty Cagan, 2020), "building great products is hard" (Dan Oslen, 2016), and facing these challenges, "organizations must build out a Product Management practice that leads to the creation of value" (Melissa Peri, 2018).

While Product Management roles and responsibilities are thoroughly described in published literature, there is still much room for exploring how to successfully apply them while dealing with today's most common impediments.

3. Research Questions/Aims of the Research

This research aims to describe how technology industry companies apply the Product Management discipline to create products that customers love and drive their business.

It should act as a practical guide for all the product leaders and teams interested in maximizing their products' value. The article describes the research teams' Product Management maturity level. Maturity is determined based on their ability to tackle the four significant Product Management risks: Usability, Value, Feasibility, and Business Viability, to reduce the likelihood of either spending time and effort building products that nobody uses or not driving the business's strategy forward. The research also aims to identify the product teams' most significant impediments, how open they are to experimentation and data-driven mindset and behaviour, and how they define the product managers' roles and responsibilities in their context.

In addition, the article details personal recommendations that product teams should consider when addressing the most common impediments – not enough time to innovate, product engineers not involved in the discovery process, and too much focus on the output (deliver functionalities), rather than the outcome (deliver value).

4. Research Methods

The basis of the article is exploratory and practical research – a survey conducted with product people, from the technology industry, which reveals the Product Management maturity level of the respondents on areas like: the ability to tackle the four product risks, experimentation, a data-driven mindset, empowerment, and a sense of ownership of the product team. The survey also identifies the most common impediments that product teams face and how they relate to their roles and responsibilities in their specific context.

Information about the survey:

- Research methods: Online survey;
- Period: January 2021 - March 2021;
- Number of respondents: 252;
- Respondents roles: Product Engineer/Developer (44%), Agile Coach/Scrum Master (25%), Product Manager/Product Owner (22%), and also UX/UI designer, Manager, CEO;

Information about respondents' company:

- Company stage: 69.7% enterprise, 24.2% growth-stage, and 6.1% start-up;
- Company location: 75.8% Europe, 9.1% North America, 9% Africa, Latin America, or Middle East, and 6.1% globally.

Information about respondents' products:

- Product category: 49% Business Services, 19% E-commerce sites/Marketplaces, 16% Mobile Applications, 5% Customer Devices, 2% Social Media, and 9% Other;
- Product stage: 46% stable and seeking continuous innovation opportunities, 24% reached product/market fit and intend to scale and grow, 15% working to achieve the product/market fit, 12% in sunset stage, and 3% working to find problem/solution fit;

5. Findings

This chapter describes the main principles and behaviours that define a mature product team and explains why they are essential to maximizing the product value. Next, the article presents the Product Management Maturity survey results relative to the ideal product team definition. The last part of the chapter presents recommendations for teams that want to improve the product maturity level.

5.1. Mature Product Teams' Definition

A product team's maturity is highly correlated with the team's ability to tackle the four essential Product Management risks, an experimental data-driven mindset and behaviour, a sense of ownership and purpose, and a desire to solve customers' problems. Also, the product manager plays an essential leadership role in setting the right direction and way of working.

The product team should tackle the **product risks** before starting the implementation process. As Cagan explains (2018, p. 35), these risks are:

- Value risk (assessing if the customers will choose to buy what the product team builds)
- Feasibility risk (assessing if the product engineers have all the necessary skills to build the product, e.g., technology, tools, time, skills)
- Usability risk (assessing if the users understand how to use the product)
- Business Viability risk (assessing if the product works according to other aspects of the business, e.g., legal, marketing, finance).
- Product teams must navigate the uncertainty around the product creation process. Working with an **experimental team** through the discovery and delivery stages, the product manager supports the business to achieve value through solving user problems. When thinking about uncertainty, Melisa Perri (2019) considers it helpful to look at the following framework:
- Check Facts to make sure they are accurate (Known-Knowns)
- Identify Questions that need to be answered through experimentation and data (Known-Unknowns)
- Rely on Intuition to guide familiar-territory decisions (Unknown-Knowns)
- Use data and Innovation to identify patterns and generate insights (Unknown-Unknowns)

Mature product organizations and leaders understand the power of experimentation and try to build psychological safety for the product teams to experiment and get excited about that continuously. As Peter Skillman (1999), the GM Core UX at Microsoft, said, "enlightened trial and error succeeds over the planning of the lone genius."

The experimentation culture and behaviour are also very well structured by the Lean Startup process described by Eric Ries (2011). One of the most powerful principles of Eric's philosophy is the Build – Measure – Learn loop. This principle relies on building a simple version of the product, a minimum viable product (MVP), measuring its impact by analysing the users' reactions, and learning how to continue with the idea based on their feedback. Applying Lean Startup, companies can reduce waste from the product creation process by taking time to explore uncertainty, experiment, fail fast, learn from mistakes, and make informed decisions based on factual data, not assumptions. A successful Lean Startup adoption requires a **data-driven mindset and behaviour**. Croll and Yoskovitz (2013, p.3) describe the importance of data in the product creation process: "Your delusions, no matter how convincing, will wither under the harsh light of data. Analytics is the necessary counterweight to lying, the yin to the yang of hyperbole." Using data, mature product teams learn how to iterate in the right direction.

Another essential characteristic of mature product teams is their **autonomy and empowerment** to make decisions and guide their products' direction. As Cagan (2020) says, "in an empowered product organization, product leadership responsibilities include coaching and staffing, product vision, team topology, product strategy, team objectives, and working with the extended executive team to transition the organization to truly leveraging these product teams to power their business, rather than treating them as a cost centre."

The product manager has a key role in successfully applying Product Management principles and techniques. According to McKinsey Product Management Index, the top five core competencies of a mature product manager are:

- Business acumen (e.g., define the product vision and strategy, understand and use data, prioritize the outcome-driven objectives)
- Market orientation (e.g., ability to understand market trends and define competitive strategies)
- Customer experience grounding (e.g., ability to design customer-centric journeys)
- Technical skills (e.g., understand the technology and architectural trends)
- Soft skills (e.g., ability to influence, communicate and motivate)

5.2. Product Management Maturity Score

Source of all the following figures (Figure 1-7): Online survey results.

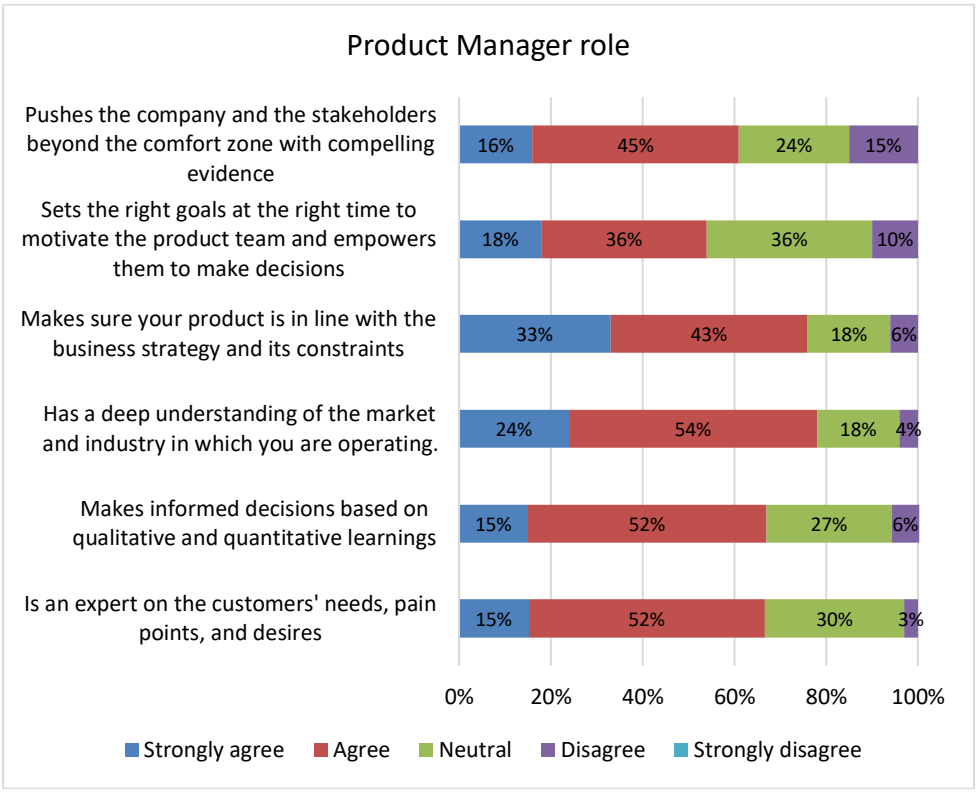


Figure 1. Product Manager role - roles and responsibilities

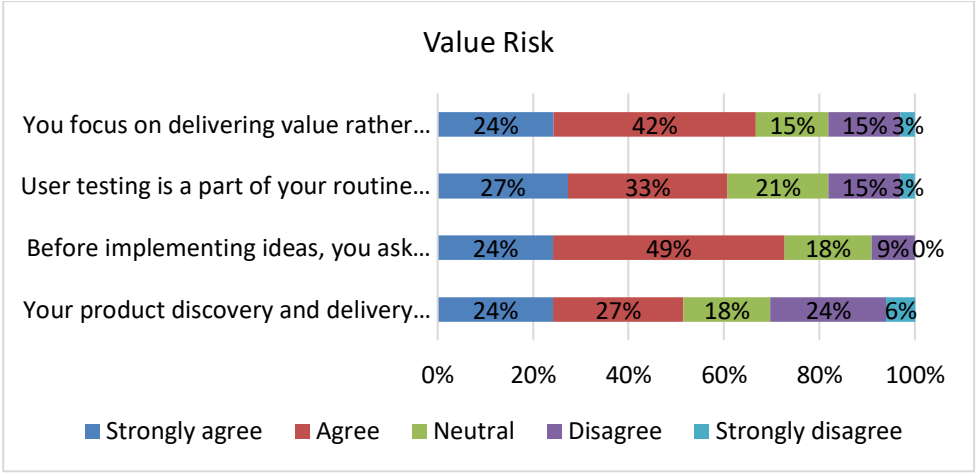


Figure 2. Tackling the four Product Management risks – Value

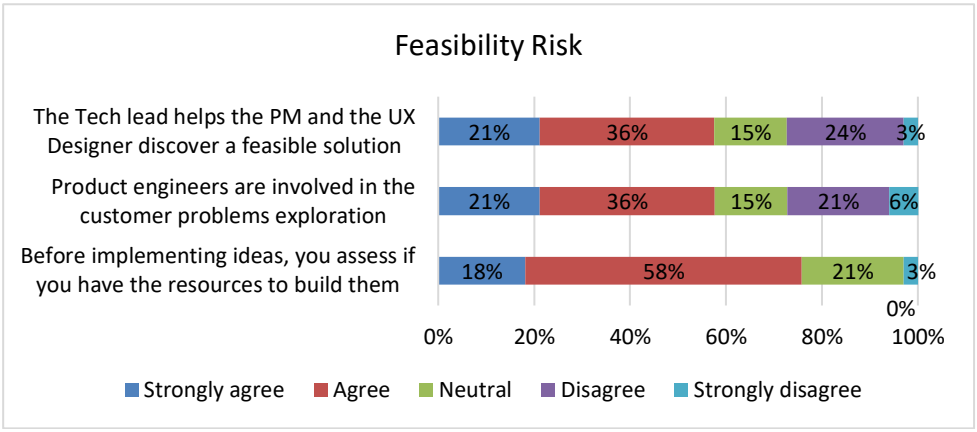


Figure 3. Tackling the four Product Management risks – Feasibility

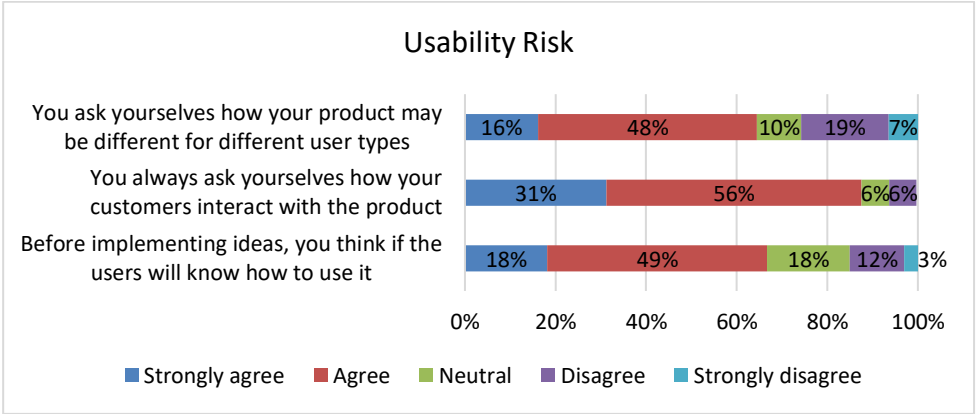


Figure 4. Tackling the four Product Management risks – Usability

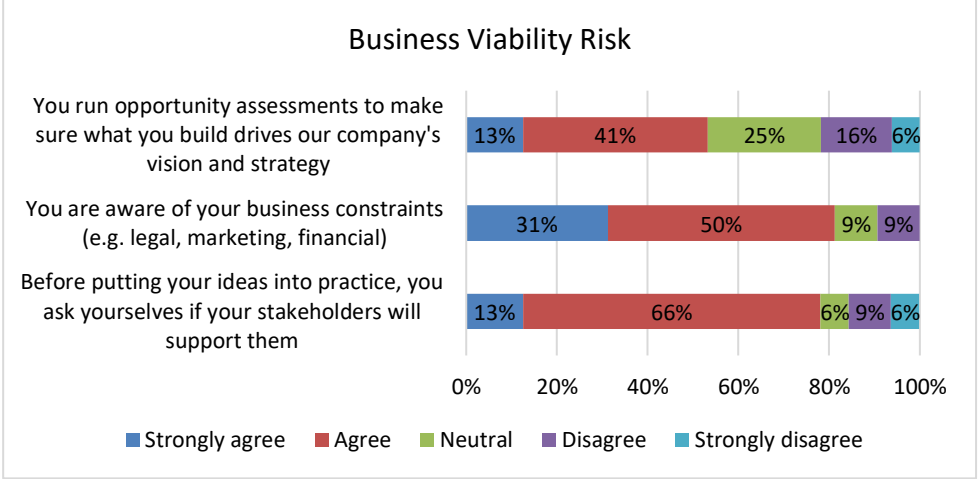


Figure 5. Tackling the four Product Management risks - Business Viability

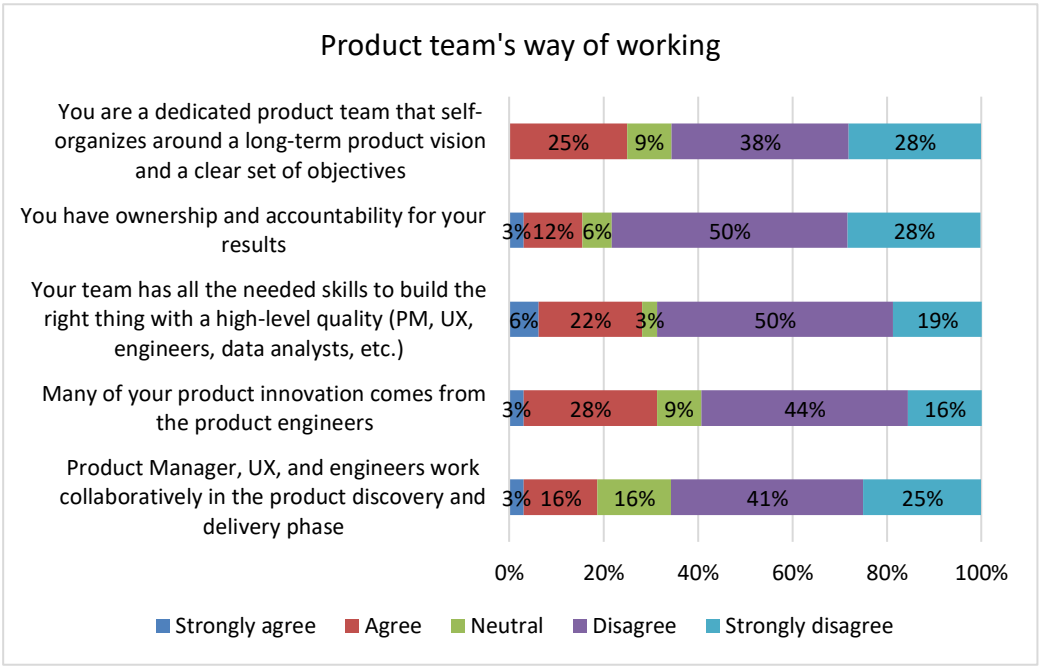


Figure 6. Product team - Empowerment, self-organization and collaboration

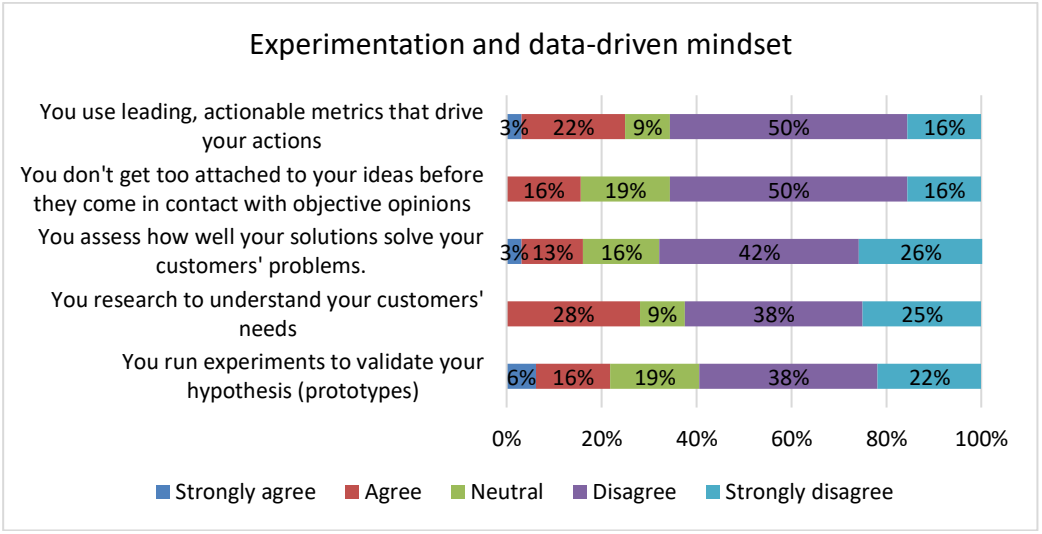


Figure 7. Experimentation and data-driven mindset maturity

5.3. Key Observations and Recommendations

The art of Product Management has a lot in common with understanding the industry, the market, and the customers. Around 70% of respondents agree or strongly agree that their product manager is an expert in understanding customers' needs, pain points, and desires (Figure1, row 6). Even more of them consider the

product manager has a deep understanding of the market and industry they are operating in (Figure 1, row 4). However, less than 20% of respondents agree that the whole product team is involved in the product's discovery phase (Figure 6, row 5). As the survey results indicate, there is a low level of empowerment of the product engineers. The product discovery phase seems to be perceived as a siloed responsibility, rather than a collaborative effort between the product manager, UX designer, and engineers. As a consequence, only 30% of respondents consider that product innovation comes from engineers (Figure 6, row 4).

Also, the lack of empowerment and autonomy on the product team level leads to a low level of accountability and ownership for their results – less than 20% of respondents agree that they feel accountable for their work (Figure 6, row 2). In association, less than 40% find it hard to self-organize around a long-term vision (Figure 6, row 1).

Another critical insight concerns the data-driven behaviour. While 70% of the respondents agree the product manager makes informed decisions based on qualitative and quantitative metrics (Figure 1, row 5), less than 30% consider that using actionable metrics is a practice that all the team's roles should adopt (Figure 7, row 1).

Organizations and product leaders should improve their ability to create an environment where the product teams feel safe to experiment, and make informed decisions based on data. They should define clear strategic guidance for the product teams, but give them the freedom to decide the best solution to achieve the vision. For that, engineers should step beyond the delivery phase and collaborate with the Product Management roles during a continuous discovery phase.

These aspects also reflect in product teams' ability to tackle the four Product Management risks. We can identify room for improvement in tackling the *Feasibility* risk – only around 60% of the respondents consider that the technical lead works with the Product Manager and UX designer to identify a feasible solution (Figure 3, row 1).

Similarly, the *Usability* risk results show that there is still room for improvement in understanding the customers' profile and interaction with the product. Only around 60% of respondents ask themselves how their product may be different for one user to another (Figure 4, row 1). For that, product teams should use UX techniques like user personas, empathy maps, customer journey mapping, usability testing, A/B testing, and usage metrics.

Furthermore, we notice that 80% of respondents pay attention to their business constraints and stakeholders to tackle the *Business Viability* risk (Figure 5, row 2, 3). However, only around 50% understand how their products contribute to the overall business vision and strategy (Figure 5, row 1). An essential practice that ensures focus, purpose, and alignment between all the organizational levels is the Objectives and Key Results method. It helps the product teams and the organization focus on concrete directions and assess their progress against specific success measurements.

Last but not least, only around 50% of respondents adopt a continuous discovery and delivery process, which is a good practice for assessing the *Value* Risk (Figure 2, row 4). To improve 'dual-track' development, product teams should adopt practices like: user interviews, market research, customer satisfaction metrics, design sprints, or prototyping.

6. Conclusions

Customer expectations for seamless products, which anticipate their needs and desires, will only increase as technology-powered companies continue to set the bar higher and higher. In this competitive market, the advantage will go to companies whose Product Management is based on innovation, customer-centricity, and Agility at all levels. However, it is still difficult to prescribe a concrete methodology that needs to be applied by the product teams to succeed. Product Management does not fit any of the common areas the organizations are already familiar with. As Moore (2019) said, "Product management is an interdisciplinary role that reaches across teams to plan, design, and continuously bring better products to the market."

This research identifies some common areas that need improvement from a Product Management perspective, even though these may differ from one context to another:

- Empowerment of product teams to make decisions
- Experimentation and a data-driven mindset at all organizational levels
- Collaborative continuous product discovery and delivery between all product roles: Product Manager, UX designer and product engineers.

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Comparative Analysis of Different Methods to Measure Welfare Beyond GDP for Romania

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Abstract

GPD is a benchmark for measuring macroeconomic activity since 1930s (Kuznets, 1930) and policy makers use it around the world. The main benefit of using GDP is that it ensures comparability in time and space having a good and transparent definition framework, but the pain point is that is not reflecting the changes that have taken place over time. For instance, although developed countries are richer, they are facing unprecedented social and ideological situations, which is why the result of GDP has begun to be questioned. The idea that GDP was created to facilitate fiscal policies, and not the real measurement of well-being, has begun to take shape since. Beyond GDP (Stiglitz et al., 2010; OECD, 2011) initiative taken at European level is the proof that researchers are analysing the development of new indicators to reflect social and environmental aspects as well.

The COVID-19 pandemic came as a tsunami to prove that the most important decision for a society is to put at the heart basic human needs when public policies are created. Not just economic growth reflects the progress, but the social implications, environment and happiness of the people.

The aim of this research is to present alternative indicators of well-being measurement and to compare them with GDP.

Keywords: Beyond GDP, Well-being, Sustainability, Indicators, Social sciences.

JEL Classification: I31, I32, O11, O49, Q56.

1. Introduction

GDP is an exhaustive indicator that shows the total market monetary value of all services and goods produced within a country's territory during a certain period. It can be considered a proxy for measurable well-being. The indicator is widely used and lies on top of the System of National Accounts and its definition framework

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is rigorously standardized, being used for international comparison (Wesselink et al., 2007).

Starting from the fact that a rich economy also involves a high value for GDP, recent weak productivity growth explores measurement issues (Dynan, Sheiner, 2018). The GDP receives many critiques and the main limitations of GDP such as environment quality, individual well-being, black market, health and life expectancy or political freedom were analysed by economists such as Nobel Prize laureates (Freimann, 2016; Giannetti et al., 2014).

In Europe, by analysing the evolution of GDP/capita, we notice that there is a decrease in recent years in countries such as Romania, Switzerland, UK, Finland, Sweden, Austria, and Germany. At the other end of the spectrum, with slight increases in 2019 compared to 2018, are Bulgaria, Estonia, and Lithuania.

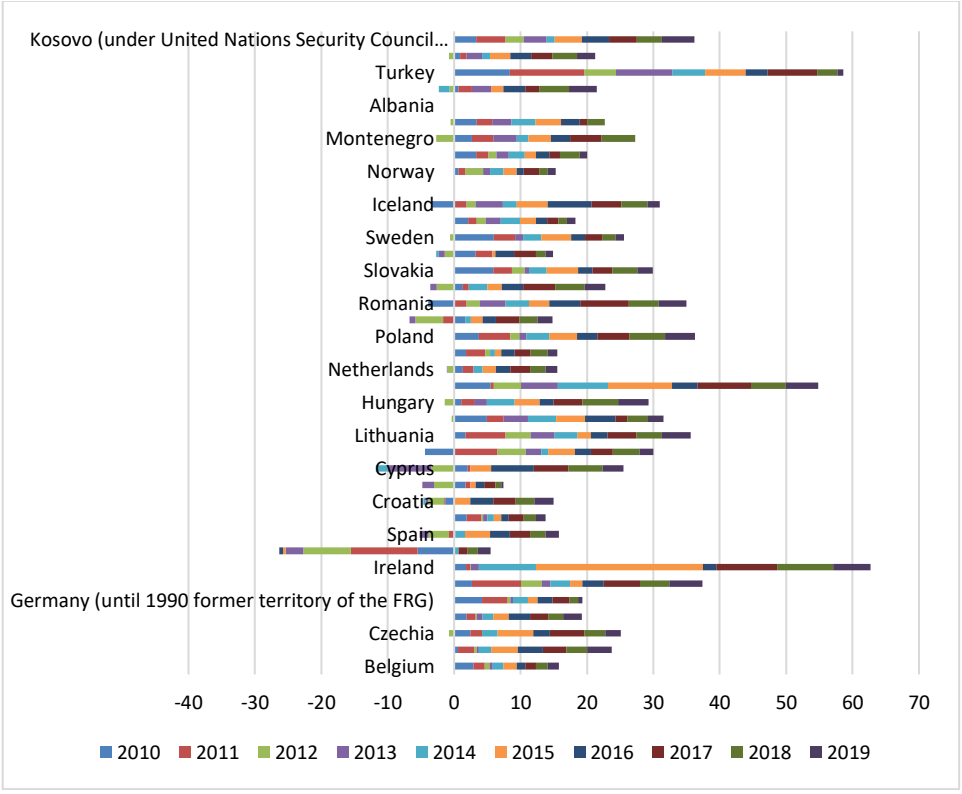


Figure 1. Evolution of Gross Domestic Product in European Union countries over the last 10 years

Source: Eurostat.

Are those figures correctly reflecting welfare and progress? In this paper, the focus is to present existing frameworks for measuring progress by capturing also other dimensions like social and environmental health. Based on existing

enriched indicators they are analysed in a comparative way with GDP and results are discussed.

2. Problem Statement

Part of GDP limitations is well known and part is also being discovered. The best way to mitigate them is to build an inclusive welfare framework. Research on this type of framework is extensive including approaches such as sustainable development (United Nations, 1987), capabilities (Arrow et al., 2004) and happiness (Layard, 2005). The common point for all those approaches is extending the financial overview provided by GDP with social and environmental indicators.

Talberth and Bohara (2006) develop models of GDP increase by checking the gaps between traditional and enhanced green GDP.

Van den Bergh (2007) points out to the fact that currently GDP is focused more on current economic activity and not on long term factors like social and environmental assets.

Di Tella and MacCulloch (2008) find that happiness is correlated with the level of income.

Michaelson et al. (2009) describe that the progress for a modern society is reflected in well-being, higher living standards and not just economic development and for Dasgupta (2009) GDP is the most common used macro-indicator to quantify the value of production.

Stiglitz et al. (2010) reinforce the fact that GDP is not completely wrong, but it is wrongly used because it measures only partial economic activity.

In 2009, the European Commission released the policy paper "GDP and beyond: measuring progress in a changing world"[3], with a focus on five key actions: completing GDP and extending National Accounts with environmental and social indicators, accurate reporting regarding inequalities, real-time data and developing a scoreboard for sustainable development.

Maxton (2011) challenges the concept of progress pointing out that the economic progress is not a real one as it is expressed more using quantitative indicators whereas their basis cannot be fully measured because there is also a subjective component.

Beyond GDP, there is a belief in specialized analysis that governments through their authority must provide the preconditions for people to be happy (Bormans., 2019).

Snower and Miranda (2020) find that decoupling financial prosperity from social welfare and environmental health is the main cause of the renascence of nationalism accompanied by politicians' attacks on globalization and multilateralism. The Recoupling Dashboard is a new model for measuring people's well-being, which goes beyond a country's GDP. The purpose of the model is to solve what its researchers claim is a misunderstanding of the factors that influence the well-being of people as a whole.

3 EU Commission (2009), GDP and beyond: measuring progress in a changing world, COM (2009) 433 (2009).

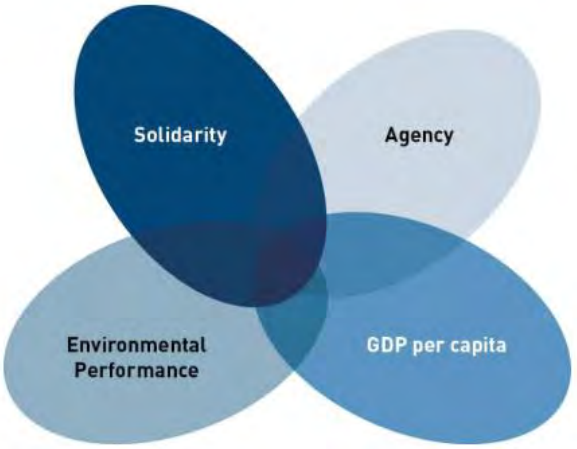


Figure 2. SAGE model dimensions
Source: Miranda K., Dennis Snower, Recoupling Economic and Social Prosperity.

3. Aims of the Research

Now, the question is: how can other macro-indicators cover GDP limitation and how big are the differences between those indicators? For researchers, in order to be able to develop new frameworks for welfare measurement it is essential to understand how the existing ones are defined. The analysis focused on the following points:

1. What is progress or welfare?
2. What indicators should be added in the framework to capture progress? Or what are the dimensions included in the indicator composition?
3. Are the indicators reflecting objective or subjective aspects of welfare?

How was the evolution for Romania in last decade regarding GDP comparing with other indicators that also reflect other dimensions than the financial one?

4. Research Methods

Based on INSSE data, in Romania the pandemic of 2020 brought a decrease in GDP by 3.9% compared to 2019. According to the seasonally adjusted series, in the last quarter of 2020 compared to the same quarter of 2019, GDP decreased by 1.7%. According to seasonal adjustments, in the third quarter of 2019, compared to the previous quarter, GDP increased by 0.6%. Compared to the same quarter of 2018, GDP increased by 3.2%. As a general conclusion analysing the GDP values, starting with 2017 there were slight decreases in values, the most visible being in 2020, most likely due to the global health crisis.

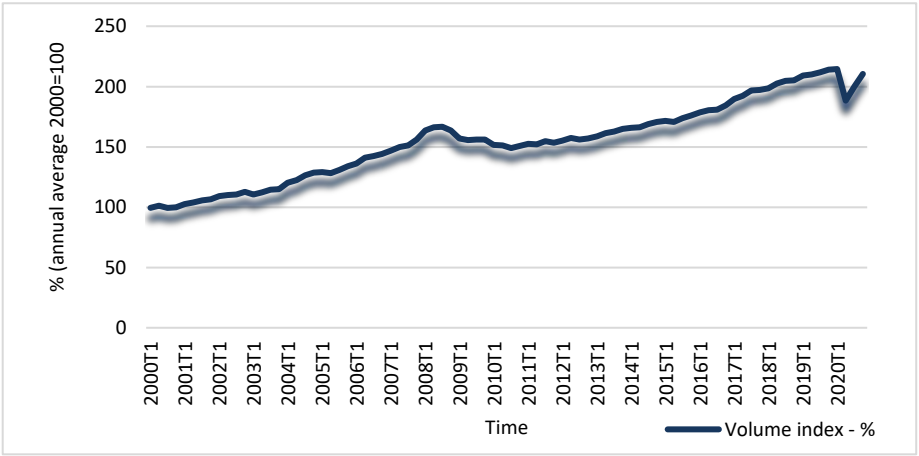


Figure 3. GDP evolution in Romania 2000-2020
Source: INSSE.

In practice, GDP per capita is one of the most widely used measures of well-being in a country. Comparisons between states with different currencies are made using an exchange rate calculated according to the prices of consumer baskets in the two countries (exchange rate at purchasing power parity), thus avoiding differences in comparison, caused by exchange rate fluctuations.

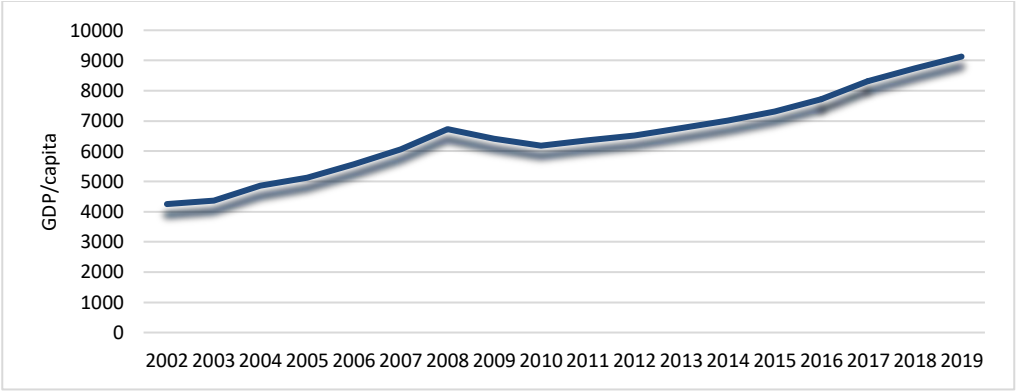


Figure 4. GDP/capita evolution in Romania 2002-2019
Source: INSSE.

In terms of evolution, based on the data for Romania, there has been a positive trend towards growth. Comparing with other indicators that are part of the Sustainable development framework, for instance, with the share of people with good and very good perceived health by sex, we have notice that the trend is as well positive, and compared with the average of European Union countries, Romania's growth is slightly better.

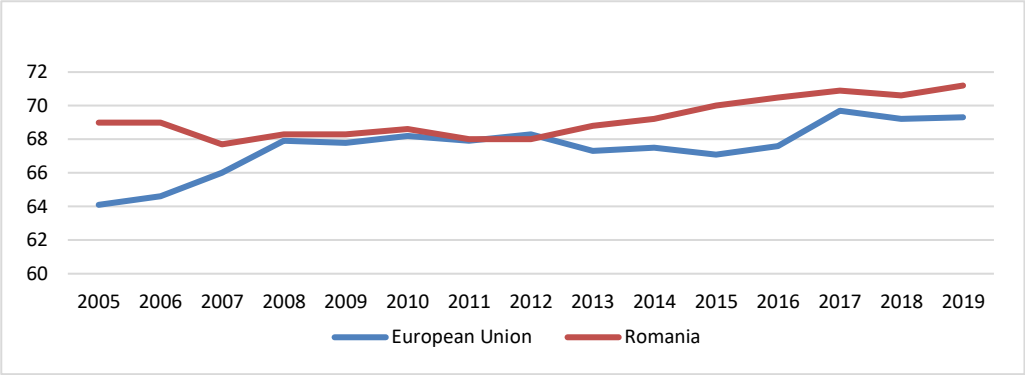


Figure 5. Share of people with good or very good perceived health by sex (%)
Source: Eurostat.

In 2016, according to the Happy Planet Index, Romania scored 28.8 and ranked 55th in the profiled countries.

$$\boldsymbol{HPI} = \frac{Well\text{-}being \times Life\ expectancy \times Inequality}{Ecological\ footprint}, \quad (1)$$

where:

Well-being: represents the satisfaction level about life overall at individual level.

Life expectancy: is the average number of years an individual is expected to live.

Inequality: shows the percentage for the discrepancies between individuals within a specific country in terms of well-being and life expectancy.

Ecological footprint: represents the impact for each individual on the environment, measured in global hectares (gha)/ person.

The component dimensions taken into account for the analysis are (see equation 1): life expectancy (74.3), wellbeing (5.2/10), ecological footprint (2.7 gha/person) and inequality (19%). Over the time, all the components for this indicator have gone through significant improvement. At European level, top positions are occupied by Switzerland (7.8), Norway (7.7) and Iceland (7.6), all of them with HPI values higher than the global average for this indicator, which is 5.4.

Table 1. Happy Planet Index Evolution for Romania

HPI			Life Expectancy			Life Satisfaction			Ecological Footprint		
1990	**2000**	**2005**	**1990**	**2000**	**2005**	**1990**	**2000**	**2005**	**1990**	**2000**	**2005**
36.0	42.9	43.9	69.9	71.3	71.9	6.1	5.3	5.9	4.2	2.3	2.9

Source: http://happyplanetindex.org/.

Observing that the ecological footprint had a significant decrease, there is another indicator that might explain the impact on the environment.

Environmental Performance Index offers an overview about sustainability. Methodologically, this indicator uses 32 performance indicators from more than 10 categories of issues, covering 180 countries, for which is calculated. For the

Environmental Performance Index, Romania ranked 32 with a score of 64.7 and a 10-year change of 8.1.

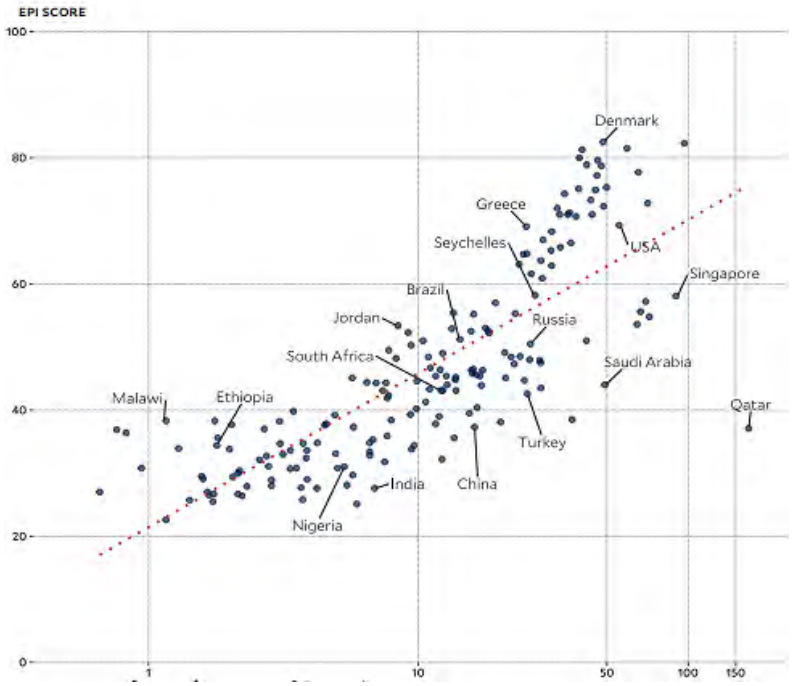


Figure 6. GDP/capita 2020
Source: https://epi.yale.edu/.

There is a positive correlation between GDP/capita and Environmental Performance Index and our country, just like the majority of European countries, is positioned on top. In Europe the first place is occupied by Denmark.

5. Findings

To conclude, GDP is no longer a relevant indicator in terms of capturing the high-level aspect of progress. Definition for progress is different for each country, including particularities as religion, values, quality of life. GDP should be enriched with social and environment indicators in order to ensure the sustainable development.

Also, in order to be able to properly answer to current challenges like COVID-19 pandemic, it is important to have flexible indicators and to easily measure the impact. Also, those challenges can be seen as opportunities to develop new indicators by promoting actions to protect the environment, digitalization and consolidate system weaknesses.

In our experiment, the results for Romania are good, and by comparing them with the results of other countries we can notice a positive trend towards sustainability.

6. Conclusions

Well-being or progress can be expressed with statistical indicators so we can see the evolution over time. This evolution is easily observed with objective or quantitative statistical indicators. Actual calculation of GDP has multiple critics because this widely used indicator does not capture black market activities or life elements that matter, such as well-being and sustainable development. In this context, multiple research projects were developed and it is on the public agenda of politicians from multiple countries, to develop additional indicators that might better capture progress than GDP. Methodologies for computing them and frameworks to ensure comparability over different countries and time are under development and enrichment.

In this paper, different indicators were analysed in comparison to GDP. For instance, Happy Planet Index captures better than GDP the personal well-being of individuals, whereas the Environmental Performance Index shows the health of the environment in terms of sustainable development. At European level, Romania is well positioned regarding GDP, and has an ascendant trend in terms of progress from economic, social and environmental angle.

Taking into account the results obtained, it might be useful to extend the analysis by including a subjective approach for well-being. This research should have a totally different methodology, and represents a limitation of the paper.

As a future research, one topic might be to evaluate the implications of COVID-19 in the GDP calculation and to see which industry was most impacted. Based on the complexity of the macroeconomic systems it will be interesting to extend both the analysis method with multidimensional statistical analysis techniques with multiple indicators from different social and environment areas, but also to include empirical research about people's happiness. The main goal would be to compare the analysis results based on different indicators, both subjective and objective.

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Appendix

Annex 1. Happy Planet Index – Well-being component

Rank	HPI Well-being	
1	Switzerland	7.8
2	Norway	7.7
3	Iceland	7.6
4	Sweden	7.6
5	Netherlands	7.5
6	Denmark	7.5
7	Finland	7.4
	Global average	5.4
138	Syria	3.2
139	Benin	3.2
140	Togo	2.9

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The Evolution of Inflation in the Context of the COVID-19 Pandemic

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DOI: 10.2478/9788366675704-043

Abstract

The starting point in the design of this article was the analysis of the evolution of inflation in Romania in the context of the existence and development of the COVID-19 pandemic. Inflation is considered in the current context as the most harmful phenomenon in contemporary economies. The concept of inflation has been strongly developed over time by various economists and specialists, who tried to outline a definition as concrete as possible, to explain the causes that determine this phenomenon and the impact it has on both population and economic agents. The topicality of the article and the motivation for choosing this topic is the analysis of the impact that the COVID-19 pandemic had on the main macroeconomic indicators, more precisely on inflation. At the same time, in this context, the aim of this paper was to reach and highlight the most important issues related to inflation, which were found in specialized economic, monetary and social studies. The effects of the inflationary phenomenon on the economic system are diverse and can have a positive as well as a negative impact depending on the context. The negative effects that can be identified from an economic point of view are the increase in the opportunity cost in terms of holding financial resources, the uncertainty of the level of future inflation that can lead to the discouragement of investments, but also savings. As for the positive effects, they can be represented by encouraging investment in various non-monetary capital projects, as well as ensuring that central banks have the opportunity to adjust real interest rates according to the inflation rate.

Keywords: inflation, real interest rates, COVID-19, savings, investments.

JEL Classification: E31, P24, P44, B22.

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1. Introduction

Inflation is considered one of the main instruments that ensure the proper functioning of market economies. At the same time, inflation is a complex phenomenon, because over the years it has been highlighted by various forms and causes, and with its emergence and expansion, that it has significant consequences for the entire economic system as a whole. Also, this growth is directly influenced by various categories of economic goods that are in circulation in the market, as they are in line with the services of the factors of production. The need to develop this concept was influenced by the fact that inflation represents, through its complexity, an economic and social phenomenon, which has various aspects. Specifically, there is no economic mechanism that inflation does not affect. Taking into account the aspects mentioned above, one can state the idea that over the years various economists and specialists in the field have developed statements and views on this phenomenon, some bearing in certain circumstances the imprint of ambiguity. Etymologically, the origin of the term comes from the Latin word "inflatio" (inflation), which is mainly swelling. But the side that is important for this research is the disease of an economic system.

The motivation for choosing this topic is the need to analyse the impact and evolution that the inflationary phenomenon has had in the context of the COVID-19 pandemic. The need to design a coherent and consistent price system arose and developed when inflation was considered a globalized phenomenon, which has devastating effects on the global economic system. Also, the central subject of this paper is a controversial one and topical due to its magnitude and evolution worldwide.

Regarding the structure of the article, mainly the concepts belonging to the economic doctrines related to the inflationary phenomenon will be presented, and later the research methodology and, last but not least, it proposes a series of solutions and recommendations in order to achieve national macroeconomic sustainability.

2. Literature Review

Inflation is the macroeconomic imbalance encountered at the level of any state at the global level, which has a monetary nature and occurs as the decrease of the purchasing power, simultaneously with the strong increase of prices, which has a negative effect on all. Regarding the age of inflation, it is considered to be as old as market economies, according to Samuelson and Nordhaus (2009).

Milton Friedman (1958), economist and Nobel laureate in economics, believed that "Inflation is a monetary phenomenon anytime, anywhere." Currently, the method of calculating inflation includes the use of price indices, such as the GDP deflator and CPI. The deflator is the total price of goods that are found in the gross domestic product, while the CPI analyses the price of a basket of goods that are related to the price of that basket according to a reference year.

Another well-known author in economics, Paul Samuelson, who received the John Bates Clark Medal in 1947 and the Nobel Prize in Economics in 1970, brings

to the fore in his book "Economics", together with William Nordhaus, their conception of inflation. The inflationary phenomenon occurs when there is an increase in the general level of prices in the economy. Their opinion is based on the idea that "Inflation is as old as market economies", so that over time it has affected each state in different proportions, manifested itself in various forms and led to new changes. Also, the two great economists claim that the impact of the inflationary phenomenon has been very well highlighted through the concept of John Maynard Keynes: all the permanent relations between debtors and creditors, which form the final fundamental of capitalism, become so disordered that they are almost meaningless. Regarding Keynesian thinking, the inflationary process is viewed through the prism of the evolution of macroeconomic indicators, as well as real macroeconomic flows, and the upward trend in market prices is associated with the use of labour. A defining idea in terms of the inflation rate is that it has the ability to persist for quite some time and at the same rate, especially in modern economies.

Also, the authors Lipsey and Chrystal (1999) consider that the inflationary phenomenon is harmful and dangerous, leaving its deep imprints on the global economies over time. In this context, inflation can be seen as a harmful process if not managed properly, from several points of view, including the difficulty of managing and eliminating the negative effects in a timely manner.

Samuelson claims that inflation appears like a disease, for several reasons, as it does not have a single source. Part of the inflation is due to demand and the other part is due to supply. Because it can be said that this phenomenon is so complex because it is influenced by several factors, it takes place internally, and with its occurrence, it leads to quite high costs. An example he set out in his book with Nordhaus was the resemblance between a dog and the inflationary process. Inflation is described in correlation with an old and lazy dog. If the dog is not "shocked" either by hitting or by a cat, it will still remain in its original place. But if it has been disturbed, the dog will drive away from the cat and will remain in that place until the next shock. Through this idea, the authors want to highlight the fact that inflation often occurs due to an impulse, Samuelson and Nordhaus (2009).

3. Research Questions/Aims of the Research

According to the perspectives of various economists, inflation is a complex, broad and multidimensional process that has represented over the years and will continue to be an integral part of global macroeconomic policies. Inflation and high unemployment are two of the problems developing countries are facing, including Romania. Therefore, the starting point in the design of this article was the analysis of the evolution of inflation in Romania in the context of the existence and development of the COVID-19 pandemic.

Through the research results, the hypotheses of the paper can be either confirmed or refuted, they are considered anticipations of the process, which aims at a direct connection with the central subject of the thesis. A fundamental aspect to be stated is represented by the fact that the hypotheses formulated resulted from the main objective, but also from the general issue of the research paper. The hypotheses in

this article focus on the impact that inflation has had in the context of the existence and spread of the COVID-19 pandemic. Therefore, the hypotheses of the paper are the following:

Table 1. Research questions

Hypotheses	Statements
1.How did the inflationary phenomenon evolve during the analysed period, 2000-2020?	Inflation in Romania fluctuated considerably, but mostly recorded negative values, as a result of the policies oriented towards the economic growth of the European Union.
2. What are the effects on inflation in both the 2008-2009 economic crisis and the 2020 health crisis?	Inflation has risen amid the onset of these crises.
3. How will inflation evolve after overcoming the COVID-19 pandemic?	The inflation rate will decrease after overcoming the health crisis as a result of the economic policies applied at the national level.

Source: Own processing of the authors.

4. Research Methods

In this paper, we used a mixed research methodology, including both a descriptive analysis used to describe the stage of knowledge, and a dynamic macroeconomic analysis used to depict the evolution of inflation in the period 2000-2020. Also, to carry out this work we used the database taken from the website of the National Institute of Statistics (INS) on the evolution of inflation, for the period analysed, 2000-2020.

At the same time, in order to identify the future evolution of inflation, we also made a forecast in excel program for the period 2021-2026. To this purpose, we used two series of data, namely a series on the period and a series of values corresponding to each interval analysed. All these series will contribute to the estimation of future inflation data, and to make this forecast we selected both data series, and the "data" tab in Excel, in the forecast group, we selected "forecast sheet". Later, in the “create forecast sheet” box in Excel, we selected the line diagram for the visual representation of the forecast, which can be seen in section 5 of this paper, more precisely in figure 2. To make the forecast by the year 2026 in the box end forecast we selected the year 2026, and then we used the create button.

5. Evolution and Inflation Forecast in Romania

Price stability is a nominal convergence criterion that must be met by countries wishing to join the Eurozone, as is the situation in Romania. This criterion assumes that the inflation rate during a year exceeds more than 1.5 pp. The inflation rate of the first three European countries recorded the best results on inflation. As for the responsible authority that can reduce the effects of inflation, this is the National Bank of Romania through the monetary policy instruments and strategies at its disposal.

Regarding the causes of inflation at the beginning of the analysed period in the post-communist period, they consist in the depreciation of the national currency, the increase of the wage level uncorrelated with labour productivity, the evolution of taxation and public utility tariffs provided under monopoly conditions. In addition to these causes, the higher level of inflation in the Romanian economy is also represented by the delay in the reform of the banking and the real sector, compared to other states.

5.1. Evolution of the Inflation Rate in the Period 2000-2020

According to the adjacent chart, we can observe the downward trend of the inflation rate in the analysed period, but the registered level is far from the one found in the concept of price stability. Through the monetary policy in the first years of the transition, restrictive measures were applied, which would allow the expansion of credit and money supply in the Romanian economy.

Thus, starting with 2000, a disinflation process started, which was created on the background of the resumption of the Romanian economy growth, the efficiency of coordination between macroeconomic policies, the decrease of economic uncertainty by economic agents, the imposition of policies aimed at structural adjustment and positive consolidation of macroeconomic developments. Also, a strong impact that led to lower inflation was given by the high control of liquidity, the limitation of the budget deficit, the appreciation of the national currency and the increase of the interest rate. The onset of the international financial crisis led to rising inflation, creating uncertainty about the global economy and its influence on the national economy through trade. At the same time, this year's inflationary pressures were generated by the discrepancy between labour productivity and the number of employees. The entry into recession since 2009 led to a decrease in the inflation rate due to the exchange rate, the reduction of wages and the demand deficit. After this year, there were various fluctuations in the inflation rate depending on the measures implemented by the authorities, which mainly aimed at improving the economic situation and reducing risks and uncertainty about the future evolution of the economy. The years 2015-2016 mark the registration of a negative inflation rate for the first time since the transition to the market economy due to the maintenance of low inflation expectations, the reduced VAT rate of 9% for food, soft drinks and food services, publications, the reduction of RCA policies from 2016, the reduction of the price of tobacco products and the VAT rate from 24% to 20%.

Subsequently, in the period 2017-2018, the inflation rate increased due to the improvement of the economic situation, the depreciation of the national currency and the increase of food and fuel prices, while in 2019 the inflation rate decreased due to the decrease of the prices of some volatile products and the price of natural gas for consumers from July 2019. This year's high level of inflation was also caused by rising public sector wages, rising prices for tobacco products and the negative effects of the swine fever virus, which led to the slaughter of about 500,000 pigs, which further led to a significant increase in the price of pork that generated pressures on CPI inflation. The effects of the pandemic triggered in 2020 on inflation were

significant, in the sense that they helped reduce this indicator by lowering energy prices and affecting the hotel and transport sector, reflecting the modest demand associated with the health crisis. A significant impact was generated by the sharp fall in oil prices amid a sharp drop in demand due to restrictions on travel and work from home. However, the risk of the negative evolution of the outlook for inflation and monetary policy remains persistent in the context of the significant depreciation of the national currency and the loss of investor confidence in Romania's ability to manage the health crisis generated by COVID-19.

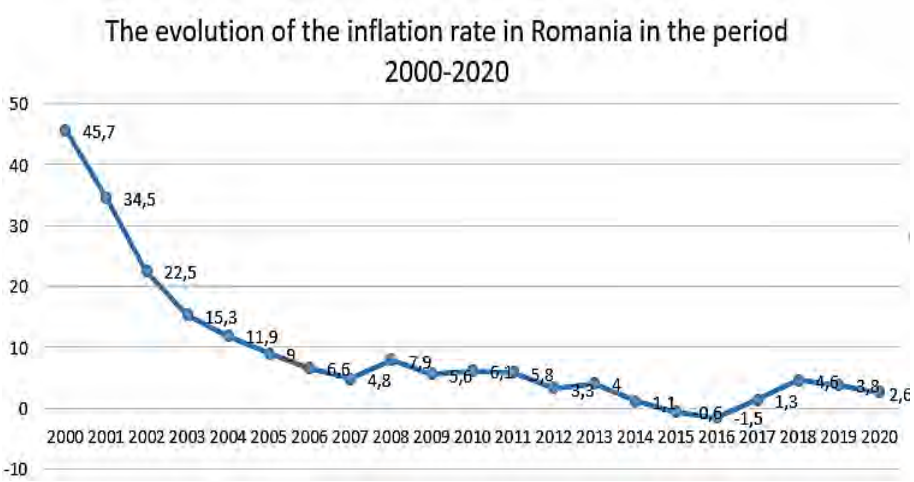


Figure 1. The evolution of the inflation rate in Romania in the period 2000-2020

Source: Own processing based on data taken from the INS, https://insse.ro/cms/ro/content/ipc%E2%80%93serie-de-date-anuala.

5.2. Inflation Rate Forecast for 2021-2026

Forecasting is known in the economic literature as a technique by which future trends are projected using conclusive statistics. Also, the forecast is a very complex and important process, because it offers the possibility to obtain some probabilities, which, in the current context, would represent the best course of action.

In this article, a forecast was made using Excel, as it offers a wide range of tools in this area while having a high capacity to store calculations and view data. The evolution of the inflationary phenomenon both at the level of Romania and at the level of the member states of the European Union is an intensely debated issue, and has a significant impact on the decision-making process.

In order to obtain this prediction of the future evolution of the inflation rate, the quantitative method Exponential Smoothing was used, abbreviated ETS, which is based on an algorithm for identifying, but also for detecting seasonal patterns and confidence intervals.

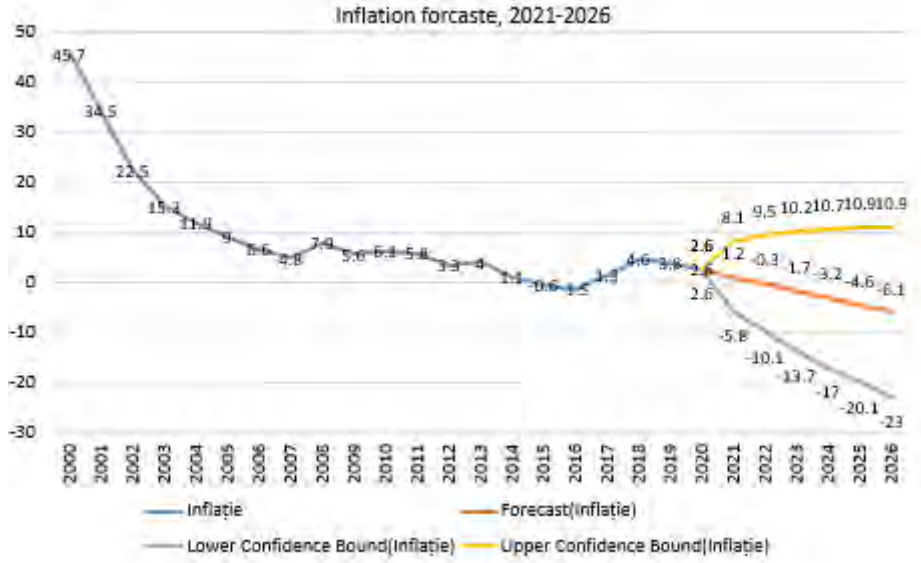


Figure 2. Forecast the inflation rate in Romania in the period 2021-2026
Source: Own processing based on data taken from the INS, websitehttps://insse.ro/cms/ro/content/ipc%E2%80%93serie-de-date-anuala.

According to the graph resulting from the forecast, the average level of the inflation rate in the following years will be 2021- 1.15%, 2022 -0.28%, 2023 -1.72 &, 2024 -3.16%, 2025 -4.60. It can be seen that during the analysed period, the level of the indicator was around the average value of -2.18%. With 95% confidence, the expected result will be between upper and lower 10.90% and -23%. Taking into account the forecasts, we can state the idea that the level of inflation in Romania will be within an appropriate and normal range in terms of price stability, according to macroeconomic policies developed by the National Bank of Romania.

In the context of the existence and development of the COVID-19 pandemic, more precisely in 2020, the conduct of monetary policy continued to be prudent from the perspective of economic activity following the severe contraction due to the pandemic shock, in order to bring and strengthen the annual inflation rate in the medium term, in line with the 2.5% inflation target, in the context of protecting financial stability. The evolution of the inflation rate in the coming years is influenced by a multitude of interconnected sources of risks, especially uncertainties that are mainly associated with developments in public health, which also gained more prominence with the onset of the second pandemic wave in the fall of the year 2020. In this context, until the normalization of the situation at the level of the medical system, in relation to the perspectives of evolution of the economic activity, it is expected that the downward risks will continue indisputably.

6. Conclusions

One of the fundamental objectives of economic policy in the current context is to combat or limit the inflation rate. The most important aspects of this phenomenon are the definition, measurement and establishment of the necessary means to reduce the spread of inflation globally. In accordance with the present research, it can be stated the idea according to which the analysis of the evolution of the inflationary phenomenon represents a primordial action at the level of a state's economy. Therefore, specialists in this field need to know in-depth the process and foresee the main factors that could lead to an increase in the inflation rate, as well as how to manage it in order to achieve medium and long-term macroeconomic stability.

As a result of the statistical data specified by the National Institute of Statistics, the inflation rate in Romania is in a continuous decrease, and the trend will be maintained in the coming years, which is highlighted through economic forecast. In order to improve the overall economic context, it is important to adopt economic measures that adapt much more quickly to the magnitude of deficits.

Considering the complexity of the elaboration, but also of the use of a mixed methodology, qualitative and quantitative, respectively, inevitably there are some limits, while it is also difficult to overcome them in this research. The following will briefly present a series of limitations that have been encountered both methodologically and empirically, such as the existence of a small number of researches on the chosen topic, the limitation of selection only of scientific journals with a major impact factor, the relatively small amount of data on the annual growth of the gross domestic product.

In line with the previously identified limitations, as well as with the dynamics of international research on the use of research methods in economic studies, a number of future directions will be proposed by this paper.

Future research on the evolution of the inflation rate is very useful to provide a perspective on the macroeconomic stability of the Romanian economy, which has a strong impact among investors because if they consider the existence of high risks in Romania, they will unquestionably focus on other markets that allow them to evolve accordingly. This analysis is very relevant considering the very unpredictable economic environment in Romania. An eloquent example can be represented by the fiscal measures adopted by the authorities in recent years, which led to an increase in GDP to around 7.3% in 2017 compared to 4.7% in 2016, which determined the increase in inflationary pressure. The latter reached the level of 4.6% in 2018. However, the macroeconomic developments that have been recorded in recent years have led to the reduction of GDP, which reached the level of 4.1% in 2019 and inflationary pressures have decreased to the value of 2.6% in 2020, according to data provided by the World Bank.

In conclusion, also from the perspective of research development, we need to use other strategies aimed at mixed research to evaluate the use of research methods in the economic field.

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Bertrand Competition Under Incomplete Information

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Abstract

The complexity of economic games has determined the application of models from game theory in the process of making optimal price decisions. Thus, price competition is perceived as a game in which microeconomic entities have different market powers and market performance depending on the informational advantage and implicitly on the opportunities generated by its capitalization. The various models developed having as reference the classical model Bertrand (1883) provide useful insights into the behaviour of firms in price competition and the operation of firms in market. Since the informational structure is one of the most important dimensions of the decision-making process, Bertrand-type competition analysis through Bayesian games under incomplete information is gaining attention in current research. The peculiarity of these games refers to the association of subjective probabilities with the parameters of the game, each player aiming to extract the informational rent of the opponents. So, the results of Bayesian games are influenced by the private information held by at least one player, the information gap between players making strategic selection difficult. This article aims to provide an overview of the Bertrand competition in incomplete information (unknown demand and costs). Taking into account the scenario in which close, but not perfect substitutes exist for the differentiated product with hypothetical data, we determine the equilibrium price and the equilibrium profit levels followed by a simulation to outline the variation of gains according to the subjective distributions on the choice of strategies by opponents.

Keywords: Bertrand model, Bayesian game, incomplete information, game theory, industrial organization.

JEL Classification: C72, D43, L13.

1. Introduction

The informational structure that subsists in an economic game whose objective is the choice of the price estimation strategy acquires specific connotations when

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not only the theoretical contexts are analysed, but also the particular ones. Depending on the preference over risk, the distorted perception of a circumstance by decision makers is present especially in the case of probabilities that register values close to the extremes. The continuous concern of firms for the economic value created can explain a wide range of behavioural anomalies. Both the informational advantage and the performance of microeconomic entities impact the informational structure regarding the behavioural side of the decision factor. The information asymmetry implies the existence of small deviations from the optimal behaviour of firms that, most of the times, have significant economic implications, being considered the source of the power imbalance during economic transactions and economic inefficiency respectively.

Game theory is an important branch of microeconomics that provides a modelling tool for decision-making in competitive situations. These situations are influenced by several rational factors, which act independently in the choice of strategic decisions, but they are dependent on the results comprising the set of all decisions and are ultimately outlining a complex set of interdependencies. This situation is formalized in the mathematical concept of the game.

As the price estimation strategy shows how economic agents interact in different types of markets while allocating their limited resources, the optimal decision can be defined only within the limits of a mathematical model. Given the wide applicability of the game theory in shaping price strategies, the idea of playing in incomplete information best outlines the economic reality. Economic agents have certain assumptions about the payoff function of their opponents. Certain probabilities are associated to these assumptions in order to highlight the behaviour of the players, the reason behind their decisions, the strategic landmarks, and the untapped opportunities that compensate the constraints of the game.

This paper is organised as follows. The first part introduces a review of the literature on the Bertrand model, including the most important references to the research objectives. We continue with the description of the methodology and the variable used in the model, followed by a simulation. The last part is dedicated to the interpretation of the results and drawing conclusions regarding the Bertrand-type competition in incomplete information along with identifying future research directions.

2. Problem Statement

The models applied for the description of the Bertrand-type competition are based on specific concepts and results of games with informational asymmetry. These models can be placed into the Bayesian universe mostly by considering the complexity of economic games, the formation of beliefs by players regarding the private information held by opponents and the adjustment of beliefs during the development of economic relations.

Harsanyi (1967) defined Bayesian games assuming that uncertainty in games can be modelled equivalently as uncertainty related to the payoff functions. In the Bayesian games formulated by Harsanyi, the different information of the players is

described by a collection of random variables, called types of players, representing the private information of a player. The actual value of each player's type has been omitted from the model. However, a precise probabilistic description of what each player type would think about the other player's types is included. This approach provides a general framework for the entire economic model applied.

Singh and Vives (1984) identified three important aspects of oligopolistic competition, which have been subsequently analysed in various studies. Assuming that the goods are substitutable, they found that the players' profits are significantly higher in the case of Cournot-type competition than in the case of Bertrand-type competition, while consumer and social welfare are higher in the case of price competition. Firms that choose Cournot-type competition represent a dominant strategy equilibrium in the two-stage game in which firms choose between the two types of competition in the first stage and then compete accordingly in the second stage.

Häckner (2000) emphasized the efficiency of the two competition models considering the asymmetric demand as the difference in quality between goods. Cournot-type competition always produces higher prices and lower welfare compared to Bertrand-type competition. Profits are higher in Cournot-type competition for substitutable good's while Bertrand-type competition is more profitable for complementary goods. Finally, it is a dominant strategy for firms to choose quantity as a strategic variable when goods are substitutable, and prices when they are complementary.

Yue et al. (2006) presented a model of profit maximization in order to obtain optimal strategies in conditions of information asymmetry. The model follows a Bertrand-type game with players having private information. Buyers have a choice of two complementary goods offered by two players in the form of a mix package. The quantities offered by each player depend on both their own pricing strategy and that of the opponent. The authors compared the results obtained in conditions of asymmetric information, information sharing and strategic alliance, and they concluded that the exchange of information can create both advantages and disadvantages for players. The main advantage of information sharing is an increase in the accuracy of the planning process. In the case of the strategic alliance and information exchange, players would set prices lower than the optimal prices. Thus, players behave as a single microeconomic entity, sharing their profit equally.

Abbink and Brandts (2008) analysed the pricing process under the assumption of increasing marginal costs. They pointed out that, in the long run, the model involves prices converging towards the Walrasian result. In the case of the Bertrand model with strictly convex costs, firms can record a profit despite decreasing returns to scale. These results were previously obtained by Bulow et al. (1985) and Dastidar (1995), and subsequently by Argenton and Müller (2012).

Ferreira and Pinto (2011) found that the results of the Bertrand model are significantly influenced by the presence of differentiated goods or by the asymmetry of costs. In their paper, they analysed the Bertrand-type competition with differentiated goods, assuming that each player has two different technologies

at disposal and he chooses one of them based on a certain distribution of probability. Based on these hypotheses, they determined the Bayesian-Bertrand Nash equilibrium. They also showed that there is a direct relationship between the expected price of each good and the expected costs, as the result of the effect of the expected cost of the rival dominated by the effect of its own expected cost.

Fatas et al. (2014) considered the Bertrand model in which firms take into account a discrete increment to adjust their prices. Through an empirical analysis, they referred to the model of limited rationality, a concept defined by Simon (1955). In the case of a sequential game, this model contributes to the adjustment of the firms' behaviour only in the first stages of the game. These results are in line with those obtained by Dufwenberg and Gneezy (2000).

Blavatskyy (2018) extended the classic Bertrand model by making various assumptions regarding the behaviour of consumers and firms. The initial set of hypotheses includes the following: the decision on whether to buy a good from a firm belongs to the consumer, a firm cannot increase its sales by increasing the price, and the relative market shares of firms do not change when all firms modify the value of the prices by the same amount or the same percentage in the set of hypotheses considered. According to these assumptions, the equilibrium price may be higher than the marginal cost of these firms. However, an equilibrium price does not necessarily converge to marginal cost when there are infinite firms in the market. The market price is lower when consumers are more sensitive to price changes and it converges to the marginal cost of firms as in the classic model Bertrand (1883).

Rusescu and Roman (2020) performed a comparison between Cournot, Bertrand and Stackelberg competition for games in complete information, with simultaneous and sequential decisions. They determine the optimal solutions for the case of products differentiation.

3. Methodology and Model

Since the competitors' response to the decisions given by the price evolution is the key element of the firms' analysis, it is important to know the factors contributing to pricing strategy. Degree of asymmetric information, quality of information, market conditions are among the factors that contribute to estimating a sustainable pricing strategy. Bayesian games allow these factors to be seen as a state of nature, respectively as random variables. The classical Bertrand model involves two companies that chose the prices for two substitutable goods.

In our case, we consider the Bayesian game that involves specifying four elements:

i. Action space: The prices set by the two players: $P_i = [0, \infty),\ i = 1, 2.$
ii. Types of players: These are given by the costs they record. Player 1 is of one type $T_1 = \{c\}$, and player 2 of two types: with low or high marginal cost $T_2 = \{c_M, c_m\}$.
iii. Probability space: the set of probabilities with which player 1 makes assumptions about the opponent's costs. It assumes with the probability θ that

the opponent has high costs (c_M) and with the probability (1-θ) that he has low costs (c_m) .

iv. Payoffs space - Profits of the two firms:

$$\pi_i(p_i, p_j) = (p_i - c_i)(x_i - y_i p_i + z_i p_j),\ i,j = 1, 2,\ i \neq j$$

Thus, Bayesian equilibrium of the game:

$$P = P_1 \times P_2 = [0, \infty) \quad (1)$$

where:

$$\begin{cases} p_1 \text{is the price chosen by the first player}, p_1 \in P_1 = (0, \infty) \\ p_2 = \{p_2^m, p_2^M\} \text{ (depending on costs, } c_m \text{ or } c_M) \end{cases} \quad (2)$$

To determine the equilibrium prices, we assume $q_i, i = \overline{1,2}$ demand functions, which are linear, differentiable and continuous for both firms:

$$\begin{cases} q_1 = x_1 - y_1 p_1 + z_1 p_2 \\ q_2 = x_2 - y_2 p_2 + z_2 p_1 \end{cases} \quad (3)$$

where:

- $x = x_1 + x_2$ is the maximum quantity demanded on the market;
- y_i expresses the marginal demand of the good i in relation to its price. We have normal goods only if $y_i > 0$;
- z_i is the cross-marginal demand in relation to the other firm price.

The average cost faced by firm 1 (hereafter F_1) is known by both competitors and firm 2 (hereafter F_2) can have two types of cost. Therefore, F_2 has private information regarding its costs, company F_1 can only make assumptions about the type of costs faced by its opponent.

$$\begin{cases} C_1(q_1) = c * q_1 \\ C_2(q_2) = \begin{cases} c_m q_2 \\ c_M q_2 \end{cases}, 0 \leq c_m \leq c_M \end{cases} \quad (4)$$

4. Model solutions

Having the hypotheses highlighted, we determine the equilibrium prices in a Bayesian-Bertrand game with two firms that compete by simultaneously setting prices.

Depending on the registered cost, we express the profit of F_2 as follows:

$$\pi_2^M = (p_2^M - c_2^M)(x_2 - y_2 p_2^M + z_2 p_1), \text{ if } F_2 \text{ faces high costs}$$
$$\text{or} \quad (5)$$
$$\pi_2^m = (p_2^m - c_2^m)(x_2 - y_2 p_2^m + z_2 p_1), \text{ if } F_2 \text{ faces low costs}$$

To write F_1's profit, we must specify the lottery he faces:

$$U : \begin{pmatrix} (p_1 - c)(x_1 - y_1 p_1 + z_1 p_2^M) & (p_1 - c)(x_1 - y_1 p_1 + z_1 p_2^m) \\ \theta & 1 - \theta \end{pmatrix} \quad (6)$$

The expected win (expected utility) for F_1 that is in information asymmetry is calculated based on the lottery defined in equation 6 as an average win between the profit obtained if F_2 establishes high prices and the profit obtained if it establishes low prices.

Its expected win is the previous lottery average, respectively:

$$\pi_1 = E(U) = \theta * (p_1 - c)(x_1 - y_1 p_1 + z_1 p_2^M) + (1 - \theta) * (p_1 - c)(x_1 - y_1 p_1 + z_1 p_2^m \quad (7)$$

Given the fact that firms make decisions simultaneously, their reaction functions form a system from which we determine the equilibrium of the game. The two microeconomic entities, being rational, aim at maximizing profit. Therefore, the reaction functions are obtained as a solution of the optimization program for each company.

Under the given conditions, two optimization programs are required for F_2 as follows:

i. if F_2 faces high costs

$$\max_{p_2^M} \pi_2^M = (p_2^M - c_2^M)(x_2 - y_2 p_2^M + z_2 p_1) \quad (8)$$

The reaction function of F_2 is determined by the first order condition:

$$\frac{\partial \pi_2^M}{\partial p_2^M} = 0 => p_2^M = \frac{x_2 + c_2^M y_2}{2y_2} + \frac{z_2 p_1}{2y_2} \text{ reaction function of firm } F_2 \quad (9)$$

ii. if F_2 faces low costs

$$\max_{p_2^m} \pi_2^m = (p_2^m - c_2^m)(x_2 - y_2 p_2^m + z_2 p_1) \quad (10)$$

with the following reaction function:

$$\frac{\partial \pi_2^m}{p_2^m} = 0 => p_2^m = \frac{x_2 + c_2^m y_2}{2y_2} + \frac{z_2 p_1}{2y_2} \quad (11)$$

The calculation of the reaction function is shown in Appendix 1.

The optimization program corresponding to firm F_1 involves maximizing profit when the type of firm F_2 is unknown, but assumptions are made regarding this.

$$\max_{p_1} \pi_1 = \theta * (p_1 - c)(x_1 - y_1 p_1 + z_1 p_2^M) + (1 - \theta) * (p_1 - c)(x_1 - y_1 p_1 + z_1 p_2^m) \quad (12)$$

The optimization is done in relation to the price p_1, and the first order condition is:

$$\frac{\partial \pi_1}{\partial p_1} = 0 => p_1 = \frac{x_1 + c y_1}{2y_1} + \frac{z_1[\theta p_2^M + (1-\theta) p_2^m]}{2y_1} \text{ reaction function of firm } F_1 \quad (13)$$

The system formed by the reaction functions of the two firms consists of three equations and three unknowns:

$$\begin{cases} p_2^M = \frac{x_2 + c_2^M y_2}{2y_2} + \frac{z_2 p_1}{2y_2} \\ p_2^m = \frac{x_2 + c_2^m y_2}{2y_2} + \frac{z_2 p_1}{2y_2} \\ p_1 = \frac{x_1 + c y_1}{2y_1} + \frac{z_1[\theta p_2^M + (1-\theta) p_2^m]}{2y_1} \end{cases} \quad (14)$$

The solution of the system is found in Appendix 2. The equilibrium price established by firm F_1 is determined by replacing the reaction functions of firm F_2 in the reaction function of firm F_1:

$$p_1^* = \frac{2x_1y_1+2cy_1y_2+z_1y_2[\theta c_2^M+(1-\theta)c_2^m]+z_1x_2}{4y_1y_2-z_1z_2} \quad (15)$$

The equilibrium prices for firm F_2 are obtained by replacing the equilibrium price of firm F_1 in the reaction functions of firm F_2 as follows:

$$\begin{cases} p_2^{M*} = \frac{4x_2y_1y_2+(4y_1y_2^2-y_2z_1z_2)c_2^M+2x_1y_1z_2+2cy_1y_2z_2}{2y_2(4y_1y_2-z_1z_2)} + \frac{z_1z_2[\theta c_2^M+(1-\theta)c_2^m]}{2(4y_1y_2-z_1z_2)} \\ p_2^{m*} = \frac{4x_2y_1y_2+(4y_1y_2^2-y_2z_1z_2)c_2^m+2x_1y_1z_2+2cy_1y_2z_2}{2y_2(4y_1y_2-z_1z_2)} + \frac{z_1z_2[\theta c_2^M+(1-\theta)c_2^m]}{2(4y_1y_2-z_1z_2)} \end{cases} \quad (16)$$

The obtained solutions are considered to be optimal if it satisfies the conditions of non-negativity: $p_1^*, p_2^{M*}, p_2^{m*} \geq 0$. So, $4y_1y_2 \neq z_1z_2$ and $4y_1y_2 > z_1z_2$.

For the considered case, π_1^*, π_2^* represent the profit functions:

$$\begin{cases} \pi_2^{M*} = (p_2^{M*} - c_2^M)(x_2 - y_2p_2^{M*} + z_2p_1^*) \\ \pi_2^{m*} = (p_2^{m*} - c_2^m)(x_2 - y_2p_2^{m*} + z_2p_1^*) \\ \pi_1^* = \theta * (p_1^* - c)(x_1 - y_1p_1^* + z_1p_2^{M*}) + (1-\theta) * (p_1^* - c)(x_1 - y_1p_1^* + z_1p_2^{m*}) \end{cases} \quad (17)$$

5. Findings

Following the methodology, we analyse the evolution of prices and profits taking into account the multitude of probabilities with which F_1 makes assumptions regarding the costs of F_2. Let us consider the scenario in which close, but not perfect substitutes exist for the differentiated product and an asymmetric demand.

Equilibrium prices and profits are determined on the basis of the following hypothetical data:

x_1	x_2	y_1	y_2	z_1	z_2	c^M	c_m	c	θ
108	96	1	1	0.8	0.9	20	10	16	[0.01;0.99]

We consider the case variation of probability θ in the [0.01, 0.99] interval with an increment step of 0.01. We show what happens with prices and profits depending on the size of the cost asymmetry. The price evolution is depicted in Figure 1.

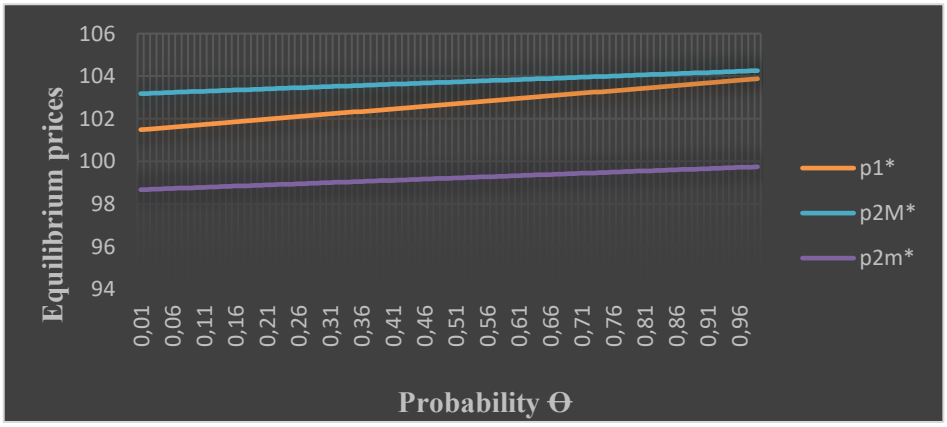


Figure 1. Price evolution
Source: Own processing.

By analysing the results, we notice that, regardless of the assumptions of F_1, the prices set by it approach the level of prices set by F_2 in case it faces high costs. This denotes the F_1's risk aversion. If F_1 assumes with a probability in the range [0.01, 0.54] that F_2 has high costs, the prices set by it are between 1% and 1.6% lower than the opponent's prices. When it assumes with a probability that tends to 1 that F_2 has high costs, the price levels set by the two firms are very close. As the cost difference between firms diminishes, the market price becomes more anti-competitive. Regardless of the level of assumptions about the type of opponent's costs, the prices of company F_1 are at least 2.86% higher than if F_2 faces low costs. Even if the firms compete on the same market, they can present homogeneous but not identical cost conditions that affect the competitive character.

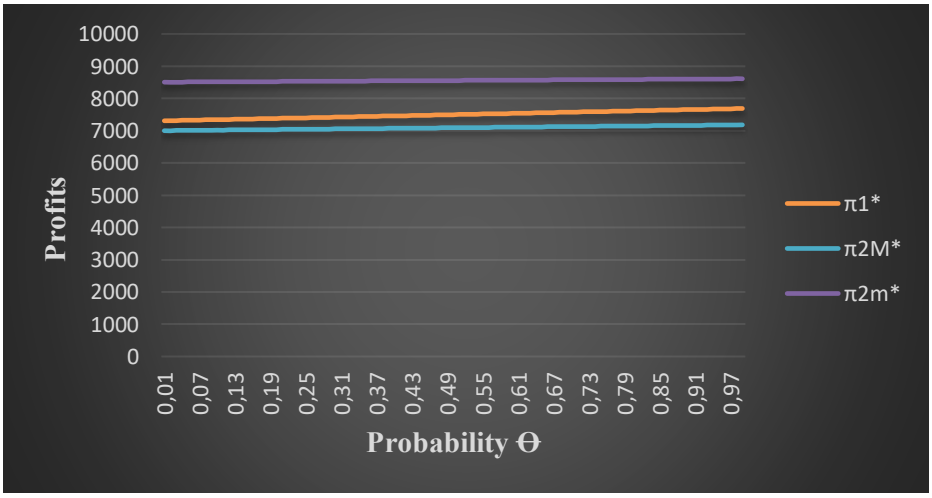


Figure 2. Profit evolution
Source: Own processing.

Regarding the evolution of profits represented in figure 2, F_1 can register higher profits only when F_2 has high costs. In this case, the gap between the profits of the two becomes larger as F_1 believes with an increasing probability that his opponent records high costs. When θ tends to 0, there is an insignificant gap between the profits recorded by the two firms. If F_1 is neutral it can record a higher profit by 5.7% when F_2 faces high costs or lower by 12.4% when F_2 faces low costs. We can see a significant variation in profit levels only if F_2 has low costs (over 10%).

If the probability to face high cost is close to zero, then we obtain the equilibrium of the Bertrand game in complete information.

Thus, homogeneity of cost assumptions is one of the essential determinants of collusive behaviour. A lower level of cost asymmetry can lead to higher prices in a Bertrand-type competition, which is a valuable antitrust aspect. Also, the size of the cost and demand asymmetry influences the strategies and market share of each firm.

6. Conclusions

The fierce competitive environment has determined the application of game theory models in the process of making optimal price decisions. Seen in this way, the description of economic games through game theory makes it possible to associate mathematical models through which their dynamics are outlined and the modelling of players' behaviour. Manipulation of the information became an important dimension of strategy in price competition, and an important determinant of the market structure, respectively. Being viewed only as a theoretical foundation of analysis of the competition, Bayesian games have become one of the most valuable tools that can be used to analyse present-day problems of Bertrand-type competitive situations.

Unlike the classic Bertrand model in which firms decide on price while seeking to maximize profit, the Bertrand model under incomplete information involves making assumptions about the opponent's costs. The equilibrium strategies (prices) for involved players depend in the Bayesian game on common knowledge cost (for F_1), on private F_2's cost (low cost c_2^m and high cost c_2^M), but also on F_1 beliefs (probabilities) on F_2 costs (θ probability to face c_2^M type and 1- θ probability to face c_2^m type). So, each company's behaviour not only depends on its own type, but is also influenced by possible unknown types and subjective beliefs on competitor's types. If the incomplete information disappears (θ tends to zero or to one) then we found the classical equilibrium strategies in complete information.

A firm can gain a competitive advantage only if its opponent faces high costs. Even if F_1 assumes with a low probability that its opponent faces low costs, the fixed prices are closer to the prices set by the opponent in case it actually records high costs. If F_2 faces low prices, the gap between the prices and profits of the two firms is significant.

In order to understand the complexity of price competition, to outline its dynamics and to model the behaviour of firms in such a competition, further research is needed. In the future studies we will consider the dynamic form of the Bertrand model in incomplete information – like in signalling games, sequential games and last but not least repeated games. In the case of dynamic Bertrand game we will analyse the cooperation strategies versus static Bertrand competition and the deviation (trigger) strategies in finite and infinite repeated games.

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Appendix

Appendix 1. Determine the reaction function for F_2:

i. if F_2 faces high costs

$$\max_{p_2^M} \pi_2^M = (p_2^M - c_2^M)(x_2 - y_2 p_2^M + z_2 p_1)$$

The reaction function of F_2 is determined by the first order condition:

$$\frac{\partial \pi_2^M}{\partial p_2^M} = 0 => x_2 - y_2 p_2^M + z_2 p_1 + (p_2^M - c_2^M) * (-y_2) = 0$$

$$=> x_2 - y_2 p_2^M + z_2 p_1 - y_2 p_2^M + c_2^M y_2 = 0 => p_2^M = \frac{x_2 + z_2 p_1 + c_2^M y_2}{2y_2}$$

$$=> p_2^M = \frac{x_2 + c_2^M y_2}{2y_2} + \frac{z_2 p_1}{2y_2}$$ reaction function of firm F_2

ii. if F_2 faces low costs

$$\max_{p_2^m} \pi_2^m = (p_2^m - c_2^m)(x_2 - y_2 p_2^m + z_2 p_1)$$

The reaction function of F_2 is determined by the first order condition:

$$\frac{\partial \pi_2^m}{p_2^m} = 0 => x_2 - y_2 p_2^m + z_2 p_1 - y_2 p_2^m + c_2^m y_2 = 0 => p_2^m = \frac{x_2 + z_2 p_1 + c_2^m y_2}{2y_2}$$

$$=> p_2^m = \frac{x_2 + c_2^m y_2}{2y_2} + \frac{z_2 p_1}{2y_2}$$ reaction function of firm F_2

Appendix 2. Determine the equilibrium price established by firm F_1:

The system formed by the reaction functions of the two firms consists of three equations and three unknowns:

$$\begin{cases} p_2^M = \frac{x_2 + c_2^M y_2}{2y_2} + \frac{z_2 p_1}{2y_2} \\ p_2^m = \frac{x_2 + c_2^m y_2}{2y_2} + \frac{z_2 p_1}{2y_2} \\ p_1 = \frac{x_1 + c y_1}{2y_1} + \frac{z_1 [\theta p_2^M + (1-\theta) p_2^m]}{2y_1} \end{cases}$$

The equilibrium price established by firm F_1 is determined by replacing the reaction functions of firm F_2 in the reaction function of firm F_1:

$$p_1^* = \frac{x_1 + c y_1}{2y_1} + \frac{z_1 \{\theta \left[\frac{x_2 + c_2^M y_2}{2y_2} + \frac{z_2 p_1}{2y_2}\right] + (1-\theta) * \left[\frac{x_2 + c_2^m y_2}{2y_2} + \frac{z_2 p_1}{2y_2}\right]\}}{2y_1}$$

$$p_1^* = \frac{x_1 + cy_1}{2y_1} + \frac{z_1\theta x_2 + z_1\theta c_2^M y_2 + z_1 z_2 \theta p_1 + z_1(1-\theta)x_2 + z_1(1-\theta)c_2^m y_2 + z_1 z_2 (1-\theta)p_1}{4y_1 y_2}$$

$$p_1^* = \frac{2x_1 y_1 + 2cy_1 y_2}{4y_1 y_2} + \frac{z_1\theta x_2 + z_1\theta c_2^M y_2 + z_1 z_2 \theta p_1 + z_1 x_2 - z_1\theta x_2 + z_1(1-\theta)c_2^m y_2 + z_1 z_2 (1-\theta)p_1}{4y_1 y_2}$$

$$p_1^* = \frac{2x_1 y_1 + 2cy_1 y_2}{4y_1 y_2} + \frac{z_1 y_2[\theta c_2^M + (1-\theta)c_2^m] + z_1 z_2[\theta p_1 + (1-\theta)p_1] + z_1 x_2}{4y_1 y_2}$$

$$p_1^*(4y_1 y_2 - z_1 z_2) = 2x_1 y_1 + 2cy_1 y_2 + z_1 y_2[\theta c_2^M + (1-\theta)c_2^m] + z_1 x_2$$

$$p_1^* = \frac{2x_1 y_1 + 2cy_1 y_2 + z_1 y_2[\theta c_2^M + (1-\theta)c_2^m] + z_1 x_2}{4y_1 y_2 - z_1 z_2}$$

By replacing the equilibrium price established by F_1 in the reaction functions of F_2, we obtain the equilibrium prices in case F_2, faces high or low costs.

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Digitalization in Accounting: A Structured Literature Review

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Abstract

Digitalization brings with it many changes worldwide, especially in those fields where information technology is indispensable. The accounting profession is such a field where digital transformations take its tool. The objective of this paper is to synthesize the recent academic works on the accounting digitalization area and to give some insights for future research by using a structured literature review (SLR). The findings of our study show that researchers direct their attention towards three main aspects: accounting education, professional regulation, and accounting information systems by showing how each of them contributes to changes in the accounting profession following its digitalization. The present paper could be of interest to researchers as it gives a summary of the existing recent literature in accounting digitalization.

Keywords: digitalization, accounting profession, structured literature review (SLR), accounting education, accounting information systems.

JEL Classification: M49.

1. Introduction

The aim of this paper is to synthetize and review the existing literature on digitalization in accounting. In so doing, this paper seeks to identify how the accounting profession changes due to digitalization and how accounting education, professional regulators, and accounting information systems contribute to this change.

The accounting field is one of the most affected by digital transformation given that most of the tasks performed by accountants are routine ones. Digitalization has the potential to influence accounting practices in many ways by bringing accountants into non-accounting functions (Knudsen, 2020). Advances in technology give a lot of incertitude with regards to roles that accountants would play (Kokina and

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Blanchette, 2019). All the above show that the accounting profession is likely to change due to digitalization in the following years.

Using a structured literature review (SRL) as a research method, the present paper addresses the following three research questions:

RQ1: How is research on accounting digitalization developing?

RQ2: What is the focus and critique of the literature on accounting digitalization?

RQ3: What is the future for research on accounting digitalization?

In answering our three research questions, we use a SLR as a research method. Massaro and Guthrie (2016) argue that a SLR requires rigid rules comparing with traditional literature review that has no rules. Also, in conducting a SLR, authors need to follow a specific plan and logically structure the paper. Thus, this method has the potential to help rebuild and reshape the existing literature review method used in accounting studies (Massaro and Guthrie, 2016). This type of literature review and other close methods have recently been used in the accounting area by authors. For instance, Tsalavoutas et al. (2020) conducted a study about mandatory IFRS disclosure, Dumay et al. (2016) reviewed the literature in integrated reporting area and Knudsen (2020) conducted a study on digitalization in accounting. The present paper follows the Knudsen (2020) study, which reviews the existing literature between 2008 and 2017, while our paper reviews the existing literature between 2018 and 2021.

Our findings show that researchers directed their attention towards the accounting digitalization area, but further research is needed to investigate the digitalization impact on the accounting profession.

The paper is structured as follows. The next section describes the methodology used. As Massaro and Guthrie (2016) argue in their paper, a SLR does not contain a traditional literature review, having that the literature review is done in the findings section. As such, in the third section, we summarize the findings in the reviewed papers, and in the last section, the main conclusion, directions for future research as well as implications and limitations are given.

2. Methodology: Structured Literature Review

Our literature review has been done by using the ten steps for developing a SLR that are given by Massaro and Guthrie (2016) in their paper, which are presented in Figure 1 below.

We first wrote a literature review protocol to define the boundaries for our research after noticing that there is a potential for a SLR on digitalization impact on the accounting profession and more specifically on financial accounting. Given that the literature on accounting digitalization is constantly evolving and the evolution in technology has gone through serious changes in the past few years, our literature review was limited to studies published between January 1st, 2018 and 2021. Moreover, only articles from accounting journals indexed in Scopus database have been selected in order to limit our search to published academic studies only and to exclude conferences and other unpublished papers.

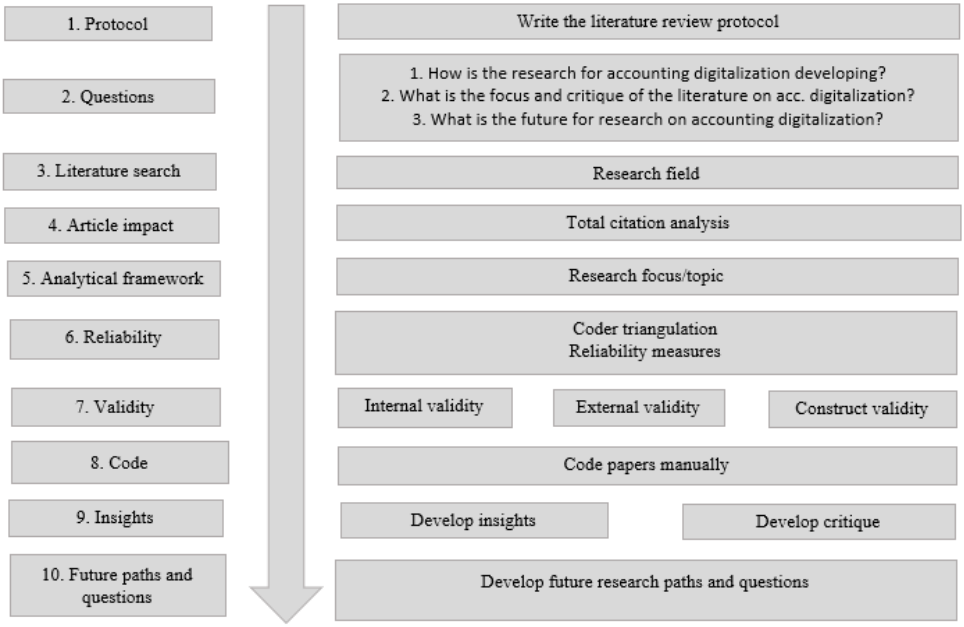


Figure 1. The process to develop a SLR
Source: Adapted from Massaro et al. (2016), p. 8.

Second, we have defined our research questions s having as a starting point the three generic questions for conducting SRL, as described by Massaro et al. (2016, p. 7), and adapting them to our study. The three research questions are presented in Figure 1.

Third, we determined the type of studies and carried out a comprehensive literature search. As mentioned above, we searched only in accounting journals indexed in Scopus database and available in Science Direct by selecting the subject area Business, Management and Accounting, section Accounting. The searching process was based on keywords search in the journals mentioned in Table 1. First we sought for the keyword "digitali?ation" and not surprisingly, only few papers have been returned. Similarly to Knudsen (2020), we then sought for other words related to digitalization. The query used in the search process, which could be found in Appendix A, returned a number of 118 articles, and the next step was to identify which of them are relevant for our research by reading the abstract for each paper. As a result, we found that only 17 papers were pertinent for our study as the other ones were more related to auditing, controlling, stock price and other different areas. Table 1 below shows the status of the accounting digitalization papers on the reviewed journals. The selected papers are presented in Appendix B.

Table 1. Status of Accounting digitalization articles in the reviewed journals

Ref. No.	Journals in the review	Number of articles
1	International Journal of Accounting Information Systems	11
2	Accounting, Organizations and Society	1
3	Journal of Accounting Education	4
4	The British Accounting Review	1
	TOTAL	**17**

Source: Authors' own research.

Fourth, we measured the article impact depending on the number of citations, which represents an indicator of interest in the research area (Dumay et al. 2016). Using Google Scholar, we found that the reviewed articles had been cited 322 times as of April 2021. For the selected articles published in 2018 and 2019, the total number of citations was 271, and for the articles published in 2020 and 2021, the total number of citations was 51. However, we did not exclude from our analysis the articles with a low number of citations given that they are recent, and it there was not enough time for them to be cited (Dumay, 2014). The top 3 most cited articles are Moll and Yigitbasioglu (2019) with 79 citations, who review the literature on the internet-related technologies in accounting, followed by Dzuranin et al. (2018) with 52 citations, who propose the infusion of data analytics in the accounting curriculum and Kokina, and Blanchette (2019) with 31 citations, who investigated the digital labour in accounting. The above indicate that there is an increased interest in the accounting digitalization area.

Fifth, we defined our analytical framework by identifying the units of analysis in our reviewed papers (Massaro and Guthrie, 2016). The unit that we considered suitable for performing the analysis was research focus. Furthermore, for this unit we chose three criteria: accounting education, professional regulators, accounting information systems and accountants in practice, as we found that accounting digitalization research in the reviewed articles is directed towards these main areas. Also, we believe that a better picture of accounting digitalization research could be better understood when splitting the research focus on different items. Moreover, for each criterion we discuss findings and research methods in order to see what the results of the papers are and how these have been analysed.

Sixth, we established the literature review reliability by separately coding the reviewed papers and coming up with a similar analytical unit.

Seventh, we tested the literature review validity for each of the three methods discussed by Massaro and Guthrie (2016). Internal validity was ensured when authors separately coded the papers. External validity was ensured by excluding irrelevant articles from the analysis after reading the abstract of the 118 articles. This process was in detail described in the third step. Construct validity was ensured through the analysis of citations as discussed in the fourth step.

Eighth, we coded the data as mentioned in the fifth step. Furthermore, we did not use any computer-aided coding, but we chose to code the data manually instead.

3. Insights and Critique

The nineth step in writing a structured literature review, as suggested by Massaro and Guthrie (2016), is to develop insights and critique by analysing the dataset. As such, this section aims to answer our first two research questions. Next, we will present our analysis in accordance with the defined analytical framework.

3.1. Accounting Education

3.1.1. Findings

Nowadays, organizations in the accounting area need more innovative workforce than ever before (EY, 2018), because entry level accounting jobs are heavy on data skills (Lawson and Smith, 2018). This statement shows us the need of accounting companies for accounting graduates that have not only accounting knowledge, but also innovation and data skills.

By analysing the reviewed papers, we determined that researchers contribute to this area to see whether accounting students meet the criteria required by employees and how universities and other education institutions should change their curricula to prepare students. As an example, Sarkar et al. (2020), identify the way accounting information systems and other related courses are adapted for preparing students with the necessary skills by analysing two different institutions. They found that both the focused approach and the hybrid approach are valuable for students to accumulate innovation and data skills. The hybrid approach is also supported in Dzuranin et al. (2018) in their paper. In addition, the authors of this study found support for an integrative approach and suggest that developing data analytic mindsets should be considered by faculties for their students.

Furthermore, Andiola et al. (2020) conducted a survey with AACSB accounting department leaders to see the status for integrated technology in their curricula. They found that accounting information systems are required by the majority of departments within the undergraduate curriculum. Also, the findings show that many courses integrate data analytics and technology, but they are very different.

Moreover, Ballou et al. (2018) found that knowledge, skills, and abilities such as holistic business knowledge, data analytics, technology and tools, research skills, writing or communication and unstructured problem solving can help create a scientific-method mentality. Moreover, authors state that discrepancies exist between academics' and accounting professionals' perspectives with respect to knowledge, skills, and abilities allocation.

The findings on the accounting education role on accounting digitalization provide a few key insights. In the first place, the review indicates that the knowledge and skills accounting students should acquire are beyond traditional accounting. Second, the review shows that data analytics and technology should be integrated in the accounting curricula in different approaches to help develop the required knowledge and skills.

3.1.2. Research Methods

The studies in our reviews focus mostly on the survey method, but case studies and interviews are also used.

3.2. Profession Regulators

3.2.1. Findings

Accounting profession regulators aim at helping with specific responses to the need for certain standards that the members of the profession should meet.

Recently, regulators started to integrate different standards in the context of digitalization. For example, listed companies are now required to submit their annual reports on XBRL formats. The construction of a taxonomy that allows computers to read and transmit accounting information is an essential step for accounting standard-setters to enable companies to comply with XBRL reporting standard and accommodate digitalization (Rowbottom et al., 2021). The authors of the study state that accounting standard-setters sought to minimise the digitalization impact by modelling the taxonomy. Findings in Rowbottom et al., (2021) paper show that the process of digitalization has the potential to change the IFRS principle-based approach in rule-based approach as corporate reporting should be more homogenous. With respect to the XBRL reporting, Pei and Vasarhelyi (2020) propose an accounting system that achieves better integration between non-GAAP sources of financial measures and information, named U-XBRL. Chiu et al. (2019) argue that XBRL is the most common developing technology studied by researchers. This argument is also supported by Hutchison et al. (2018) in their papers.

Furthermore, Alkhatib et al. (2019) investigate the factors that can influence the voluntary digital reporting to Companies House by small companies in the UK as in 2005 the UK government implemented two different digital reporting initiatives for these companies. The results show that the technology competences that a company has, the relative advantage that comes from standardization benefits and support from top management are the factors that positively influence voluntary digital reporting.

Advances in information technology bring about not only benefits, but also risks and threats mostly related to cybersecurity incidents (SEC, 2018). Gao et al. (2020), conducted a longitudinal study on cybersecurity disclosure, as in 2018 SEC approved a guidance on cybersecurity risk disclosures by outlining the importance of sufficient procedures and controls disclosure and interdicting insider trading on information about cyber incidents that are not public. The authors of the study found that risk of service or operation disruption and data breach risk are the two most frequently disclosed cybersecurity risks. In addition, findings of the paper show that cybersecurity risk disclosure length increased during the study period.

In summary, professional regulators play an important role in accounting digitalization as they help companies to digitally disclose their reports and come up

with guidance for disclosing cybersecurity risk, which is the new threat in nowadays' accounting information reporting.

3.2.2. Research Methods

Each paper in this section uses different research methods. For example, one of the papers uses a combination of interviews, observations, and documentary evidence, while other three papers use a single method: regression, conceptual model, and survey.

3.3. Accounting Information Systems

3.3.1 Findings

Advances in technology and the need for more real-time information changed the way accounting is performed. Thus, it was interesting for us to see how our reviewed papers describe the information systems and their role on accounting change.

For instance, Moll and Yigitbasioglu (2019) critically review the literature on big data, artificial intelligence, cloud computing and blockchain, and state that these technologies may contribute to a significant improvement of financial visibility. In addition, they argue that academics have largely ignored the influence of most digital technologies on accountants' work except big data. However, recently published papers discuss this relationship.

As an example of artificial intelligence, Kokina and Blanchette (2019) found that certain tasks that are repetitive and rule based are suitable for bots and will no longer be performed by people. In addition, they found that companies benefit from digitalization and automatization through robotic process automation in particularly, by saving their costs, improving process documentation, lowering the error rates, obtaining more accurate measurement of process performance, and having a better reporting quality. Regarding automatization, Søgaard (2021) proposes a prototype to show how accounting information systems, distributed ledger technology and public governance could be interrelated to increase social welfare. The author states that administrative burdens should be reduced for SMEs, given that the proposed prototype ensures the flow of tax revenue.

Cloud accounting is another component of digitalization that impacts the way accounting is performed. Asatiani et al. (2019) investigate the effects of the accounting process characteristics on decision to outsource accounting tasks. In so doing, they compare users of cloud-based and traditional accounting information systems. The authors found that users of cloud-based accounting information systems are more likely to outsource their accounting processes. With regards to research on accounting information system cloud computing, Alles (2018) argues that the literature fails to determine its clear role in relation to either the field of cloud computing or of accounting. Another interesting aspect is revealed by the information disclosure on social media, which has recently received attention from authors. In this respect Amin et al. (2021) investigate the determinants of disclosing

CSR information on social media. Their findings show that disclosing CSR information on Twitter has increased in the last few years, and that the presence of women on firm boards positively influences CSR disclosure on social media. Also, by citing Postman (2009), the authors present how companies benefit from social media disclosure. The unique characteristics that aim at providing value to social media are authenticity, transparency, immediacy, participation, connectedness, and accountability.

In summary, accounting information systems play a significant role in accounting change by moving the profession beyond its traditional aspects. Also, the way companies report the information is changing due to advances in technology by becoming more timely and more transparent. As Knudsen (2020), concludes in his study, "digitalization is the impetus for increasingly elusive boundaries of accounting".

3.3.2. Research Methods

The studies above use numerous different research approaches, such as textual analysis and regression, creation and evaluation of an IT artefact, interviews, surveys, and natural experiment.

4. Conclusions and Directions for Future Research

This study reviewed the most recent existing literature on the accounting digitalization area by using a structured literature review. Thus, this paper provides directions for future research in this area.

Our findings suggest that researchers have directed their attention towards accounting digitalization by investigating it from different points of view. In our reviewed papers we found three aspects that can play an important role in this matter. First, we saw that researchers pay significant attention to accounting education, especially on how the new requirements in the digitalization era could be integrated in education curricula to prepare students for practice and how they should be integrated. Second, we found that several papers investigated the impact of professional regulators on accounting digitalization by discussing the new standards and guidance and how they influence reporting. Third, we found that a significant number of papers directed their attention towards accounting information systems. In this respect, authors investigated the tasks that are suitable for the implementation of robotic process automation to replace people, what the new trends on information disclosure are, what their determinants are and whether cloud computing is a factor that influences the accounting outsourcing decision. Some authors even give prototypes on how accounting information should be reported to ensure social welfare.

However, we did not find any academic paper in our review that directly discuses about the impact of digitalization on the accounting profession and what the future of accountants will be, which could be an interesting aspect to study. Moreover, research is needed to find how the three aspects, academia, regulation, and

accounting information systems are interconnected to ensure a good operation in what means digital transformation and its implications on the accounting domain.

Despite its limitations related to the dataset, our study could be of interest for researchers, as it summarizes the findings in the accounting digitalization area of the past few years and gives insights for future research.

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Appendices

Appendix A. Query used in Scopus Database

[TITLE-ABS-KEY (digitali?ation OR digital OR "big data" OR "analytics" OR "cloud" OR "cyber" OR "mobile" OR "social media" OR "roboti?ation" OR "automati?ation" OR "artificial intelligence" OR "blockchain" OR "platforms" OR "internet of things") AND PUBYEAR > 2017 AND PUBYEAR < 2022 AND SRCTITLE ("Journal of Financial Economics" OR "International Journal of Accounting Information Systems" OR "Journal of Accounting and Economics" OR "Journal of International Accounting, Auditing and Taxation" OR "Accounting,

Organizations and Society" OR "Journal of Accounting and Public Policy" OR "Critical Perspectives on Accounting" OR "Asia Pacific Management Review" OR "Journal of Contemporary Accounting & Economics" OR "Advances in Accounting" OR "Journal of Accounting Education" OR "European Research on Management and Business Economics" OR "China Journal of Accounting Research" OR "Management Accounting Research" OR "The British Accounting Review")]

Appendix B. List of Selected Articles

Ref. No	Source title	Title	Method	Year	Authors
1	*International Journal of Accounting Information Systems*	CSR disclosure on Twitter: Evidence from the UK	Quantitative	2021	Amin, M.H., Mohamed, E.K.A., Elragal, A.
2	*International Journal of Accounting Information Systems*	A blockchain-enabled platform for VAT settlement	Conceptual	2021	Søgaard, J.S.
3	*Journal of Accounting Education*	Developing institutional skills for addressing big data: Experiences in implementation of AACSB Standard 5	Qualitative	2021	Sarkar, S., Gray, J., Boss, S.R., Daly, E.
4	*Accounting, Organizations and Society*	When the tail wags the dog? Digitalisation and corporate reporting	Qualitative	2021	Rowbottom, N., Locke, J., Troshani, I.
5	*International Journal of Accounting Information Systems*	Public companies' cybersecurity risk disclosures	Quantitative	2020	Gao, L., Calderon, T.G., Tang, F.
6	*International Journal of Accounting Information Systems*	Big data and algorithmic trading against periodic and tangible asset reporting: The need for U-XBRL	Conceptual	2020	Pei, D., Vasarhelyi, M.A.
7	*International Journal of Accounting Information Systems*	Elusive boundaries, power relations, and knowledge production: A systematic review of the literature on digitalization in accounting	Qualitative	2020	Knudsen, D.-R.
8	*Journal of Accounting Education*	Integrating technology and data analytic skills into the accounting curriculum: Accounting department leaders' experiences and insights	Quantitative	2020	Andiola, L.M., Masters, E., Norman, C.
9	*The British Accounting Review*	The role of internet-related technologies in shaping the work of accountants: New directions for accounting research	Qualitative	2019	Moll, J., Yigitbasioglu, O.

Ref. No	Source title	Title	Method	Year	Authors
10	*International Journal of Accounting Information Systems*	Early evidence of digital labor in accounting: Innovation with Robotic Process Automation	Qualitative	2019	Kokina, J., Blanchette, S.
11	*International Journal of Accounting Information Systems*	Impact of accounting process characteristics on accounting outsourcing - Comparison of users and non-users of cloud-based accounting information systems	Quantitative	2019	Asatiani, A., Apte, U., Penttinen, E., Rönkkö, M., Saarinen, T.
12	*International Journal of Accounting Information Systems*	Determinants of the voluntary adoption of digital reporting by small private companies to Companies House: Evidence from the UK	Quantitative	2019	Alkhatib, E., Ojala, H., Collis, J.
13	*International Journal of Accounting Information Systems*	A bibliometric analysis of accounting information systems journals and their emerging technologies contributions	Qualitative	2019	Chiu, V., Liu, Q., Muehlmann, B., Baldwin, A.A.
14	*International Journal of Accounting Information Systems*	Application of latent semantic analysis in AIS academic research	Qualitative	2018	Hutchison, P.D., Daigle, R.J., George, B.
15	*International Journal of Accounting Information Systems*	Examining the role of the AIS research literature using the natural experiment of the 2018 JIS conference on cloud computing	Qualitative	2018	Alles, M.
16	*Journal of Accounting Education*	Data-driven decision-making and its impact on accounting undergraduate curriculum	Mixt methods	2018	Ballou, B., Heitger, D.L., Stoel, D.
17	*Journal of Accounting Education*	Infusing data analytics into the accounting curriculum: A framework and insights from faculty	Quantitative	2018	Dzuranin, A.C., Jones, J.R., Olvera, R.M.

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Personal Data between Individual Protection and the General Interest

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Abstract

Processing of personal data by national security institutions and bodies or by law enforcement agencies is carried out on the specific basis of special legislation, derogating from the Lex generalis (GDPR). This paper examines some of the challenges posed by the need to protect national security, to prevent, detect and combat crime and, at the same time, to respect and protect the lawful right of the individual to benefit from the protection of personal data and privacy and family life.

Keywords: GDPR, Directive 680/2016, automatic processing, profiling, artificial intelligence, personal data protection.

JEL Classification: K15, K20, M15.

1. General Considerations

The entire processing of personal data by the national security institutions and bodies or by the law enforcement agencies stands out as indispensable to allow the development of activities aimed at ensuring national security or of the national judicial system. The current international and national legal framework establishes a number of general exceptions to the principles of personal data protection, highlighting all the circumstances in which the processing of personal data by above-mentioned institutions is allowed, as well as the reasons for these exceptions, i.e., those related to national security, prevention, detection and combating of crimes, etc.

What must be kept in mind, however, is that the exceptions we refer to are not unlimited freedom, but rather a temporary limiting and reasonable derogation from the general principles governing access to personal data, principles expressed clearly and without equivocal in art. 5 in the *lex generalis*, i.e., GDPR[1]. This is because, as stated in the doctrine (Tzanou, 2017), data protection as a fundamental right must be able to function both positively and negatively. Thus, on the one hand, it should be

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able to regulate, channel and control power and, on the other hand, prohibit power (abuse).

As a result, the legislation does not leave to the said institutions the undifferentiated and general access and processing of personal data, without any control, surveillance or restriction. This is despite the fact that Directive 680/2016 does not, in turn, establish the principles governing its action, nor does it make any reference to transparency in the processing of personal data, which is otherwise understandable, on the one hand, if we refer to the specific institutions that come to implement it. Recommendation no. 26 of the Preamble to the directive under review speaks of the principles that need to be respected when processing such data[2], but such recommendations are important in the EU legal order, but not legally binding (Dumitru & Stoican, 2020) and therefore do not produce legal effects *per se*, but rather have the role of providing assistance in interpreting the legal text or in the face of legal gaps.

Similarly, Recommendation 38 of the Preamble refers to a specific right of the data subject[3], but the right to explanations is not found in the articles of the Directive in question, although it would be a right to post-factum explanations for automatic processing or profiling.

Thus, the processing of data (metadata[4]) and information by national security institutions will take place in the context of their efforts to prevent and combat crime, but in compliance with the provisions of EU Directive no. 680 / 27.04.2016[5] as transposed into the legislation of the Member States and in a manner necessary and proportionate to the purpose pursued. At the same time, we consider that the reporting to art. 8 of the ECHR[6] is needed, especially given that the European Court of Justice has treated the Convention as a source of inspiration, but which "does not prevent the provisions of Union law from providing more extensive protection" (Craig & Burca, 2011).

2. Background Analysis

The age of the Internet, the advancement of technology and information technology in general, and the increasingly widespread and less restrictive use of social media on a global scale have provided law enforcement institutions with the appropriate means to gather data and information needed for their activity, giving them the opportunity to collect and process efficiently and without the knowledge of data subjects, huge amounts of personal data that are latent and free in the online environment and beyond. But this unprecedented technological boom has created challenges both for law enforcement institutions and for the legislator / regulator, and especially for the beneficiaries of national security measures who are, at the same time, subjects of the process of collecting personal data.

Thus, there was an increasing need for the above-mentioned institutions and the legal framework governing their activity to be able to adapt promptly to rapid social and technological changes in order to ensure adequate protection for the security of the citizen and the rule of law, in parallel with the protection of the fundamental

rights and freedoms of citizens and related to the four directions of data surveillance at EU level in the fight against terrorism:

- supervision of electronic communications metadata;
- travel data monitoring;
- supervision of financial data;
- data surveillance on the internet (Tzanou, 2017).

This is the general framework in which the legislation regulating the processing of personal data by national security institutions, and by law enforcement institutions, respectively, was enacted, in this case EU Directive no. 680 / 27.04.2016 above-mentioned, transposed into Romanian legislation by Law no. 363/2018 (Sandru, 2021). We specify that when enacting Directive 680/2016, there was also taken into account the previous experience generated by the declaration as invalid by the European Court of Justice of Directive 2006/24 / EC[7] by decision in Related Cases C-293/12 and C-594/12 Digital Rights Ireland and Seitlinger and others[8].

In this context, art. 10 of Directive (EU) 2016/680, and art. 10 of law no. 363/2018[9], respectively, transposing the directive into Romanian law establishes the so-called special categories of personal data[10], which may be processed exclusively subject to conditions *sine qua non*:

- The processing must be expressly provided by law. This wording is much more restrictive than the one provided in Directive 680/2016, which talks about the need for processing to be authorized by European Union or national law, without specifying how to authorize or the extent of this authorization.

- The protection is necessary to defend the vital interests or concerns of the data subject / of another natural person, which is transposed into Romanian law under the wording regarding the need to prevent an imminent danger to life, bodily integrity or health. In assessing the severity of social danger, the Romanian legislator refers to the most important protected social values, namely life / health. As a result, the production of material damages, even significant ones, cannot be considered as representing a social danger sufficiently important to justify the processing of data from the special categories listed exhaustively by the legislator.

- If, however, the data subject has made public data manifestly, they can be freely processed by law enforcement institutions as it indicates that they assume the risk of processing. The following question arises: Did the European legislator also take into account the fact that, "artificial intelligence is increasingly able to obtain privacy from… freely and innocently shared information such as: where did you eat lunch, for example, or what, what you bought at the grocery store? - and it can lead to deeply sensitive and personal details" (Calo, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3015350).

However, all these conditions must be corroborated by the need for the competent institutions to work in a well-defined case and, simultaneously, to provide adequate guarantees for protecting the natural rights and liberties of the person. Art. 10 does not specify the nature or extent of these guarantees. This task returns to art. 37 of the above-mentioned law. From the analysis of this article we

find that the legislator imposes an obligation on the operator who must document all cases of personal data breach and, in addition, keep the documents for a period of 5 years, as well as inform the jurisdictional authority without undue delay. At the same time, the same legislator introduces a random element in this process that is intended to be one of guaranteeing personal rights and freedoms. Thus, notification is not necessary if the breach of personal data security is not likely to pose a risk to the rights and freedoms of individuals (Art. 36 of Law no. 363/2018). However, the gravity and nature of this risk are to be assessed by the institution itself, which had to ensure that this infringement did not occur.

Probably out of the desire to provide other guarantees regarding the protection of privacy and personal data, the legislator also introduces a series of deadlines to be met regarding the deletion of personal data or the regular review of the need to store personal data (Art. 5 of Directive 680/2016). These terms represent, in fact, the assurance of a right to be forgotten, parallel to the right established by art. 17 to the GDPR. However, we believe that there must be sufficient enough safeguards to ensure, at all and any times, the effectiveness in eliminating the risk of abuse and misusage and against any unauthorized access or illegal use of personal data. Thus, a practical and extremely present aspect in the economic and financial life of any operator must be taken into account, namely the economic aspect that any operator will consider when determining the level of security measures it applies (i.e., the costs of implementing protection and security measures) or when irreversible destruction of all the data will be resorted to at the end of the retention period established by law.

A series of clarifications are required:

Technological developments have allowed data and information to be stored for a very long time, even longer than the natural life of human memory. This longevity of digital files allows law enforcement institutions to perform automated searches that are virtually unlimited in time. Hence the growing interest of such institutions to create databases and archive information. However, there are cases when it is preferable to have such a "forgetfulness" of personal data of individuals (Blanchette & Johnson, 2002) such as, for example, the situation of juvenile offenders who would thus have the chance to start life again in relation to state institutions and their records. As a result, we believe that a number of principles should be discussed that should govern the right to use and store personal data, such as the principles of necessity and proportionality that should be related to the need for law enforcement institutions to conduct efficient and accurate legal investigations. At the same time, the purpose of long-term retention of evidence should be analyzed in relation to the degree of social peril of the offence under investigation, its general complexity and, also, the damage that could be done to the subjects of long-term investigation, especially if it is a social reintegration. In this regard, the opinion of the ECHR, which unanimously considered that the indefinite retention by the British police of biometric data (DNA profile and fingerprints) and photographs of a person convicted of a crime punishable by imprisonment, must also be taken into account as a breach of art. 8 concerning the right to private and family life (Gaughran v. The

United Kingdom)[11]. Thus, the Court considered that without respecting the necessary proportionality to the legitimate objectives assigned to such storage mechanisms, the advantages provided by them would be harmed by the serious infringements which they would cause to the rights and freedoms that States must guarantee under Convention[12] of persons in their custody. At the same time, the Court considered that the United Kingdom should have established effective safeguards for the applicant concerned, including a real capacity, not a hypothetical one, to assess the process of keeping his data in view of the nature of the crime, the age of the person concerned, also the elapsed period of time along with the current personality of that person"[13].

In the same context, we must observe the solution adopted by the CJEU on 21.12.2016 in a specific case[14] who stated that "Member States may not impose a general obligation to retain data by providers of electronic communications services"[15] but rather established a new solution - "targeted retention (retention of data)" as a tool able to effectively support the fight against serious crime (Grabowska-Moroz, 2021). Thus, the Court stated that, although EU law precludes a general and non-discriminatory possession of traffic and position data, Member States may provide, as a precautionary measure, for the targeted retention of such data only for the purpose of combating serious crime, provided that this retention be (as regards the categories of data to be retained, the means of communication involved, the data subjects and the chosen retention period) limited to what is regarded as strictly necessary. Also, the access of the above-mentioned data to the national authorities must be subject to certain conditions, including previous review from the independent authority on retention of the data in the European Union[16].

Regarding the automated data processing, respectively the process automation methods used in the OSINT (Open Source Intelligence) activity, art. 11 of the same directive establishes the obligation for Member States to ensure that a decision based solely on automatic processing, including profiling, which has a negative legal effect on the person concerned or which significantly affects him, is prohibited. *Per a contrario*, processing which has no harmful effect or which does not cause major damage is permitted. The issue of assessing the intensity and extent of the effects remains, and these are considered to be adequately assessed through the intervention of the human operator. The following issues arise: profiling is allowed, unless decisions are made solely on the basis of automatic assessment or result in discriminatory decisions based on these profiles. However, the legislator does not talk in these articles about how to calibrate the profiling that may be based on discriminatory criteria or result in decisions of a discriminatory nature or lacking fairness and clarity.

Thus, it should be noted that the technical process by which a development of analytical tools based on algorithms is required, necessarily involves the use of various data sets, obtained by increasingly sophisticated means and methods such as body worn video cameras, so-called crowdsourced images, CCTV images, traffic video recordings, etc. This data will be processed automatically and will result in a materialized analysis in the form of an investigation report. In the context of criminal

proceedings, we believe that in order to ensure a fair and non-discriminatory or random assessment, the outcome of the investigation should not be assessed in isolation and, at the same time, both the video recordings and their analysis or investigation report should be assessed together in court (Leroux, 2004).

European and national legislation, respectively, provide for different legal implications and procedures, depending on the parties involved in the exchange or transfer of data, public or private legal persons. At the same time, the nature of the data processed (commercial information, audio-video materials, data from operational records or criminal records) and the intended purpose are important, as they may vary from judicial proceedings / criminal investigation to research and development. All these elements will establish the applicable law, i.e., Directive 680/2016 or the General Data Protection Regulation (GDPR).

Last but not least, it should be remembered that there are situations in which the processing is carried out in circumstances that do not fall within the scope of personal data protection legislation, respectively when it comes to the processing and sharing of anonymized data, in which case none of the above-mentioned normative acts, national criminal law or criminal procedure legislation may become incidents. In this situation, the obligations of personal data controllers are rather enshrined in national law and, consequently, may be transferred from one Member State to another or depending on the nature of the data, historical, operational, data based on facts or based on personal assessments (Art. 7 of Directive 680/2016). Thus, in the criminal process, law enforcement authorities/agencies will be obliged, based on the presumption of innocence, to comply with the obligations of confidentiality and secrecy regarding data and information obtained in the investigation and prosecution of specific crimes, the access being restricted to those who have a legitimate interest in accessing information, controls and procedures may be imposed to monitor and restrict access to personal data, in the framework of the procedure for ensuring respect for the right to protection of personal data.

The European legislator also introduces an exception, namely the situation where automatic processing is considered to be:

1. Authorized by Union / national law applicable to the operator;
2. The legislation provides adequate defenses for the birthrights and liberties of the data subject, respectively at least the above-mentioned right to obtain the specified human intervention from the operator. We tie-up that the right to obtain an intervention in the sense of human analysis so that the decision is not taken only on the basis of automated analysis, is a minimum right / guarantee that must be provided to the person concerned by the reference legislation. At the same time, however, the legislator does not have practical measures to ensure this human intervention or to provide clear and undeniable guarantees designed to remove profiling on the above-mentioned discriminatory criteria, which are strictly prohibited by law, but leaves this behavior to the operators, as it results from art. 12, respectively 13 of the mentioned national law. In this context, we believe that it was imperative that appropriate, practical measures be put in place to protect the already mentioned rights, freedoms and legitimate interests of the data subject, beyond the

obligation to respond to data subjects' requests for such processing, in particular that it is about the creation of profiles that result in discrimination of individuals based on the special categories of personal data mentioned above, a ban clearly established by art. 11 para. 2, 3 of the European legislation, respectively the Transposition Law no. 363/2018. This is because, in the absence of the data subject's request or the risk posed by a security incident, we do not find a specific obligation to inform the operator. Thus, art. 13 sets the minimum but also the maximum limits of the content of the information to be supplied to the data subjects, but does not stipulate the way the data of the subjects are processed or regarding the existence of an automatic decision.

In the context of the rapid evolution of Artificial Intelligence systems and the challenges posed by this mode of processing that create gray or unaddressed areas in the current regulation, a situation specific to each data-intensive technology, regulations such as GDPR or Directive 680/2016 will always be behind the new advances in technology, or "just because it is too difficult for regulatory change to keep pace with technology" (Fosch Villaronga & Kieseberg & Tiffany, 2018). Therefore, we believe that the right of data subjects to information should also include the right to know whether their data have been processed by processing and analysis tools based on AI systems. Thus, we agree with the view expressed in the doctrine[17] that Article 13 (2) (d)[18] may apply under subject to the provisions of Article 13 (3)"[19] which, moreover, do not differ from those referred to in the relevant basic regulation, namely Article 23 (1), (a), (c), (d) and (i), from the GDPR, stating that Member States "may" (according to Article 13 (4)) list the categories of processing subject to the restrictions referred to in Article 13 (3). Added to this is the need to differentiate between the identification of a natural person and the detection and tracing of a natural person, as well as between individual surveillance and mass surveillance[20].

However, the legislator comes to complete, to a certain extent, these provisions with a series of technical and procedural provisions that we find in art. 7, 35-37 of the national law or in other disparate provisions of Directive 680/2016 and the law transposing into Romanian law, but we it consider insufficient.

In parallel, we cannot fail to state that, although apparently both normative texts, the mentioned directive and the transposition law have the same meaning, there are differences between them that can lead to different interpretations from the courts that will have to resolve possible conflicts tasked with reporting on the direct or indirect effect (Dumitru & Stoican, 2020) of European legislation and the aim pursued by the enactment of that Directive (to harmonize the relevant provisions of the Member States), also related to the aim pursued by the main legislation, namely the EU Regulation) no. 679/2016 (GDPR)[21], which came to regulate and update the legislation in the field (Chirica, 2017).

It should be mentioned that, as stated above, art. 13 sets out measures that can be considered both control and protection of data subjects, namely the fact that, at their request, the operator makes available to data subjects a set of information (additional information may be provided, but not less than that). In this context, the solution of

the ECHR in the case of Liberty and others v. The United Kingdom[22], which found that an internal act of the United Kingdom (The Interception of Communications Act of 1985), based on which data belonging to civil liberties organizations were intercepted, was a violation of the same Article 8 of the above-mentioned European Convention on Human Rights, as it allowed an excessively wide scope of action of the authorities to intercept communications without providing guarantees against abuse of power.

The provision of this kind of information to the targeted subject will enable the individual to assess whether we find ourselves in the presence of a breach of the subject right to the protection of personal data and/or of his or her distinctly regulated right to privacy. Without correct information of the data subject, he / she will not be able to pertinently establish his / her future actions or to exercise his / her right to an effective judicial remedy, as provided by art. 53-54 of Directive 680/2016. In their turn, the courts called to decide on possible cases of violation of the law, respectively the compliance of the operators with the principles of legal and fair processing provided in art. 4 para. 1 lit. a of the same directive will not be able to fulfill this obligation knowingly. Last but not least, also on the basis of the information provided by the operators, respectively the institutions in the field of national security, it will be possible to establish whether a system has been established illegally, which winds up in discrimination of individuals on the basis of special categories of individual data referred to in Article 10 (Art. 11, para. 3 of Directive 680/2016).

Likewise, as provided by art. 36 of Law no. 363/2018, "the operator who finds a breach of data security, shall notify the supervisory authority without undue delay". At the same time, the controller is obliged to fill in the data subject regarding the security incident notified to the supervisory authority only if the breach of security is likely to pose a high risk to the rights and freedoms of personas. However, the phrase "high risk" is encountered in the content of art. 39 of the analyzed law.

We consider, however, that the provisions of para. 4 of the above-mentioned article according to which the supervisory authority notified by the operator according to the obligations provided in art. 36, is, in fact, the real guarantee for the fair information of the person concerned about the incident and the possibility of suffering an injury. According to the provisions of art. 35, "the controller or, as the case may be, the person authorized by the controller is obliged to carry out an assessment of the risks incident to the intended processing", therefore the aim is the mandatory implementation of an obligation regarding an anticipatory analysis that must take place before the personal data processing procedure of the data subject. We agree with the view expressed in the doctrine that the scope of evaluations must be even wider in the sense that evaluations of the impact on data protection must be carried out, even before the implementation of high-risk technologies (Lilian, 2020).

Clearly, needs relating to the protection of public order and safety, investigations and proceedings of a judicial nature or the protection of the rights of others are necessary but also sufficient grounds for Member States to adopt legislative measures (following an ordinary or special legislative procedure), which are to allow

a postponement, restriction/omission of delivering the information to the data subject. It is clear that the categories of processing may be covered, in whole or in part, by such actions, but provided that such action is a necessary and proportionate proceeding in a self-governing society, having regard to fundamental rights and by the legitimate interests of the natural person. We consider that when we talk about a "democratic society" we must unmistakably refer to the values that are being provided in art. 2 of the TEU[23], despite the increasingly obvious challenges on the part of some Member States[24] to respect these principles and the rule of law as they are governed by European law[25]. At the same time, reference should be made, as mentioned above, to the fact that, in a solution, the European Court of Justice stated that although EU law precludes a general and non-discriminatory retention of traffic and location data, Member States may provide, as a precautionary measure, for the targeted retention of such data only for the purpose already mentioned (of combating serious crime, provided that such retention is, as regards the categories of data to be retained, the means of communication involved, the data subjects and the duration chosen for storage) limited to what is rigorously necessary. The access of the retained data to the national authorities must be subject to certain conditions, including prior review by the independent authority and retention of the data in the European Union (https://curia.europa.eu/jcms/upload/docs/application/pdf/2016-12/cp160145en.pdf).

3. Conclusions

There are, of course, a number of conclusions of a theoretical nature, but especially practical:

1. Personal data controllers must be constantly aware that the processing of data by or using automated systems will almost always lead to the use of personal data and, as a consequence, may constitute a breach of the provisions on the right to privacy, the protection of the above mentioned personal data or fundamental right of confidentiality. The ECFR (https://curia.europa.eu/jcms/upload/docs/application/pdf/2016-12/cp160145en.pdf) has explicitly enshrined these rights as two fundamental and, simultaneously, distinct rights. The right to have respect for private and family life ensures and guarantees to any person, in fact, protection for home life over and above the privacy assumed by the legal institution of the family, but also on communications (Art. 7 of the European Charter of Fundamental Rights). On the other hand, this right, as regulated by that Charter, guarantees everyone the right to the protection of such data concerning them. Here is a clear distinction that limits the scope of the notion of personal data.

2. As technological developments are extremely rapid and the technical characteristics of new technologies are often difficult to understand, the legislator and policy makers will find themselves in a situation where they have to take into account both potential violations[26] through unregulated technologies, as well as the effect resulting from the interconnection of different surveillance, collection, processing data analysis systems. In this contexture, it should be highlighted that the use of unregulated technologies for obtaining evidence has been classified by the

ECHR as a violation of the right to privacy[27]. Nevertheless, the areas of data protection and privacy have been frequently invoked to challenge the EU's executive action (Craig & Burca, 2011) and to call for the active intervention of the European Commission as an exponent of the executive branch.

3. In the absence of a binding, coherent and coordinated legal framework, clear and detailed guarantees provided by the above-mentioned legal mechanism to ensure an adequate level of legal protection for those who have access to personal data, on the one hand, and mechanisms for supervising, sanctioning and resolving disputes, on the other hand, the access and exchange of personal data and not only, carried out in a timely, rapid and efficient manner, between cross-border competent institutions will remain an unequivocally regulated or even unregulated reality (Dumitru, Chirieac, 2/2020). We consider that, beyond the letter of the law and the specifics of the legislation of the European Union, its spirit must be taken into account in all situations and, consequently, in the interpretation of each concrete case, it is necessary to refer to the provisions of art. 4 para. 2 of the TEU. Note especially the closing part of this paragraph ("In particular, national security remains the sole responsibility of each Member State"). We therefore agree with the opinion[28] that EU law, including the CFREU (the Charter of Fundamental Rights of the European Union: https://eur-lex.europa.eu/legal-content/RO/TXT/PDF/?uri=CELEX:12012P/TXT&from=EN), should not apply to matters concerning the national security of the Member States of the EU. This is an important thing to keep in mind at all times, the challenges that Member States face in terms of protecting national security and the specific threats to it that may come from both inside and especially from outside. And as long as there is not yet a unified approach to security in the European Union, as long as we are not talking about a common defense policy or a unified, rapid and coherent approach to threats to the security of the Union as a whole and of the Member States as immanent divisions, we believe that it must remain the responsibility of national states to adopt the best solutions to prevent and combat these types of threats. Ultimately, it must not be forgotten that the European legislator adopted this normative act in the form of a directive, so that its provisions apply within the limits and conditions implemented in national legislation, as they have been adapted to local specificities.

4. We also consider that the provisions of the GDPR and of Directive no. 680/2016 will outline, mandatorily, through the obligations established for the operators, the direction of development of AI, machine learning and NLP as well as of the eventual and subsequent technological developments specific to this field of application.

5. Last but not least, the entire legal framework governing the protection of individual data and privacy must be constantly harmonized with the principles of the so-called Area of Freedom, Security and Justice (AFSJ)[29], which can be a step forward in creating global data protection rules (Casagran, 2017).

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[2] "any processing of personal data must be lawful, fair and transparent to the individuals concerned".

[3] The right to "specific information and the right to obtain human intervention, in particular to express the individual point of view, to receive an explanation of the decision taken following such an assessment, or to challenge the decision".

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[17] Article 29 Data Protection Working Party, (29 November 2017) *'Opinion on Some Key Issues of the Law Enforcement Directive (EU 2016/680)'*, p. 15, http://ec.europa.eu/newsroom/just/document .cfm?doc_id=48804.

[18] Directive 680/2016, art. 13, para. 2 lit. d:) where necessary, additional information, in particular when personal data are collected without the knowledge of the data subject.

[19] Member States may adopt legislative measures to postpone, restrict or omit the provision of information to the data subject in accordance with paragraph 2 in so far as such a measure constitutes a necessary and proportionate measure in a democratic society, taking into account take into account the fundamental rights and legitimate interests of the natural person, in order to:

(a) avoid obstruction of official or legal investigations, inquiries or proceedings;

(b) not prejudice the prevention, detection, investigation or prosecution of criminal offenses or the execution of sentences; (c) protection of public security;

(d) protection of national security;

(e) the protection of the rights and freedoms of others.

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The New Direction of the EU: the Creation of a Digital Europe

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Abstract

In the latest years, at the European Union level, a new concern has been representing the new direction for development not only for environmentalists, but also for the political and business world. As such, more and more budget is allocated by the EU itself, member states, companies and even private individuals towards the protection of the environment, to speed up the process of digitalization and the creation of a green climate.

The European Union presents yearly reports upon the situation of the environment and climate change and the conclusion is that there is a need of developing new partnerships and funding the transition to a new digital era.

The present paper, therefore, aims at presenting the current situation of climate concerns at the level of the EU, the proposed solutions towards a digital Europe, the methods and their particularities, both from a theoretical and practical point of view and their expected short-term and long-term results.

Keywords: climate change, European Green Deal, ecosystem degradation, digitalization.

JEL Classification: K19, K24, K30, K32.

1. Introduction

One of the top priorities of the European Union so far, with a promise that until 2050 the European Member states will become climate neutral, is the focus on climate change and digitalization of the EU.

Despite its continuous efforts, the European Union has not yet been able to be at the forefront of the global action in its battle with climate change. Thus, the policies adopted by it to reduce greenhouse gas emissions and provide energy from other clean sources did not manage to be as effective as intended, as gas emissions in

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certain areas are, on the contrary, rising, while in the electricity field, coal still happens to be an important element (Claeys et al., 2019).

As such, the climate policy has quickly become one of EU's most least approachable policies, as it still brings divisions of opinions among its leaders, with the fossil-fuel price continuing to rise, while some member states make considerable effort to become climate neutral (Laurent, 2020).

Therefore, in the latest years, at the European Union level, a new concern has been representing the new direction for development not only for environmentalists, but also for the political and business world. More and more budget is allocated by the EU itself, member states, companies and even private individuals towards the protection of the environment, to speed up the process of digitalization and the creation of a green climate (Stern, 2006).

As a consequence, the European Union presents yearly reports upon the situation of the environment and climate change and the conclusion is that there is a need of developing new partnerships and funding the transition to a new digital era.

At the extraordinary meeting of the European Council on 1-2 October 2020, EU leaders called on the Commission to present a Comprehensive Digital Compass, setting out the EU's concrete digital ambitions for 2030, finalized with the Commission presenting its proposal in March 2021.

Digitization has the potential to provide solutions to many of the challenges faced by Europe and Europeans, as the digital technologies are not only changing the way people communicate, but also, more generally, the way they live and work and the situation created by the COVID-19 pandemic has given the EU a new impetus to work to accelerate the technological transition. Digital solutions contribute to job creation, the advancement of education, boosting competitiveness and innovation and can improve citizens' lives (Colli, 2020).

Therefore, protecting EU values, as well as fundamental rights and the security of citizens, is a key element of the digital transition, with the digital technology playing a key role in transforming the European economy and society, in order to achieve a climate-neutral EU by 2050, a goal agreed by EU leaders.

The EU aims for a human-centred approach that respects social differences across the Union and the digitization has been a key component of the EU's response to the economic crisis caused by COVID-19. As such, the COVID-19 pandemic has made the need to accelerate the digital transition in Europe even more pressing.

In the post-COVID-19 environment, the EU aims to protect and strengthen its digital sovereignty and leadership in strategic international digital value chains, as key elements in ensuring strategic autonomy in the digital field, while promoting the common values of respecting fundamental freedoms, including data protection and privacy, security and safety.

The Council adopted the Regulation for the Recovery and Resilience Mechanism, at the beginning of 2021. The mechanism, valued at EUR 672.5 billion, is the core of the EU's extraordinary recovery efforts, represented by Next Generation EU (NGEU) - the EUR 750 billion plan on which the EU leaders have agreed in July 2020.

The funds are allocated to the Member States for the coping with the social and economic effects of the COVID-19 pandemic, while ensuring that their economies make the green and digital transition, thus, aiming at more sustainable and resilient economies.

As such, in order to participate in the Recovery and Resilience Mechanism, EU countries are called upon to set forth their propositions for reasoned schemes, reforms and expenditure in six policy areas (i.e., green transition, digital transformation, smart, sustainable and inclusive growth and employment, social and territorial cohesion, health and resilience), as well as projects for the future generations, comprising education and skills, where EU Member States must come up with national recovery and resilience plans, in which they will present their agendas for reforms and investments no later than 2026 (McMichael et. al., 2004).

2. The Climate Change Policy

The changes that are currently affecting the planet's climate are altering the world. In the prior 20 years, 18 have been among the warmest years ever recorded, and extreme weather incidents, such as forest fires, heat waves and floods, are becoming more common everywhere in the world (Stern, 2008).

Experts have surmised that unless urgent action is taken, global warming is likely to exceed pre-industrial levels by 2 °C by 2060, and this exceedance could even reach 5 °C by the end of the century. Such an increase in temperature will certainly lead to ruinous effects on the environment, leading to irreversible changes throughout various parts of the global ecosystem and, as such, a decline in biodiversity. Rising temperatures that will lead to weathertight occurrences will undoubtedly affect EU's economy and its ability to produce food.

At the extraordinary meeting of the European Council on 24-25 May 2021, EU leaders reaffirmed the conclusions adopted at their December 2020 meeting. They called on the Commission to swiftly present its "Ready for 55" legislative package, together with an in-depth analysis of the economic, social and environmental impact at Member States level and they agreed to return to this issue after the Commission proposal was presented.

In conclusion, the EU leaders welcomed the recent agreement reached by the Council and Parliament on the proposed European climate laws. The European Union has set out legislation fixing ambitious goals in several sectors, in order to achieve its international commitments referring to climate change. In this respect, EU Member States have set in different sectors of the economy, targets for greenhouse gas emissions, whilst also aiming towards policies in order to reduce greenhouse gas emissions.

Among the results obtained so far, it can be said that even by 2017, the EU reduced its emissions by almost 22% compared to 1990, reaching its 2020 emissions reduction target three years ahead of schedule. In December 2020, given the EU's dedication to raising its level of climate ambition under the Paris Agreement, the leaders of the EU approved a mandatory target of at least 55% net domestic greenhouse gas emissions by 2030 compared to 1990.

Due to the recent results in the matter and proposed targets, in April 2021, the leading legislative institutions of the EU, Council and Parliament, reached an interim accord on the European Climate Law that focuses on transposing the 2030 emission reduction target into legislation. The agreement was approved by the EU ambassadors in May 2021.

This more ambitious climate goal will imply the transformation of EU's industry. However, it will stimulate sustainable economic growth, create jobs, brings health and environmental benefits to EU citizens and contribute to the long-term competitiveness of the global EU economy by promoting innovation in green technologies.

Regarding the 2030 target, the negotiators agreed on the need to give priority to reducing emissions over absorption. To ensure that sufficient efforts are made to reduce and prevent emissions by 2030, they have introduced a limit of 225 million tons of CO2, equivalent to the contribution of emissions to the net target. They also agreed that the Union should aim for a higher volume of net carbon absorbers by 2030.

Other elements of the provisional agreement include the establishment of a European Scientific Advisory Board on Climate Change, composed of 15 high-level scientific experts of different nationalities, of which a maximum of 2 members may be nationals of the same Member State for a term of four years. This independent council will be responsible, inter alia, for providing scientific advice and reporting on EU measures, climate targets and indicative budgets for greenhouse gases, as well as their coherence with European climate law and the EU's international commitments under the Paris Agreement.

As already mentioned, the European Parliament voted on October 7th 2020 on the Climate Law, which can make Europe the first emission-neutral continent. In order to adapt to these new European plans, some member states, such as Romania and Bulgaria, will have to radically alter their programs for the energy sector, transport and other areas that have an impact on its carbon footprint.

Also, all EU-funded projects will need to be in line with combating the effects of climate change (Jordan, 2012).

An important step will be to reduce emissions by 60% by 2030, a target above the 50-55% proposed by the European Commission, but slightly below the 65% required by scientists. The target set in previous years was only 40%, but the 2018 Intergovernmental Panel on Climate Change (IPCC) report exposed the climate urgency and the need for more ambitious targets, which can maintain global warming around the 1.5 degree Celsius target set by the Paris Agreement. At an average global warming of over 1.5 degrees, climate catastrophes increase exponentially, as does the difficulty, or even the impossibility of humanity to manage them.

Romania, for example, is already facing the effects of climate change: desertification in the south continues at an accelerated pace, with an unprecedented drought in the southeast of the country and heavy floods in the west. If effective approaches to alter the consequences of climate change are hindered, the European Parliament's decision will force Romania to take action that will result in radical

changes. The current national strategies cannot ensure the achievement of the objectives – not even those assumed in previous years, such as greater energy efficiency or more renewable energy, where Romania has significant potential.

Romania needs to adapt its Integrated National Plan for Energy and Climate Change (PNIESC), the National Energy Strategy and work on a new National Strategy on Climate Change, together with the training of civil servants in public institutions. It also needs to launch strategies to give up coal and install new renewable energy capacities.

Also, at the EU level, the transport sector is one of the largest contributors to emissions, as it generated 27% of EU greenhouse gas emissions in 2017.

The decision taken by EU's Parliament to lower greenhouse gas emissions by 60% will also have a strong impact on many member states' transport sector, with the implication that they must prioritize the creation of networks for public transportation using renewable energy, pressingly update existing railway infrastructure, improve and promptly expand integration for bicycles and pedestrians and motivate the growth of micro-mobility services. It is a resolution for some of the European cities to close roads for road traffic and set low-emission areas; there is also the obligation for the acceleration of drafting legislation that will encourage the abandonment of petrol and diesel cars, whilst replacing them with electrical ones.

Also, according to the recent climate legislation, by July 2021, the Commission will revise and, when deemed appropriate, propose a review of the relevant provisions in order to achieve further emission reductions in the perspective of 2030. The Commission proposes to set an EU-wide trajectory for the period 2030-2050 in reducing greenhouse gas emissions, in order to evaluate the development and ensure predictability for both the public and private sectors.

The Commission will evaluate in 2023, and then every five years, the coherence of European measures as well as national ones, so that they may be in accordance with the targets set by the climate neutrality 2030-2050 trajectory.

The Commission, in its role to implement EU policies, will still be able to make recommendations to Member States who fail to align with the goal of climate neutrality, while the latter remain obligated to comply with the recommendations or, justify their failure to comply. In addition, Member States will need to come up with and accomplish plans that are meant to build up resilience and decrease the exposure to climate change consequences.

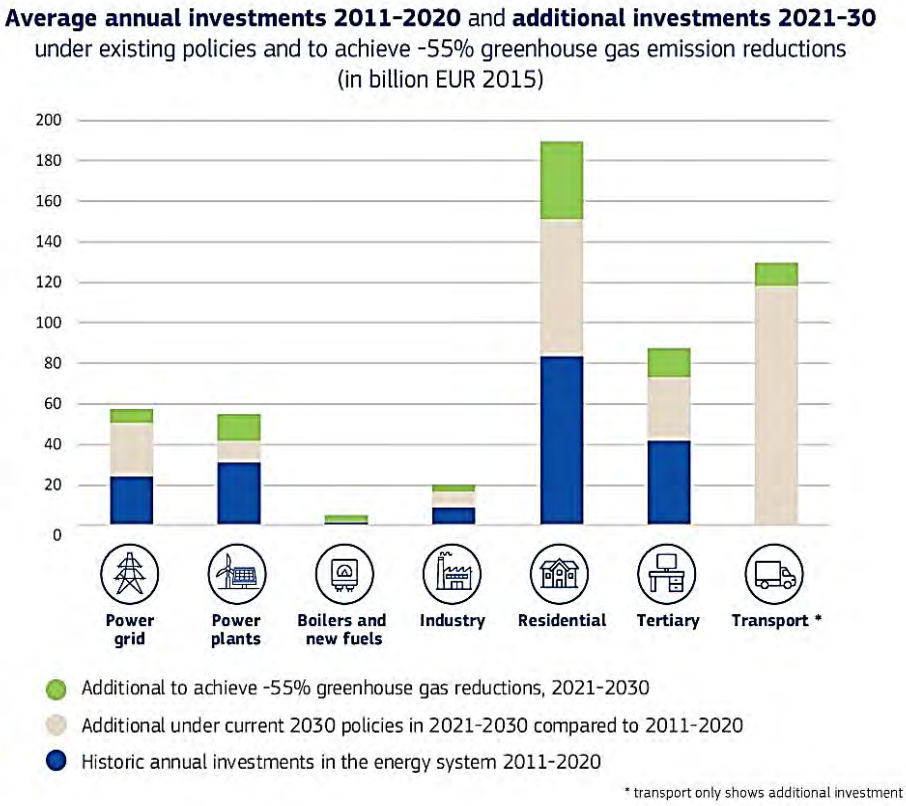
Last, but definitely not least, the development of the climate strategy and its new legislation requires important finances not only at the level of the European Union, but also for the member states.

As such, from a financial point of view, the full implementation of the National Energy and Climate Plans over the coming years will require important new investments from both the public and private fields.

Based on the European Commission's report, to achieve the current EU 2030 climate and energy targets, annual investments related to energy production and use will need to increase in 2021-2030 by almost €260 billion per year, while for an

increased greenhouse gas emissions reduction target of 55% this figure would increase to around €350 billion.

However, statistically, most member states reported important needs and investments in the energy-related field, industrial and transport sectors, while few reported expected investment needs in the agricultural sector (see image below).



Source: European Commission – Communication from the Commission to the European Parliament, the Council, the European Social and Economic Committee and the Committee of the Regions (2020), p. 12.

3. Digital Trends in the European Union

It is no longer a surprise for anyone that the European Union is one of the biggest actors worldwide that encourage and invest in digitalisation. Starting with the Digital Single Market initiative and going further into public, joint and private investments into digitalisation, the European Union aims to become the biggest player on the market when it comes to the new digital. There is not one year that goes by that the Commission does not issue a plan, recommendations or opinions pertaining to climate change and the necessity of the adaption of our entire perspective of everything that we do, alongside its Annual Sustainable Growth Strategy. Especially the new president of the Commission has submitted several proposals in order to

implement the concept of European Green Deal, among which drafting a sustainable Europe investment plan, the partial transformation of the European investment bank into a climate bank, as well as the development of a new industrial policy for Europe.

Just last year, the Commission issued recommendations adapted specifically to each country that refer to both the climate changes that have occurred as well as to the adaptation and control measures for the COVID-19 pandemic: it has once more underlined "the four dimensions of environmental sustainability, productivity, fairness and macroeconomic stability" that were first enunciated in the 2020 Annual Sustainable Growth Strategy. Furthermore, the commission stated that these principles were to become guidelines for the Member States' recovery and resilience plans. In accordance to the European policy, the four principles stated above must be "the heart of the European Semester" and are the ones that are going to lead to the best outcome for both the population and the planet (European Commission, 2021).

In the same report, the Commission underlined that digitalisation is the key to strengthening the social and economic resilience of the European Union, in its whole as well as the Member States'. Although the pandemic has touched and tested the entire world, it has also brought a desire to invest into digitalisation of the social and economic culture: online courses and schooling globally, small and medium businesses that have also extended or created their market digitally, creation of new services that provide for new needs of the customers, evolution of online finance, administration and much more. However, there is still room for improvement this area, as this pandemic has also shown the fragility of the system and most of its flaws: uneven access to infrastructure or means of communication, lack of training, the dependence on larger structures in order to provide a specific service. One might add, that in the context of the fast-forwarded digitalisation, an issue pertaining to the safety of the users should be stressed out: this lack of training as well as the lack of transition will cause problems in the operation of the data, as well as raise a number of issues for the users who might in the process waive their rights or their protection.

In order to help the digitalisation of European member states, public authorities alongside attracting European funds will also have to invest their own resources – given the weight of the European budget in the funds that circulate throughout the old continent, the investments should be backed up by both Member States as well as private companies of all sectors. Some authors (Claeys et al., 2019) have pointed out that in order to make a difference on the climate change impact, the investments in digitalisation cannot happen without investing in research and development of new technologies, especially those that concern capture and storage of carbon. In their view, public authorities need to show commitment to this goal in order to increase credibility among the private sector: first by increasing the reliability of climate change and mitigation implementation instruments, and second, maybe more importantly, reducing the regulatory risk. Moreover, we rally to the opinion that the public sector should also stand for the potential losses that might occur in case of economic sideslip caused by regulations pertaining to climate change. In other words, we consider that for this project to be successful, the European Union as well as the Member States need to involve private investors in the digitalisation process,

as well as make them invest in this strategy – but how may one be convinced if the resources allocated by their own state will not be sufficient, or, the policies would not be sufficiently concretely drafted or sent for implementation?

The guidelines that the European Union provided in its rapport include the spending of funds, improvement of connectivity, development of digital skills and innovation. Therefore, in the matter of funding, the Commission underlines that through the recovery and resilience facility granted to all Member States, the latter should use these funds in order to encourage digital transformation in all economic and social sectors, including public service; thus, each plan should include a minimum the level of 20% of expenditure related to digital. In relation to improving the connectivity, the European Union points out that it needs to be done on all levels: facilitating the incrementation of 5G and Gigabit technologies, in both urban and rural communities, thus providing the necessary infrastructure for all sectors including agriculture, transportation, health and education. Concerning the development of digital skills, it should be done at all levels in order to ensure that all the citizens can benefit and take advantage of the digital transition; this may be done by ensuring equal access to all parties, including those already in the labour market, to basic and higher education trainings, to digital infrastructure and skills, the aim being to digitalise administration and justice and thus improve the communication between state institutions and persons. Finally, yet importantly, the innovation sector is one that one must pay regard to: while the European Union has the ambition to become competitive in all areas pertaining to technology as well as digitalisation, it is also aware that it needs reform as well as investment in all areas linked to the security both online and off-line, electronics manufacturing of the components, new means of stocking information, and overall increasing the productivity in addition to increasing the means to produce and the intellectual property linked thereto (European Commission, 2021).

In order to achieve the objective of a climate neutral Europe, the European Commission has come up at the beginning of this year with ten new European Partnerships, bringing the Union, the Members States as well as private or public investors together.

As far as we are concerned, out of the ten propositions, at least two of them involve the development of the digital world: key digital technologies and smart networks and services. Concerning the first one, one should point that it encompasses the manufacture and design of electronic components in systems, as well as the development of software that will define how they work. In our opinion, one of the main elements that needs to be taken into account when speaking about the digitalisation is the creation of adaptive and adapted software that will allow for a more universal and easy use. The second one aims to support smart networks and services, to promote the 5G technology and the Cybersecurity Strategy. The 5G technologies should enable the setting up of the connectivity infrastructure necessary for the digital transformation as of 2020 and comprehensive deployment in urban areas and major transport paths by 2025, setting the goal for access to mobile data connectivity also in rural and remote areas (European Commission, 2020). The

Commission is already investing in the development of a 6G network that would even more facilitate communications throughout the Union. Thus, they are proposing a joint undertaking on smart networks and services that would provide for Europe's status as a world leader in research and development as well as establish its position as a global player in cutting edge technology. The Cybersecurity Strategy, aims to reform the current NIS (Network of Information Systems) through a Directive that will lay out the foundation for more specific roles that will benefit to all sectors, but most of all to the ones that are of strategic importance such as the sectors of energy, transportation or health. The European Commission has also announced the will to reform previous legislation on the matter in order to be consistent with the Security Union Strategy 2020 to 2025, consequently announcing further changes in these sectors (at least) and giving major actors reasons of concern (European Commission, 2020). It was proven that several actors have had difficulties to adapt to the security measures imposed up to now, the major players in the industry being the ones that benefited overall from the changes, as they are able to allocate many more resources in order to fully and in due time comply, leaving the smaller actors no choice but to ask for supply agreements from the first. This might, on a medium or long term, pose problems towards oligopoly set on the market as well as competition clauses.

This being said, there are new steps to be made as well as new errors that will need correction, that shall be identified over time. The first steps were taken by the European Union in implementing joint undertakings in several sectors, in accordance with the provisions of article 187 of the Treaty of the Functioning of the European Union. Concerning the joint undertakings in the digital sector, we must first cite the already existing undertaking the European High Performance Computing (EuroHPC), created in 2018, which aims to help several sectors develop using supercomputers located throughout Europe. It is also worth mentioning that concerning the two undertakings mentioned above, the Key Digital Technologies Joint Undertaking and the Smart Networks and Services Joint Undertaking, the Commission has proposed a new Regulation this year, which aims to establish the Joint Undertakings under Horizon Europe, in its 3rd article. If voted, the undertakings will be set up until the 31st of December 2031.

4. Obstacles to Achieving a Digital and Green Europe

While the Commission is certainly aware of the fact that the digital era will touch all the sectors, from health to innovation, from public service to the private sector and will touch the entire population of the European Union, one should note that the transition will not be easy, nor smooth. The implementation will be even more difficult if the public sector fails to align with the private one. As the concept of e-governance has evolved, it is now difficult to provide a definition that would incorporate all of the elements that this concept entails. Literature has pointed out that it is common understanding that the concept of e-government incorporates the use of information and communication technologies, in order to allow from all points of view (economic, social, material), a more efficient access and delivery of public services and information to the general public, namely businesses, non-profit

organisations, governmental entities, or natural persons (Reddick, 2010). In the light of what was described above, we would like to add to this definition that it also provides for a much cleaner environment.

From our point of view, what authorities need to tackle with priority is investing in the infrastructure in order to allow for larger number of citizens to have access to these facilities as well as invest in training programs that will allow for nationals to understand how and why they should gain access to these facilities. A recent study has shown that a prerequisite for e-government to work is access to internet and devices linked to its use, is not yet a given – thus, 10% and 15% of the population in urban and rural areas, respectively, do not use or have access to the internet, while only almost 80% of the urban population uses internet daily (Lytras, Şerban, 2020). This just shows that the best intentions are not enough when it comes to modifying or altering someone's lifestyle – we point out that even though digitalisation is needed in order to achieve several of the European Union's goals it should not be taken for granted or considered easy. Furthermore, the same study aims to show that in 2018, persons mainly used the internet only to look for information on the public authorities' websites, which does not count for the efficiency of e-government services, which tend to focus on actually submitting or downloading state official forms off the websites. It further shows that the lowest interactions were recorded in the South-Eastern European Countries, as they link this to the lack of the digital skills of the population (Lytras, Şerban, 2020). We consider that even more important steps are left to be taken in order to achieve the objectives of the European Union. We could add, as a personal observation, that South-Eastern European countries also need to develop the skills of the public servants in order to enable them to facilitate the access to these technologies for persons who do not possess the skills needed in order to perform certain operations.

Some remain reserved: in the light of the Commission's promise to explore and exploit digital technologies including artificial intelligence, 6G, cloud and edge technologies in order to maximise the impact of the above mentioned policies that aim for a greedy Europe, they point out that a number of studies show that the ecological footprint of digitalisation and its transition is even greater, providing for the acceleration of the consumption of materials and transport flows (Laurent, 2020).

Others consider that in order for this policy to be accepted by the Member States as well as the European population, it needs to bring a new era for the industry and ensure long term growth and jobs, for the entire internal market; the two solutions that need to be combined are greater and smarter investments that translate into shift from the sectors in which Europe already excels to sectors in which it is deficient: as such, Europe needs to focus less on sectors such as automobiles and pharma, and bring their attention to the electronics and digital sectors in which it is still deficient. Therefore, investments in research and development are needed in order to evolve and create clean energy, transportation and building (Claeys et al., 2019).

Literature has pointed out the dangers that digitalisation would bring for the labour market a while ago, stating that it would impact job creation, change, destruction in some case as well as shifting towards requirements and competences

that are different from the ones that we know today (Degryse, 2016). We add that in order to make these changes efficient, one should complete the university and scholar programs in accordance with the demands of employers that need to get a straight and clear guideline from the authorities. Other authors have pointed out that some sectors, such as the accounting one, might not benefit from a uniformized application of the rules, through digitalisation: in accordance with the standards imposed by the regulatory boards on the matter, practice allowed for different reporting in accordance to the tailored needs of the client, which would no longer be possible through digitalisation (Rowbottom et al., 2021).

It needs to be underlined that whilst doing everything in order to mitigate and minimise the effects of climate changes, the European Union reported in 2021 losses of €12 billion per year related to extreme weather changes losses. The Member States also need to prepare for the consequences of climate change, in parallel with the adoption of the rules and regulations that are aimed to fight it. As such, the objective of Europe to become climate neutral by 2050 is accompanied by the Commissions European climate law that aims to transform Member States government promises into legally binding obligations, which may seem to some as an unrealistic objective. However, given the current Commission's determination, we could actually foresee a good outcome.

5. Conclusions

Climate change is a global challenge that requires a responsible approach, taking concrete action at international, regional, national and local levels. A realistic approach to this phenomenon requires the cooperation of all international actors in order to identify the optimal courses of action, the necessary tools to stop the rise in global temperature. As such, the European Unions' approach was thus far to invest in new and developing technologies that would allow for the old continent to become not only climate neutral but also a global leader on the matter. The encouragement of the private sector to participate to this change is obvious and supported by the joint undertakings' initiatives.

The new package on the 2030 Framework for Energy and Climate Change launched by the European Commission in January 2014 is a continuation of the 2020 package, based on the experience gained from its provisions. The 2030 framework is also part of the long-term perspective of EU policy with a 2050 horizon, in line with the Commission's vision in the "Roadmap for the transition to a low-carbon economy by 2050", "The Roadmap for the 2050 energy on the horizon 2050" and the White Paper on transport. The Horizon policy also refers to the digitalisation of the Community, in as far as it aims to implement several projects that are linked to the digital transition.

The Commission's proposal for the first European climate law aimed to transpose into law the goal set out in the European Green Pact, namely to achieve climate neutrality by the European economy and society by 2050. In other words, all EU countries will have to aim for zero greenhouse gas emissions, mainly by reducing emissions, investing in green technologies and protecting the natural environment.

Therefore, the recently adopted law will ensure that all EU policies contribute to this goal and that all sectors of the economy and society are involved in this endeavour. The Commission aims to tackle the issue in a similar manner pertaining to the digitalisation of the Member States' economies and administrations.

However, doubts remain concerning the efficiency and final outcome of the policies followed by the Union: up until an analysis can be conducted pertaining to their efficiency, and as long as different sectors will have more or less difficulties adapting to the required changes, we may not affirm the success or failure of the actions.

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