Mihaela Tofan
Irina Bilan
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(editors)

EUFIRE-RE 2024

European Financial Resilience and Regulation

25 Years United under Euro

EDITURA UNIVERSITĂȚII „ALEXANDRU IOAN CUZA” DIN IAȘI

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ETHICS OF THE FINANCIAL SERVICES – RELATIONSHIP BETWEEN HEALTH STAKEHOLDERS

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Abstract
Ethics of financial services in the field of health compliance with ethical principles in the management of finances and financial services within the health system involve transparency and integrity in billing processes, ensuring equitable access to medical services, and avoiding fraudulent or abusive behaviour. It also involves respecting the confidentiality of patients' financial and medical information, as well as avoiding discriminatory practices regarding access to medical services based on the patient's financial status. Ethical practices in the field of health financial services can contribute to increasing the trust of patients in the medical system, protecting their rights, and ensuring a fair distribution of resources in the health system.
Through a comprehensive analysis of ethical considerations, this study aims to shed light on the importance of upholding moral principles in the provision of financial services in the health sector. By thoroughly examining existing research and academic articles, a clearer understanding of the ethical considerations and standards in this specialized sector can be gained. This review not only helps to recognize the current landscape of ethical practices, but also sheds light on potential areas for improvement and further ethical development.
Keywords: *ethics; financial services; health; principles.*
JEL Classification: H75, I18.

1. INTRODUCTION

The ethics of financial services in the field of healthcare means the observance of ethical principles in the management of finances and financial services within the healthcare system. This involves transparency and integrity in billing processes, ensuring equitable access to medical services and avoiding fraudulent or abusive behaviour. It also involves respecting the confidentiality of patients' financial and medical information and avoiding discriminatory practices

regarding access to medical services based on the patient's financial status. Ethical practices in the field of health financial services can contribute to increasing the trust of patients in the medical system, protecting their rights and ensuring a fair distribution of resources in the health system.

The purpose of this paper is to recognize and highlight the main ethical practices in health financial services. In healthcare, where financial decisions can have a direct impact on individuals' well-being, adherence to a strict code of ethics is paramount. By defining and scoping these ethical services, professionals involved in the promotion of financial health services can ensure transparency, accountability and integrity in their interactions with patients and stakeholders.

Through a comprehensive analysis of ethical considerations, this study aims to shed light on the importance of upholding moral principles in the provision of financial services in the health sector. By reviewing existing research and scholarly articles, clarification can be obtained regarding ethical standards in this sector. This review not only helps to recognize the current environment of ethical practices, but also sheds light on potential areas for growth and further ethical development.

By exploring and analysing different sources, a complete perspective on the ethical framework governing financial services in the health sector can be established, providing valuable insights to practitioners, policy makers and stakeholders alike, possibly resulting in the proposal of ethical best practices to adapt financial services.

2. MAIN ETHICAL IMPLICATIONS OF STAKEHOLDERS

Stakeholders can collaborate effectively to ensure compliance with ethical standards in the provision and financial services of the medical sector through active participation in decision-making processes, stability and implementation of clear policies and procedures, as well as through constant monitoring and evaluation of practices in the field. Also, open and honest communication between all the insured parties involved plays a special role in an ethical and responsible approach to the management of health care finances.

The main obstacles faced by stakeholders in the process of ensuring compliance with ethical standards in the provision of financial services include the lack of clear regulations and adequate monitoring and reporting mechanisms, fierce competition that can lead to ethical compromises, and the lack of widespread awareness of importance of the ethical aspects in financial decisions. These obstacles can be overcome by greater transparency and accountability from all parties involved, by implementing clear ethical standards and by promoting an organizational culture oriented towards integrity and respect for all involved.

Ethical education of stakeholders regarding health financial services is one of the fundamental aspects in ensuring a sustainable and responsible practice in the medical sector. Through a deep understanding of the concepts of ethics and social responsibility, stakeholders can contribute to the promotion of high standards in the provision and access of financial services in the healthcare field. This approach not only strengthens trust and transparency in the relationships between all parties involved, but also builds a solid foundation for effective collaboration for the mutual benefit of patients and the entire community (Craig *et al*., 2017).

One of the main obstacles that stakeholders face in ensuring compliance with standards and the provision of financial services in the health field is the confluence of financial and medical interests, which can generate conflicts of interest and inappropriate prioritization. This aspect can be overcome by implementing transparency and accountability mechanisms, which ensure a balanced and ethical management of the financial resources intended for medical services. Also, the lack of effective communication between different stakeholders and different interpretations of ethical standards can constitute an impediment in ensuring effective collaboration in this regard (Kesselheim and Maisel, 2010).

Healthcare professionals and administrators can work together effectively to foster a culture of financial ethics in a healthcare setting by first establishing clear and comprehensive guidelines for financial decision-making. Through the area of open communication and the encouragement of transparency, all members of the promotion team can be actively involved in meeting ethical standards. Regular training sessions and workshops on financial ethics can further raise awareness and foster a shared understanding of the ethical importance of financial management. Additionally, creating mechanisms to report any unethical behaviour or concerns in a confidential and supportive manner can help strengthen accountability and integrity at all levels of the organization.

3. LITERATURE REVIEW

There are numerous published articles and studies addressing the issue of financial ethics in health care. These can be found in academic journals specializing in health or health management.

Also, organizations such as the World Health Organization (WHO) and the Organization for Economic Cooperation and Development (OECD) publish reports and guidelines that include issues related to financial ethics in medical services (European Commission, 2021). It is advisable to consult academic databases such as PubMed or Google Scholar to find relevant studies in this area.

"The key is collaboration" says James Grigg, as financial leader, in an article written in 2019 by Laura Ramos Hegwer based on several interviews (Hegwer, 2019). At University Hospitals of Cleveland, clinical and financial coordinators collaborate and work in high-trust, high-professional teams to reduce disparities in care and eliminate waste in certain healthcare services. Although some investments may have low financial returns, they are the right choice to meet the needs of the community. Grigg also supports the idea that financial leaders are encouraged to collaborate with professionals in efforts to combat waste and abuse (Hegwer, 2019). But some CFOs feel they are pushing their limits as they grapple with strategies that could impact how doctors prescribe drugs, choose implants and order various tests. Szubski, as a participant in the same interviews, believes and specifies in the same article that financial managers have an ethical obligation to help doctors understand the cost structure of the medical services they provide to patients (Hegwer, 2019).

Based on recent articles and studies from reputable sources on the Internet, the topic of financial ethics in healthcare has attracted significant attention. With the rising costs of medical services and an increased focus on transparency and accountability, maintaining ethical standards in financial practices within healthcare institutions has become paramount. A study published in The Journal of Medical Ethics by Maharaj and Paul in 2011 highlighted the importance of ensuring that financial incentives do not compromise the quality of patient care or lead to unnecessary medical procedures. Additionally, an article in The New England Journal of Medicine (Manríquez Roa and Biller-Andorno, 2022) highlighted the need to implement clear guidelines and regulations to prevent conflicts of interest and promote fairness in financial transactions in the healthcare industry. As organizations strive to navigate the complex environment of health care financing, ethical considerations must remain at the forefront to support patient trust and well-being.

As part of the comprehensive examination of ethical considerations related to financial practices in health care services, a rigorous literature review is imperative. Current research requires careful analysis of current academic perspectives, regulatory frameworks and case studies to uncover diverse views and attitudes (Gheaus and Wild, 2016).

By delving into the relevant academic works of authors such as Sulmasy (2016), Rosenthal and Reich (2014), Anton, Gavrilovici and Oprea (2013), this study aims to synthesize divergent points of view and critically evaluate the implications and financial decision making in the medical field. By examining budget allocation options and the existence of financial procedures, this review aspires to provide a comprehensive overview of the ethical dilemmas inherent in balancing financial viability with medical ethics.

Sulmasy (2016) proposes a series of regulatory measures to support ethical financial practices in the health sector. The study underscores the importance of

implementing strict transparency protocols to monitor financial procedures, ensuring that health institutions prioritize patient welfare over profit maximization (Sulmasy, 2016). Medical institutions can find a balance between financial sustainability and ethical considerations by implementing measures that prioritize patient well-being and fiscal responsibility simultaneously. By adhering to the newly proposed regulatory and policy measures institutions can ensure that financial decisions are taken into account with ethical considerations such as transparency, accountability and avoiding conflicts of interest. These measures promote a culture of integrity and responsible financial management, ultimately contributing to both the institution's long-term financial sustainability and the ethical delivery of health care services (Rosenthal and Reich, 2014).

In addition, Nelson and Acosta (2024), in the article published in March 2024, pleaded for the establishment of the independent supervisory committee composed of multidisciplinary experts, to oversee the financial decision-making processes and mitigate potential conflicts of interest. By promoting a culture of accountability and adherence to ethical guidelines, these regulatory measures are poised to strengthen the integrity of financial practices in medical institutions (Nelson and Acosta, 2024).

Allocating financial resources according to the health needs of the population is a complex task, full of practical and ethical dilemmas. The study carried out by Anton, Gavrilovici and Oprea (2013) aims to evaluate the use of equity criteria for the allocation of resources in public hospitals in Romania, revealing that the current allocation methods contribute to increasing inequalities between those involved. In health services, the focus on ethics and equity is on the distribution of health care among different categories of individuals, including the geographical distribution of resources, the use of services by those with equal needs in different socio-economic groups.

Macro-equity refers to aspects of the distribution of finances rather than to patients and the decisions that lead to the allocation of resources among different groups. At the micro level, according to the authors, it is the physician's duty to use available resources in ways considered optimal for patients, in accordance with requirements and respecting ethical principles (Mitchell, Agle and Wood, 1997). Horizontal equity requires equal treatment for those of equal merit, while vertical equity requires more favourable treatment for those of greater merit (Clements, Coady and Gupta, 2012).

The ethical question that Anton, Gavrilovici and Oprea (2013) is referring to is whether healthcare is one of the goods and services in the reward system or not. Most evidence suggests that most countries have rejected the "reward" approach to healthcare. The problems in the hospital sector in Romania, identified through a situational analysis by the Presidential Commission, can be grouped into three major categories: the lack of a coherent classification of hospital services that leads to high and often unjustified expenses; faulty,

centralized management with minimal involvement of local authorities; the absence of mechanisms to ensure the quality of medical assistance and the continuity of care. The financing of medical services in Romania is affected by severe ethical constraints, a fact acknowledged even by the authorities. In 2010, the Ministry of Health stated that "currently, in Romania, hospital financing is somewhat incorrect, it suffers from a degree of impropriety, hospitals of the same competence but from different fields receiving different funds". The solutions proposed by the authors include the diversification and use of new methods of financing hospital services based on the performance and quality of the services offered to patients; the development of new models of health management but also ethical management, which guarantee continuity of care under therapeutic effectiveness and economic efficiency.

Healthcare institutions can effectively integrate ethical considerations into financial decision-making processes without financial compromises by implementing sound governance structures, promoting a culture of transparency, and leveraging ethical principles in decision-making (Muhlbacher and Kaczynski, 2016; Beauchamp and Childress, 2019). By establishing clear policies and procedures that emphasize ethical standards and accountability, institutions can ensure that financial decisions are aligned with ethical principles, both from their point of view and from their stakeholders' point of view. In addition, promoting open communication and dialogue around financial issues can help identify potential ethical concerns and proactively address them. The use of ethical standards, such as those presented by Paganelli, Rasmussen, and Smith (2018), can provide a structured approach to evaluating financial decisions from an ethical perspective, ensuring that the institution fulfils its ethical responsibilities while maintaining financial sustainability.

Stakeholder ethics in health care involves a meticulous investigation of the many perspectives and theories that address the relationships between various stakeholders in the health care industry. In researching this topic, key options such as stakeholder engagement theory, ethical approaches in health management, and the impact of ethical decisions on the medical environment are often highlighted. Various studies, such as those by Freeman (2010), Freeman and Evan (1990) provide a deep insight into the importance of stakeholder ethics, emphasizing the need for balance between the interests of the various groups involved in health.

The *EU4Health programme 2021-2027 – a vision for a healthier European Union* (European Commission) is an ambitious initiative of the European Union which aims to strengthen health systems in Europe through funding and policies aimed at improving access to quality healthcare. With a budget of more than €5 billion, it is the largest EU-funded health program ever, aiming to address both immediate health crises and long-term challenges. The program addresses ethical issues related to the allocation of resources and financing of public

health, emphasizing the importance of transparency and equity in the distribution of funds. The program provides financial support through grants, procurement and other EU funding. Notable funding assignments include:

- Minimum 20% for health promotion and disease prevention;
- Up to 12.5% on purchases to top up domestic storage;
- Up to 12.5% for global health initiatives;
- Up to 8% for administrative expenses;

Funding opportunities are available to various entities, including EU Member States, Associated Third Countries, Health Organizations and NGOs. The Health and Digital Executive Agency (HaDEA) is responsible for the implementation of the program and the management of the funding calls.

Compliance with ethical norms by all those involved in medical services is an essential task in understanding the ethical impact of decisions and actions undertaken by all those involved in the medical system. Recent studies reveal that the ethical implications in the context of health stakeholders are of overwhelming importance for maintaining the ethical and professional integrity of the medical professions, as ethical dilemmas can affect the quality of medical services provided and the relationships between the various stakeholders.

4. CONCLUSIONS AND PROPOSALS

The main aspects of stakeholder ethics in the field of health highlighted in the literature include responsibility towards patients, the balance between financial and ethical needs of medical institutions, as well as the involvement of decision-makers in promoting ethical and transparent medical practices. These aspects underline the importance of establishing clear ethical standards and their compliance in medical activity.

By establishing clear policies and procedures that emphasize ethical standards and accountability, institutions can ensure that financial decisions are aligned with ethical principles, both from their point of view and from their stakeholders' point of view. These policies are based on:

1. Implementation of a detailed and specific ethical code

Institutions should develop and adopt a detailed and finance-specific code of ethics that outlines the organization's values and principles. This code should cover all aspects of the financial activity, including transparency, integrity and accountability. It is critical that employees are educated about this code and encouraged to follow it in all their financial decisions.

2. Establishing procedures for evaluating ethical risks

Institutions must establish clear procedures for evaluating ethical risks associated with financial decisions. These procedures should include periodic evaluations of financial practices and analysis of their impact on all interested parties (stakeholders). A financial ethics committee may be created to oversee

these assessments and ensure that financial policies are in line with the institution's ethical standards.

3. Creating a mechanism for reporting and protecting whistleblowers

It is important that institutions put in place a secure and confidential mechanism for reporting unethical behaviour or financial irregularities. This mechanism should include whistleblowers protections to encourage employees to report any wrongdoing without fear of retaliation. The information collected through this mechanism should be rigorously analysed and used to improve the policies and procedures of the institution.

4. Ongoing training and ethical oversight

Institutions should invest in continuous training of employees in the area of financial ethics and responsibility. These training sessions should be mandatory and include case studies, simulations and interactive discussions to help employees understand the importance of integrity in financial decisions. In addition, institutions should implement a system of continuous surveillance to monitor compliance with ethics policies and take prompt corrective action when necessary.

Training programs and educational initiatives play a crucial role in increasing awareness and understanding of financial ethics among healthcare professionals and administrators. These initiatives can include interactive workshops, case studies and simulations that illustrate real-life ethical dilemmas and provide practical guidance for navigating them. Additionally, incorporating ethical principles and scenarios into professional development courses and continuing education sessions can help instill a strong ethical foundation in the health care workforce.

Proposals for good ethical practices in the field of financial services in the medical sector could be:

a) Providing accurate and transparent information to patients and ensuring that they understand their costs and payment options.
b) Avoidance of conflicts of interest and fraudulent practices with respect to billing and rates.
c) Implementation of a system of control and monitoring of financial activities to prevent fraud and abuse.
d) Collaboration with the competent authorities in the financial field for compliance with the legal regulations and standards in force.
e) Promoting an organizational culture based on ethics and integrity with regard to financial and accounting aspects.

In healthcare, the formulation of financial services ethics strategies is of paramount importance. Care must be taken to balance the imperative to provide quality patient care with the need to maintain financial viability. To navigate this complex landscape, healthcare facilities must establish robust policies and protocols that support integrity, transparency and accountability in all financial

transactions. By prioritizing ethical standards in the provision of financial services, healthcare organizations can protect their reputation, build trust with stakeholders and ultimately contribute to the goal.

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REVEALED COMPARATIVE ADVANTAGE INDEX: TRADE BETWEEN THE EU AND TÜRKIYE FOR ALL PRODUCT

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Abstract
This study delves into the dynamics of trade between the European Union (EU) and Türkiye, employing the Revealed Comparative Advantage (RCA) theory as its analytical framework Focusing on the period from the fourth quarter of 2022 to the fourth quarter of 2023, the research offers a comprehensive analysis of bilateral trade relations at the All Product level. During the specified timeframe, the EU and Türkiye have navigated a multitude of economic and geopolitical factors, influencing the nature and patterns of their trade interactions. Against this backdrop, the RCA theory provides a valuable lens for understanding the comparative advantages each party possesses in their trade relationship. Through rigorous analysis of All Product level data, this study examines the trade flows, export structures, and comparative advantage indices of both the EU and Türkiye across various sectors and product categories. By calculating revealed comparative advantage indices, the research identifies the specific sectors where each party demonstrates a comparative advantage in trade. The findings of this study shed light on the intricacies of trade dynamics between the EU and Türkiye. Analysis at the All Product level offers a comprehensive understanding of the evolving specialization patterns and changes in comparative advantages over the specified period. Moreover, the research explores the implications of these findings for future trade relations between the EU and Türkiye. This research contributes significantly to the literature on EU-Türkiye trade relations by offering a detailed analysis based on All Product level data. The insights derived from this study hold valuable implications for policymakers, economists, and stakeholders involved in shaping the trajectory of bilateral trade cooperation and integration between the EU and Türkiye.
Keywords: *production; custom union; EU; Türkiye.*
JEL Classification: F10, F00.

1. INTRODUCTION

There are various methods for determining the product in which a country is competitive in foreign trade. In the following years, Balassa's (1965) Theory of Explained Comparative Advantage was developed and became one of the most frequently used methods explaining international competitiveness with foreign trade indicators. In the second part of this study, a literature review of

the Theory of Revealed Comparative Advantage for the world is presented. In the third part of the study, the methodological infrastructure of the Theory of Revealed Comparative Advantage, the data set and variables used are explained. In the following section, the results of the analysis of the European Union economy for the period 2022Q4-2023Q4 are shown and interpreted. The last part of the study contains general conclusions on the subject.

2. HISTORY OF THE CUSTOMS UNION AGREEMENT

The Customs Union Agreement is an agreement signed between Türkiye and the European Economic Community (EEC) in 1964. Also known as the Ankara Agreement, the Customs Union Agreement came into effect on December 1, 1964. Its aim is to strengthen commercial and economic relations to facilitate rapid development of the Turkish economy and improve the living conditions of the Turkish people. The agreement envisaged the integration of Türkiye into the EEC in three phases:

- Preparation Phase: Starting on December 1, 1964, Türkiye did not undertake any obligations during this phase.
- Transition Phase: Began with the Additional Protocol that came into effect in 1973. This phase aimed at the free movement of industrial and agricultural products and the completion of the Customs Union.
- Final Phase: Started on January 1, 1996. During this phase, Türkiye eliminated customs duties with the EEC and adopted the EEC's Common Customs Tariff for other countries.

The Customs Union not only involves the abolition of customs duties but also the obligation to harmonize with Community legislation in areas such as competition policy, intellectual and industrial property rights. This agreement is an important step towards Türkiye's integration into Europe and aims to strengthen economic relations.

The Customs Union Agreement signed between Türkiye and the European Union (EU) in 1996 has had various effects on the Turkish economy. Until 2023, the impacts of this agreement on the EU economy can be summarized as follows:

Benefits:

- Increased Trade: The Customs Union has facilitated increased trade between Türkiye and the EU, allowing Turkish products easier access to EU markets (Özdemir and Koç Aytekin**,** 2016).
- Encouragement of Investments: The agreement has encouraged investments from EU countries into Türkiye, contributing to economic growth (Directorate for EU Affairs**,** 2024).
- Enhanced Competitiveness: Turkish companies have expanded into larger markets, improving their technological infrastructure and reducing costs, thus enhancing their competitiveness.

Challenges:

- Competition Pressure: The free trade with the EU has increased competition in certain Turkish sectors, posing challenges for local producers (Özdemir and Koç Aytekin**,** 2016).
- Trade Imbalances: At times, trade imbalances have occurred in Türkiye's trade with the EU, leading to economic disparities.
- Harmonization Process: Adapting to EU regulations has been demanding for some sectors in Türkiye, resulting in additional costs (Directorate for EU Affairs; 2024).

3. LITERATURE REVIEW

Tuerxun and Adıgüzel (2017) aimed to analyse China's global competitiveness between 2006 and 2015 and used the method of Explained Comparative Advantage. In the study, China's foreign trade data were obtained from the TradeMap website and the ECI values of 97 chapters in the Harmonised System were calculated. According to the findings obtained, the researchers inferred that 46 chapters were competitive, 27 chapters were not competitive and 24 chapters were borderline in terms of competitiveness.

In the study conducted by Erkan and Batbaylı (2017), it is aimed to reveal the comparative advantages and competitiveness of the Organization of the Black Sea Economic Cooperation (BSEC) member countries in global markets. In the study, Explained Comparative Advantages (Balassa Index and Vollrath Index) were used. The findings of the study show that the BSEC countries have strong comparative advantages in the exports of raw materials and labour-intensive products in international markets.

Erkan *et al.* (2015), Türkiye's comparative advantage in vegetable exports in the world markets between 1993 and 2012 was measured with the help of the Index of Revealed Comparative Advantage. According to the results of the study, it was found that Türkiye has a significant comparative advantage in exports of vegetables and subgroups in global markets, however, these advantages have relatively decreased in recent years.

In his study, Ardıç (2017) calculated the Explained Comparative Advantage Index for Türkiye's export sectors between 2005 and 2016. According to the results of the research, it was determined that the country has comparative advantage in exports in the chapters of plant products, food industry products, textile products, glass and glassware, metals, vehicles.

4. METHODOLOGY AND DATA SET

In our study, the Explained Comparative Advantage Index was used. The idea of Explained Comparative Advantage was first put forward by Liesner (1958). The index, which was created to compare the competitiveness of the UK with the Common Market Countries, was operationalized by Balassa (1965).

The Balassa Index aims to explain whether there is an apparent advantage difference between countries without going into the cause of comparative advantage. The Balassa index compares a country's domestic specializations in a good with the world's specialization.

Here, RCAI shows the announced comparative advantage index of country j for good i.

$$\left(\mathrm{RCAI} = \frac{X_{ij}/X_j}{X_{iW}/X_w}\right) \quad (1)$$

For equation (1) result:

- RCAI>1 indicates that country j has a comparative advantage in good i. That is, the share of that good in the country's total exports is larger than its share in world trade.
- If RCAI<1, it means that there is a comparative disadvantage in that good.

In this section, the results of the analysis of the European Union economy for the period 2022Q4-2023Q4 are shown and interpreted. The last part of the study contains general conclusions on the subject.

5. ANALYSIS RESULTS

In the data set, competitive advantage was calculated in 3 different categories in the calculations made for the periods considered from the production structure consisting of 99 subgroups. As shown in Table 2, 30 different products with RCAI values between 1 and 2 were found. When we look at these products, we see that industrial goods are predominantly included. In the second category, there are 4 different products with RCAI values between 2 and 3. These products are Iron and steel, Aircraft, spacecraft, and parts thereof, Tanning or dyeing extracts; tannins and their derivatives, Man-made filaments. In the last category, the groups of goods with an RCAI value greater than 3 in comparative competitive advantage are as follows; Man-made staple fibres, Wool, fine or coarse animal hair and Cotton.

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Appendix

Table 1. Product Label

All products
Vehicles other than railway or tramway rolling stock, and parts and accessories thereof
Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof
Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ...
Iron and steel
Plastics and articles thereof
Aircraft, spacecraft, and parts thereof
Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical ...
Pharmaceutical products
Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral ...
Organic chemicals
Miscellaneous chemical products
Articles of iron or steel
Paper and paperboard; articles of paper pulp, of paper or of paperboard
Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...
Rubber and articles thereof
Essential oils and resinoids; perfumery, cosmetic or toilet preparations
Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring ...
Aluminium and articles thereof
Articles of apparel and clothing accessories, not knitted or crocheted
Soap, organic surface-active agents, washing preparations, lubricating preparations, artificial ...
Commodities not elsewhere specified

All products
Copper and articles thereof
Footwear, gaiters and the like; parts of such articles
Beverages, spirits and vinegar
Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, ...
Articles of apparel and clothing accessories, knitted or crocheted
Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; ...
Miscellaneous articles of base metal
Miscellaneous edible preparations
Glass and glassware
Ships, boats and floating structures
Residues and waste from the food industries; prepared animal fodder
Tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal
Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles ...
Pulp of wood or of other fibrous cellulosic material; recovered (waste and scrap) paper or ...
Albuminoidal substances; modified starches; glues; enzymes
Tobacco and manufactured tobacco substitutes; products, whether or not containing nicotine, ...
Cocoa and cocoa preparations
Man-made staple fibres
Live animals
Articles of stone, plaster, cement, asbestos, mica or similar materials
Meat and edible meat offal
Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable ...
Man-made filaments; strip and the like of man-made textile materials
Wood and articles of wood; wood charcoal
Preparations of cereals, flour, starch or milk; pastrycooks' products
Wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables and articles thereof
Wool, fine or coarse animal hair; horsehair yarn and woven fabric
Miscellaneous manufactured articles
Ores, slag and ash
Salt; sulphur; earths and stone; plastering materials, lime and cement
Toys, games and sports requisites; parts and accessories thereof
Ceramic products
Zinc and articles thereof

All products
Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal ...
Products of the milling industry; malt; starches; inulin; wheat gluten
Coffee, tea, maté and spices
Railway or tramway locomotives, rolling stock and parts thereof; railway or tramway track fixtures ...
Cotton
Other base metals; cermets; articles thereof
Printed books, newspapers, pictures and other products of the printing industry; manuscripts, ...
Other made-up textile articles; sets; worn clothing and worn textile articles; rags
Knitted or crocheted fabrics
Raw hides and skins (other than furskins) and leather
Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere ...
Fertilisers
Nickel and articles thereof
Sugars and sugar confectionery
Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery
Photographic or cinematographic goods
Clocks and watches and parts thereof
Animal, vegetable or microbial fats and oils and their cleavage products; prepared edible fats; ...
Lead and articles thereof
Fish and crustaceans, molluscs and other aquatic invertebrates
Arms and ammunition; parts and accessories thereof
Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage
Carpets and other textile floor coverings
Preparations of vegetables, fruit, nuts or other parts of plants
Headgear and parts thereof
Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn
Edible fruit and nuts; peel of citrus fruit or melons
Furskins and artificial fur; manufactures thereof
Products of animal origin, not elsewhere specified or included
Lac; gums, resins and other vegetable saps and extracts
Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations
Cereals
Musical instruments; parts and accessories of such articles
Works of art, collectors' pieces and antiques
Cork and articles of cork
Edible vegetables and certain roots and tubers

All products
Tin and articles thereof
Preparations of meat, of fish, of crustaceans, molluscs or other aquatic invertebrates, or ...
Manufactures of straw, of esparto or of other plaiting materials; basketware and wickerwork
Silk
Prepared feathers and down and articles made of feathers or of down; artificial flowers; articles ...
Umbrellas, sun umbrellas, walking sticks, seat-sticks, whips, riding-crops and parts thereof
Vegetable plaiting materials; vegetable products not elsewhere specified or included

Source: Trade Map

Table 2. Result of RCAI the EU between Türkiye

1<RCA<2	2<RCAI<3	3<RCAI
Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	Iron and steel	Man-made staple fibres
Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	Aircraft, spacecraft, and parts thereof	Wool, fine or coarse animal hair; horsehair yarn and woven fabric
Plastics and articles thereof	Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring ...	Cotton
Miscellaneous chemical products	Man-made filaments; strip and the like of man-made textile materials	
Paper and paperboard; articles of paper pulp, of paper or of paperboard		
Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...		
Rubber and articles thereof		
Soap, organic surface-active agents, washing preparations, lubricating preparations, artificial ...		
Commodities not elsewhere specified		
Copper and articles thereof		
Miscellaneous articles of base metal		

1<RCA<2	2<RCAI<3	3<RCAI
Miscellaneous edible preparations		
Tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal		
Pulp of wood or of other fibrous cellulosic material; recovered (waste and scrap) paper or ...		
Albuminoidal substances; modified starches; glues; enzymes		
Live animals		
Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable ...		
Wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables and articles thereof		
Ores, slag and ash		
Salt; sulphur; earths and stone; plastering materials, lime and cement		
Zinc and articles thereof		
Knitted or crocheted fabrics		
Raw hides and skins (other than furskins) and leather		
Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery		
Photographic or cinematographic goods		
Lead and articles thereof		
Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn		
Furskins and artificial fur; manufactures thereof		
Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations		
Cork and articles of cork		

Source: computed by the author

USING ARTIFICIAL INTELLIGENCE IN BUSINESS

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Abstract
Still in its infancy, artificial intelligence (AI) can become a good ally in our business, especially in these times. But using AI requires education, first digital and then entrepreneurial because when we talk about using AI in business, we must consider the potential risks, especially in terms of cyber security, but also the fact that an economically judicious use of AI in our business can certainly help improve productivity in the workplace, without the need for aggressive human replacement. Based on these premises, the aim of this paper is to answer the following questions: What is artificial intelligence? Who can use it? What are the risks of using artificial intelligence in business? What jobs may disappear as AI develops and matures? The methodology used to answer these questions is based on the literature, official documents published by European Commission offices and statistics issued by specialized bodies. The conclusion that emerges is that the use of artificial intelligence is an advantage in the creation of new products and services.
Keywords: *artificial intelligence; digitization; education; digital skills.*
JEL Classification: I210, I250, H520, M150.

1. INTRODUCTION

It is well known that not everyone is able to own a business and achieve economic performance without knowing the business very well. Equally, we can say that not every person using artificial intelligence with advanced digital knowledge can start a pattern-breaking business economic activity. But, of course, if we are talking about an entrepreneur who has economic knowledge as well and advanced digital knowledge, surely the use of artificial intelligence will be successful when applied to business.

A good entrepreneur already knows that the new economy will change the way people work, communicate and live in society. He knows and is aware of the reality that artificial intelligence, as a part of digitization, will bring significant business benefits such as streamlining processes, increasing access to information and services, innovation and economic growth. But digitization and artificial intelligence, as part of it, needs digital education and this has must start, with all the risks, from primary school level, because from primary school,

today`s pupils are growing up in a digital age, which brings new challenges (Rad and Egerău, 2020).

In the absence of digital literacy as early as primary school, in the two years it takes to complete a full cycle of education, employers will face difficulties in recruiting highly skilled employees in many sectors of the economy, as too few adults will upgrade their digital skills or retrain to fill these vacancies after leaving school (European Commission, 2020). In 2023 McKinsey Global Institute estimates that globally between 400 and 800 million jobs will be lost to digitization by 2030, with only five per cent of current occupations being digitized (McKinsey Global Institute, 2023). According to a Goldman Sachs Research artificial intelligence systems could have a major impact on labor markets around the world. Analyzing databases of more than 900 occupations, it is estimated that about two-thirds of US occupations are exposed to some degree of automation by AI (Goldman Sachs Research, 2023). Also, of those occupations that are exposed, about a quarter to half of the workload could be replaced. But not all this automated work will automatically translate into layoffs; rather, most jobs and industries are only partially exposed to automation and therefore more likely to be filled than replaced by AI. So, used by a good entrepreneur, AI will help business.

2. DEFINITION OF ARTIFICIAL INTELLIGENCE

On May 15, 2024, a SCOPUS search was performed for the term *artificial intelligence* (Scopus, 2024). The initial search revealed 4.023.724 documents, of which 1.951.949 use in conference paper, 1.763.671 in article and only 116.822 in book chapter. 3.905.899 documents are in English and 81.525 in Chinese. 2.825.877 are in computer science subject area. Based on these many results, we wanted to find out what is the definition that artificial intelligence, gives to the term artificial intelligence.

We consider ChatGPT a primitive AI; it is an AI language model developed by OpenAI and is part of the broader GPT (Generative Pre-trained Transformer) family, based on the GPT-3.5 architecture. It is designed to understand and generate human-like text based on the data it receives. It can participate in conversations, answer questions, generate text based on prompts and perform a variety of language-related tasks. But we don't trust it. The information it provides is not always truthful.

The inquiry to ChatGPT made on May 15, 2024, ChatGPT 3.5 said *artificial intelligence is a branch of computer science that deals with creating systems that can perform tasks that typically require human intelligence. These tasks include learning, reasoning, problem solving, perception and language understanding. Artificial intelligence technologies aim to replicate or enhance human cognitive abilities, allowing machines to process data, make decisions*

and adapt to new situations autonomously (ChatGPT, 2024). This is a summarized explanation of artificial intelligence offered by ChatGPT.

Since 1955 to the present day, the term *artificial intelligence* has taken on new meanings. So, in 1955 John McCarthy, one of the pioneers in the field, Marvin Minsky, Nathaniel Rochester, and Claude Shannon define artificial intelligence as „the science and engineering of making intelligent machines" (McCarthy *et al.,* 2006). Alan Turing, known for the Turing test, understood artificial intelligence as a machine capable of human-like thinking and behavior (Turing, 1950).

In attempting to define artificial intelligence, Stuart Russell and Peter Norvig have noted that, over time, researchers have defined artificial intelligence in terms of fidelity to human performance, while others prefer an abstract, formal definition of intelligence called rationality - broadly defined as doing the right thing (Russell and Norvig, 2020). Likewise, some consider intelligence to be a property of internal thinking and reasoning processes, while others focus on intelligent behavior, an external characterization. From these two dimensions - human vs. rational and thinking vs. behavior - four possible combinations emerge (Russell and Norvig, 2020).

In 2020 European Parliament defined AI as the ability of a machine to display human-like capabilities such as reasoning, learning, planning and creativity (European Parliament, 2020).

Sam Altman, known for his views on technology, in particular in artificial intelligence, described the *artificial intelligence* as a super-competent colleague that knows absolutely everything about my whole life, every email, every conversation I've ever had, but doesn't feel like an extension (O'Donnell, 2024). Altman's perspective reflects broader discussions within the tech community about the implications of AI on privacy, ethics, and the future of work (O'Donnell, 2024). As AI continues to advance, it's important to consider these perspectives and engage in ongoing dialogue about how to ensure that AI technologies are developed and deployed responsibly, with consideration for their potential impact on society.

3. WHO CAN USE ARTIFICIAL INTELLIGENCE

It's easy to say that everyone can use artificial intelligence because it's a versatile and lightweight technology. But the truth is that not everyone can use artificial intelligence. To use AI, we must know how artificial intelligence works, we need to have knowledge of the field you're working in and minimal programming skills. Using artificial intelligence isn't just about asking a ChatGPT questions and getting answers. ChatGPT can replace the simple human work of searching for information, but this does not mean it will be able to provide 100 percent accurate information. On the contrary, it will force the user to explore and engage in more creative work to give the right question with a view to getting the right answer. Essentially, ChatGPT is just a good assistant and a powerful text analyzer. That's all (Leng, 2024).

In general AI technology can be used by a wide range of people, from simple users to researchers, scientists and academics. But in our opinion, if you want to use artificial intelligence in your business successfully, you must know:

- programming;
- understanding of mathematics and statistics;
- machine learning and artificial intelligence techniques;
- data processing and analysis;
- practical experience and experimentation;
- communication and collaboration;
- ethics and transparency.

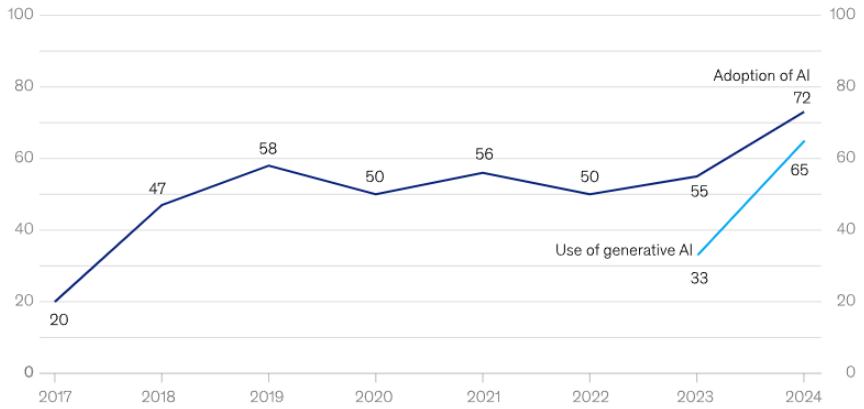
4. AREAS THAT USE AI

Artificial intelligence can be applied in a wide range of domains. In our opinion the main area of application must be education followed by healthcare. Other application areas can be finance, retail and e-commerce, manufacturing, transportation and logistics, human resources.

In education, AI solutions such as Personalized Learning, Administrative Automation, Intelligent Tutoring Systems can provide students and teachers with additional support that is tailored to their needs (Johnson *et al.,* 2016). In healthcare, medical imaging and diagnostics, personalized medicine, predictive analytics, robotics can be AI-based solutions (Topol, 2019). In finance, AI solutions like Fraud Detection, Algorithmic Trading, and Risk Management enable better decision-making (Lu and Tsui, 2021). In retail and e-commerce, AI algorithms can suggest products to customers based on their browsing and purchasing history. Also, AI can predict demand and optimize stock levels, reducing overstock and stockouts or can offered customer service (Agrawal, Gans and Goldfarb, 2018). In manufacturing, AI can offer solutions for predictive maintenance, quality control, supply chain optimization. So, AI can optimize logistics, reducing costs, and increasing delivery speed (Hosseini and Ivanov, 2019).

5. ARTIFICIAL INTELLIGENCE IS GAINING MOMENTUM

The McKinsey Global Institute conducted a survey to see what the level of adoption of artificial intelligence is in a business. The survey was conducted from February 22 to March 5, 2024, and drew responses from 1,363 participants representing the full range of regions, industries, company sizes, functional specializations, and mandates. Of these respondents, 981 said their organizations have adopted AI in at least one business function, and 878 said their organizations regularly use AI in at least one function.



Source: McKinsey and Company (2024)

Figure 1. AI adoption

Based on The McKinsey Global Institute survey we can state that:

- AI adoption percentage: Approximately 71.97% of organizations surveyed have adopted AI in at least one business function. This high adoption rate suggests that a significant majority of businesses are recognizing the value of AI and integrating it into their operations. This can reflect a growing trend in the business world towards embracing advanced technologies for efficiency, innovation, and competitiveness.

- Percent Regular Use of AI: Approximately 64.42% of organizations surveyed regularly use AI in at least one business function. This indicates that not only are businesses adopting AI, but a substantial portion of them are also integrating AI into their regular workflows. This suggests that AI applications are becoming more entrenched in day-to-day operations, moving beyond experimental or pilot phases.

These insights can help businesses, policymakers and researchers understand the current state of AI adoption and usage and identify areas where support or further development might be needed to enhance AI.

6. THE RISKS OF USING AI IN BUSINESS

While AI offers numerous benefits for businesses, it also poses several risks that organizations need to consider, as these risks can affect various aspects of operations, compliance, reputation, and overall business sustainability.

The first risk associated with the use of AI in our business relates to data privacy and security risks, such as data breaches and GDPR-like regulatory compliance (Harvard Business Review, 2020). Another risk is bias and

discrimination, because AI systems can perpetuate and even exacerbate biases present in the training data. This can lead to discriminatory practices in hiring, lending, law enforcement, and other areas (O'Neil, 2016). Also, AI can put us in a operational risks when AI systems make errors, particularly if they encounter data or situations that are significantly different from what they were trained on. These errors can have significant operational consequences (Daugherty and Wilson, 2018). AI dependency can be another risk factor. When our businesses become overly dependent on AI systems, we are likely to lose critical human expertise and judgment, and in the event of an AI failure, this over-reliance can lead to significant disruption (Harvard Business Review, 2020). Another AI risks can be associated with ethical and social risks, when the automation of tasks through AI can lead to job losses and significant changes in the workforce (Lee, 2018).

All these risks must be considered when we want our business to thrive and have a competitive advantage over the competition.

7. JOBS THAT WILL DISAPPEAR BECAUSE OF AI

Over time AI technology will develop and many jobs will risk disappearing. Also, new jobs will appear. So, in less than 10 years, jobs held by data entry clerks, receptionists and administrative assistants are at great risk because of AI's ability to automate routine tasks such as scheduling, data processing and customer service via chatbots (Daugherty and Wilson, 2018). Already robotic automation and machines driven by artificial intelligence can perform repetitive tasks more efficiently and without the need for breaks, reducing the need for human workers on assembly lines. But this also happened when FORD moved to the factory line, which gave FORD a huge advantage (Brynjolfsson and McAfee, 2014).

But AI can create and transform various jobs across different industries, leveraging its capabilities to enhance productivity, decision-making, and innovation. Here's a list of jobs that AI can create:

1. AI Engineer/Developer;
2. Data Scientist;
3. AI Ethicist;
4. AI Product Manager;
5. Robotics Engineer;
6. AI Research Scientist;
7. Virtual Reality (VR)/Augmented Reality (AR) Developer;
8. Cybersecurity Analyst specializing in AI;
9. AI Business Consultant;
10. Healthcare AI Specialist.

Of course, many jobs can be created with the help of artificial intelligence, if we want it and if we trust artificial intelligence.

8. CONCLUSIONS

Artificial intelligence can be used by anyone who has access to the data and resources needed to develop and implement AI-based solutions in various fields and industries. However, currently, the recommendation is that AI should only be used by specialists, those who have the skills to find the best solution, because ultimately AI does not decide, it only proposes a solution.

Also, educating the workforce from an early age in digital literacy is essential to harnessing AI's potential effectively. Businesses that strategically integrate AI, while addressing its ethical, operational, and societal implications, are poised to gain a competitive edge in the evolving digital landscape.

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ADVANTAGES AND DISADVANTAGES OF THIRD PARTY FUNDING OF JUDICIAL PROCEEDINGS

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Abstract
In international arbitration, parties autonomy is a vital principle, allowing them to determine how the proceedings are to be conducted, subject to the application of the mandatory regulations of the state where the proceedings are held and, where applicable, the rules of the arbitral institution. In other words, being a technique that is mainly based on the application of the principle of freedom of contract, third party financing (TPF) is often allowed in principle in arbitration cases that are also contractual in nature.
The research focuses on the attention paid to financing by third parties in judicial cases, which can be explained by some of the fundamental advantages it entails (respect for the fundamental nature of the right to defense and unrestricted access to justice, patrimonial advantages, etc.). Both plaintiffs and defendants can take advantage of the TPF throughout the procedure, but also afterwards (ie during the execution of the resolution). The analysis of the law in force and the jurisprudence are used to explain one of the key issues fueling suspicion and skepticism about the use of TPF, i.e the method introducing an outsider into the lawyer-client relationship (the third-party funder) whose sole interest and only connection to the dispute is the pursuit of the capitalist objective of making a profit. The papers point out the advantages and the lack of the procedure, in the context of the EU law proposal for a regulation on the topic.
Keywords : *litigation financing; third party; fundamental rights.*
JEL Classification: K34, K40.

1. INTRODUCTION

In the current social and political context, dominated by globalization, at all levels of life, the legislative harmonization and borrowing, at the level of evolution and development of the regulatory framework, is a common practice. Institutions from different states use legal instruments regulated on various scale in other states, possibly at different intensities or frequencies of use and on other level of development of their legal framework.

Surprisingly, therefore, the hypothesis of litigation financing and the identification of solutions in the hypothesis of a lack of financial resources to support the right to defence is, at least from the perspective of Romanian law, an

almost exclusive concern of those who decide to use the judicial way to restore justice. Only in isolated situations are financial aid mechanisms created by law for those involved in the management of processes before the courts, exemptions from stamp duties, help to cover expenses, etc. (Ungureanu, 2018).

The financing of litigation is, in the Romanian legal system, a concern of the one directly involved in the respective litigious situation, the existing regulations being very discreet and strict regarding how the state provides support to those in objective need of financial support to be able to exercise the right to defence (Martin, 2009). This reality is in deep dissonance with international regulations and jurisprudential practice in other states. Litigation financing by third parties in international trade is more commonly known by the abbreviation TPF, derived from the English name of the concept, i.e. tertiary party financing (Radin, 1936).

In the US, the courts, despite the maintenance and champerty doctrines, have over time been increasingly disinterested in validating agreements between litigants and financiers. By the second half of the 20th century, contingency fee agreements became the de facto exception to self-funding by litigants, third parties interested in funding litigation using their relationship with the parties' lawyers to provide financial support to maintain the litigation (Faure and De Mot, 2012). Thus, in most state jurisdictions in the US, the funding of litigation by third parties, for profit, is allowed, except when such agreements are based on an illegal or immoral cause or when they promote "frivolous litigation (Glickman, 2016).

The paper analyses the evolution of the regulatory framework to support third party financing of litigation, pointing out the positive and the controversy dimension of this relatively recent legal instrument to support the wide scale access to justice.

2. METHODOLOGY

From the methodological perspective, the work was carried out considering appropriate scientific research methods, the main purpose of the research being an exhaustive analysis of the proposed investigation area. The research used the documentation method from the specialized literature, from the adopted normative acts, but also from the relevant judicial practice at the national level, at the level of the European Union and at the level of the courts of other countries. The documentation on the case law also covered the solutions relevant to the field of study that were pronounced by the courts of different states. We used the comparative method to identify and present the existing similarities and differences between different regulatory systems regarding the financing of disputes by third parties and the resulting material was subjected to logical, systemic and historical analysis.

Using the logical method as a research method, we appealed to deductive and inductive analysis, using various tools to answer all the research questions caused by the realization of this scientific endeavour (Faure and De Mot, 2012). We used various methods of capitalizing the documentary material, including generalization, specification, division, classification and definition of concepts. The partial results of these analyses are presented in each chapter, the logical method of interpretation being, as a general assessment, predominantly used.

At the same time, I used the historical method of research and interpretation of the documentary material, the results of this type of investigation being presented in the content of the thesis in several chapters and sub-chapters, being presented *expressis verbis* stages of the historical evolution for certain regulations and legal institutions.

The way in which the rules relating to the financing of litigation by third parties have been included in the national law system of various contemporary states, being analysed to identify comparable elements and to retain the common regulatory directions in the plan of harmonizing the norms of European law, respectively at the global level, for the standardization of international law norms.

3. WHY USING THIRD PARTY FINANCING LITIGATION

The expression of contrary opinions regarding the beneficial nature of the operation of third-party financing of disputes are ongoing, yet we belong to the group of researchers who consider that its advantages are indisputable, both in the case of arbitration and judicial procedures (Flake, 2015).

We will highlight, next, the main advantages that are treated in the specialized literature, aspects that are certainly considered when an interested person wants to support such a procedure and which, equally, can be considered by states that do not have paid special attention to this institution up to this point.

3.1. Access to litigation proceedings

Arbitration has become a large international industry, highly competitive and prohibitively expensive, with costs continuing to rise at an unsustainable rate and creating imbalances in negotiations if one party has significantly more resources than the other (Menon, 2013). Thus, arbitration has become a type of dispute resolution with an enormous demand for funding.

Arbitrage actions are a competition between equals when the companies are roughly equal in size and the amount at stake is manageable for both parties. In this case, we would expect the dispute to be resolved only on the merits of the case and not because one party has greater bargaining power. Conversely, disparities and incidents of problem management arise if one party is much stronger than the other. The increasing expenses associated with claiming high-value claims and the need to manage the financial risks associated with pursuing

these substantial values are undoubtedly reasons that can explain the growing interest and demand for TPF (Bowman *et al.,* 2011).

According to a recent study, the high upfront costs involved in arbitration have a deterrent effect and often prevent potential claimants from suing. The expense of an arbitrator can be particularly prohibitive for a party bringing claims against a larger and more powerful opponent. Funding agreements can be seen as a remedy to this problem, shifting legal costs to a third party, thereby allowing claimants with limited financial resources to pursue their claims in common law courts or arbitral tribunals (Flake, 2015, p. 115).

On the other hand, third-party funding "allows defendants with strong defences to avoid surrendering to pressure from a better-funded plaintiff to enter into an early settlement agreement" (Cremades, 2011).

It is obvious that arbitration should provide services that are available to any litigant, not only to certain categories of claimants, but to all those who have valid claims or a solid defence but cannot go to arbitration because they do not have of the necessary financial resources. Not only will this benefit smaller businesses, it could also improve public opinion of the legal system itself. Open and equal access to arbitration for all parties wishing to use it must remain a fundamental feature of any fair legal system (Bogart, 2013). Therefore, the first and perhaps the most important reason for the expansion of the TPF is the fact that, at the level of public policies, this is considered a solution for achieving the ideal of increasing access to justice. As a result of obtaining funding, the parties can have a realistic chance of asserting their rights, having the opportunity to go to arbitration without the risk of ending up in a situation of serious economic crisis due to the opening of the action.

In other words, the TPF process balances the balance between the parties in dispute resolution, if one of the parties involved has poor financial resources. Lack of access to justice could also affect perceptions of the fairness and legitimacy of international arbitration itself (Rogers, 2014). It is a considerable risk, which the international arbitration community should certainly try to avoid (De Boulle, 2014).

3.2. Risk transfer

Unlike state litigation, where the risks are borne by the party who made the claims or the party that loses the lawsuit, third-party funding provides a way to share the financial risks of arbitration (Khouri and Hurford, 2012). A party that would have to pay the entire bill of the arbitration action may feel compelled to drop the claim because of the high degree of risk. Process players, such as employers and corporations, typically have a higher risk tolerance, and when different levels of risk tolerance combine with different levels of available resources, the result is a level playing field unequal; the objective of fair and

equitable arbitral justice is often thwarted by costs, processes and risks (Molot, 2010).

However, contracts with creditors can be structured in such a way as to allocate risks to the various parties involved, including lawyers working under conditional fee or contingency fee agreements, or other persons interested in investing in the case. In addition, financing lenders are experienced in assessing risk and are better equipped to manage it than most parties (Kirtley and Wietrzykowski, 2010).

3.3. Maintaining financial stability

The potential impact on the company's economic and financial viability and stability may also discourage a party from taking its dispute to arbitration. Third-party financing transfers the responsibility of covering the expenses to the financier, thereby giving more companies the opportunity to engage in arbitration proceedings and at the same time giving them the necessary security to maintain sufficient cash flow to avoid financial problems (Steinitz, 2011). Thus, they can continue their usual activity or even invest in new activities when pursuing a claim that meets all the conditions to be found well-founded. Companies could withdraw from arbitration proceedings if their possible continuation would endanger their liquidity.

At that time, they will balance the issues that would create the biggest problems for them: lack of liquidity, which would lead to the stagnation of the business, or giving up the claim and stopping the arbitration procedure. TPF can be a solution to this dilemma, as it allows the party using it to take the financial risk and cost of the procedures out of their financial situation, transferring them to the financier, while still being able to continue their normal business (De Boulle, 2014). In many arbitration proceedings, the main concern is the possible loss of the case, in which case the claimant would be liable not only for his own legal expenses, but also for the defendant's costs. The ability to disseminate and share these financial risks with a third party can be attractive even to clients with strong businesses and cash flows (Cremades, 2011).

3.4. Negotiation power

Third-party funding equalizes the bargaining power of plaintiffs and defendants, which gives the funded party better leverage to reach a settlement with the opposing party (Van Boom, 2011). Equalizing bargaining power can facilitate settlement of the dispute by agreement because financially stronger parties, who would otherwise have tried to take advantage of their financial power, would be more willing to engage in negotiations to reach to an agreement with the weaker (but funded) party at an early stage of the dispute (Cremades, 2011). Moreover, creditors often structure financing contracts in such a way that they favour the early settlement of the case.

3.5. The financier's specialized staff

As an indirect effect of entering into a third-party litigation funding agreement, clients can benefit from the human capital of the funders. Observations have been made in the literature that many funding firms are led by ex-lawyers with considerable litigation experience who focus on quickly, efficiently and successfully resolving funded cases to achieve maximum value achievable. By having a wide range of specialist skills and experience and being consistent with their own commercial objectives, a funder can bring real added value to the successful prosecution of arbitration claims (Khouri and Hurford, 2012). Funders can be helpful throughout the arbitration by providing advice on experts and arbitrators, providing input on strategic decisions and even helping the client hire new counsel if it becomes apparent that the current one does not have the skills or experience to successfully arbitrate the claim.

3.6. The attractive nature of the investment

The TPF industry in international arbitration is considered to be advantageous for numerous reasons, among which we mention the speed of arbitral proceedings; the high level of security related to the execution of arbitral awards, because there are several treaties that guarantee international enforcement, such as the New York Convention; prevalence of high value claims; the skills of decision makers; the fact that financiers typically seek a share of the recovered value ranging from 15% to 50%, depending on the costs and risks associated with financing the dispute (Nieuwveld and Sahani, 2017). We also mention here that the stagnation of the world economy and the associated uncertainty are determining factors for financiers, which increase the interest in third-party financing, because this is a way to make investments that are not related to unpredictable financial markets.

3.7. Equalization of the negotiation capacity of the parties

One of the main concerns in arbitration actions where the opposing parties are unequal in size is that the weaker party might be tempted to accept a less than reasonable settlement offer on the grounds that the offer would release it but of the burden of the dispute resolution process, regardless of how solid the claim it raises may be. Without the credible threat to the stronger party that the dispute could go to arbitration and possible enforcement proceedings, the weaker party would usually be forced to accept an agreement, drawn up unilaterally by the stronger party (Rodak, 2006). This is the sense in which the TPF is said to have a "bargaining power equalization" function.

Supporters of the TPF also point out that this will have a positive impact on the parties' agreements through which they reach an agreement (settlement) and may lead to early settlements mainly for two reasons: on the one hand, the financially stronger party will lose the power to impose unilateral settlement

agreements; on the other hand, the presence of a funder is an indication to the opposing party that the plaintiff has a strong case, and this increased influence of the funded party will give the opposing party a greater incentive to negotiate a more favourable settlement. In addition, the fact that financing agreements are often worded and structured in such a way as to encourage the adoption of a solution in the shortest possible time, for example by including a provision that the funder will be charged a lower amount if the dispute is settled in one stage to begin with, it also contributes to the positive effect that TPF has on arbitration settlements (De Boulle, 2014).

On the other hand, critics of the TPF claim that it could have a negative impact on settlement, as a rational claimant would be reluctant to settle for any amount that is less than that advanced by the funder. As a result, the use of third-party financing would discourage plaintiffs from settling. In the same vein, it is assumed that financiers will be reluctant to accept settlement offers that would not recoup their investment in full (Nieuwveld and Sahani, 2017). Arguing this idea, the literature emphasizes the fact that there is no evidence to suggest that plaintiffs stay in the game to obtain more profitable settlements simply because they have to pay something to the financier, just as there is no evidence that plaintiffs, they want more profitable deals to cover the interest they had to pay to borrow money to cover their expenses (Bogart, 2013).

To support this view, the following analogy is made: plaintiffs in the US initiate lawsuits using the support of lawyers who grant them legal assistance based on a conditional fee agreement; based on it, they are aware that they are giving up part of the amount they would get from the deal. However, he accepts this from the outset and there is no reason to suggest that he would not agree to such an arrangement, which he considers reasonable due to the possibility that the payment of the fee may be made conditional on winning the case. TPF in arbitration is not much different from this situation.

We appreciate that both types of arguments are legitimate, but we tend to give more weight to the point of view of TPF supporters, because that this process has or could have on imbalances in bargaining power. This preponderance of arguments supporting TPF is also supported by the development of the third-party litigation finance industry, even if the pace of development is faster in some states and slower in others.

4. THE OPOSITE VIEW ON THE TOPIC

4.1. Public policy concerns

Third-party funding opens the door to claims based on less robust or interpretable legal grounds, as funded parties assume little or no financial risk and are therefore not always dissuaded from pursuing such claims. If the potential recovery is large enough, the lawsuit will be an attractive investment, even if the likelihood of getting that amount is low (Bogart, 2013). Third-party

funding also unfairly raises the bar on out-of-court settlement negotiations, while inflating costs for unfunded opponents, potentially even increasing the client's costs.

Because they will often have little or no leverage when negotiating the terms of the financing agreement with their financiers, clients must be willing to give up substantial portions of their potential earnings to secure financing (Khouri and Hurford, 2012).

4.2. Conflicts of interest

Third-party funding can also lead to several ethical issues in arbitration, perhaps the most obvious of which is conflicts of interest. Funders need to obtain information to assess the viability of a claim, which can be problematic for lawyers, who have a duty of loyalty to their clients (Van Boom, 2011).

There are also suspicions indicating that, if TPF were to be used, lawyers might misdirect their loyalty towards financing creditors rather than clients, particularly in settlement negotiations, negotiations in which between clients and financiers there is no consensus. There may also be conflicts of interest between financiers and arbitrators because of multiple appointments of arbitrators, made indirectly by the same third-party financier, because of a pre-existing relationship between the financier and the arbitrator, or the shares held by the arbitrators in corporations specialized in financing (Trusz, 2013). Thus, litigation financiers are aware of the ethical issues that TPF entails, which is why they analyse not only the legal aspects, but also the ethical ones, before concluding the financing contract, hiring consultants of top, with recognized experience in their field of competence, who are aware of the evolution of TPF and the new ethical issues that stand out in practice (Pierce and Burnett, 2013).

4.3. Confidentiality

Another deontological issue regarding third-party financing in arbitration is the violation of the confidentiality of information obtained from the relationship with clients. Confidentiality is a fundamental right in the attorney-client relationship and is becoming increasingly important in arbitration, but it is threatened whenever a disinterested third party is introduced into this relationship. This is especially true when lenders perform an invasive screening process that includes confidential information before deciding whether to invest. Moreover, attorney-client privilege generally does not protect communications made in the presence of third parties that are not objectively necessary for attorney-client contact (Sebok, 2013).

4.4. The financier's control over the claims

Third-party financing tends to undermine the customer's control over the claim. Party autonomy is one of the cornerstones of arbitration, but financiers

may seek to usurp control and influence strategic decisions to protect their investments (Sebok, 2013). Customer control could also be jeopardized by breaches of confidentiality or potential conflicts of interest, and some customers may even be required to delegate the handling of all claims during the litigation to the funder by way of power of attorney (Trusz, 2013).

Concerns about the ethical implications of third-party funding are not unfounded. However, there are numerous safeguards in place to address potential ethical issues should they arise. For example, conflicts of interest are governed by the general principle that lawyers have ethical obligations only to their clients, not to third parties (Flake, 2015). Any possible tendency of them to favor the interests of financiers at the expense of clients is strictly regulated by the code of ethics of the profession - including disciplinary sanctions and liability in case of malpractice - and by the clauses of the financing contract (Khouri and Hurford, 2012).

Codes of ethics in most countries that apply TPF prohibit lawyers from accepting compensation from a third party in any situation that involves interference with independence in the exercise of the profession or the lawyer-client relationship. In addition, financing agreements may expressly provide that in the event of a conflict of interest between the claimant and the funder, the lawyer may continue to act exclusively for the claimant, even if the interests of the funder would be adversely affected by this measure. Conflicts of interest that may arise between creditors and arbitrators can be neutralized by establishing the obligation to declare them (Brabandere and Lepeltak, 2012). For example, under the arbitration rules established by the American Bar Association (ABA), arbitrators are required to disclose any circumstances that might raise reasonable doubts as to the impartiality or independence of the arbitrator.

Equally, under the Revised Uniform Arbitration Act (RUAA) arbitrators are required to disclose any known facts that a reasonable person might consider affecting their impartiality, including financial or personal interests and relationships with any part of the arbitration action (Flake, 2015). Privacy issues arising from third-party funding are also solvable. Nondisclosure agreements are increasingly common in arbitration and can be extended to include funders (Menkel-Meadow, 2002). It is true that the due diligence process sometimes requires access to confidential information to fully assess the merits of a claim, and clients who provide such information to funders may indeed waive attorney-client privilege (Giesel, 2012). However, the lawyer must obtain the client's informed consent before releasing information to a third party, and communications with funders may still be protected by the professional secrecy rule, provided that they have been conducted in preparation for a actions.

Finally, critics exaggerate the extent to which undermining customer control is a problem (Sebok, 2013). Common law allows parties to waive control

over legal claims by contract, in various contexts, and in third-party financing, the financing contract dictates the level of control granted to the financier.

In our view, the fact that funders can be given a certain degree of control is not necessarily problematic, since "the competence of the funder in a certain type of case could lead to the proposal of better tested strategies and the making of better-informed decisions than would be possible in the case of an inexperienced claimant". In most cases, financiers do not need to usurp control from the client because their interests are aligned (Khouri and Hurford, 2012).

It is also unlikely that funders will ask to take control after they have already carried out background checks on the application and the lawyer's background. A body of literature argues that courts and legislatures should allow third-party funding in domestic arbitration and asserts that the arguments against the use of this funding technique are exaggerated and inaccurate considering current public policy and ethical safeguards. Although the perspective on the possibility of financiers to guide the litigation may differ from one regulation to another, the recent proposal of the European Commission for the adoption of a Directive at the EU level regarding the regulation of third-party financing of litigation is of interest, more precisely the provision found in art. 14 par. 2, which explicitly recommends that “Member States should ensure that third-party funders are not allowed to influence the decisions of a claimant during the proceedings in a way that would benefit the litigation funder itself and the detriment of the claimant. For this purpose, any clause in the third-party funding agreements granting a litigation funder the power to make or influence decisions in relation to the proceedings shall have no legal effect”.

As I mentioned in this paper, the text proposed to be included in the future provision reflects without a doubt the position of the European Union regarding the role of financiers in the evolution of the litigation and prevents situations in which the rights of the party could be prejudiced by the purely economic interests of the financier, such contractual clauses being devoid of legal effects. Moreover, the party in the process has the possibility to choose the option that it considers the safest for obtaining the expected result.

4.5. Increasing the volume of cases

Doctrinaires who express critical positions towards the use of the TPF thus express their concern in the sense that the use of funding will lead to an increase in the volume of cases subject to settlement, as it allows some baseless claims to end up in court or be subject to arbitration (De Boulle, 2014). They justify their support by arguing that the probability of success is only one component of the funding decision, another being the potential value that can be recovered. Therefore, it may be that the value at stake outweighs the likelihood that that value will be recovered. Furthermore, some commentators fear that funders will have no qualms about creating portfolios consisting of high-risk cases (i.e.

unfounded claims) and low-risk cases (i.e. claims with a high chance of success) to add to a place high-risk case and sell them to third-party speculators as financial derivatives (Kantor, 2009).

Third-party speculators would thus invest and profit from unsubstantiated claims that, sold individually, would otherwise have no market. In addition, it is assumed that financiers would be less motivated to carry out a thorough check to decide whether a claim is unfounded, since the risk of loss would be spread among many investors (Cremades, 2013).

5. CONCLUSION

TPF could thus evolve over time into a complicated financial engineering involving other related financial products such as credit default swaps. Credit default swap is a convention like insurance against certain risks (such as bankruptcy, inability to pay the debtor), in exchange for periodic payments (like an insurance premium). The one who is "insured" against this risk is considered the buyer of the credit default swap, while the one who assumes the risk of default is the seller of the credit. Its advantage is that, in case of impossibility of payment, the credit seller assumes the obligation to pay; instead, if this event does not occur, the credit seller keeps the periodic amounts paid by the buyer.

However, it remains to be seen how the market will develop and whether demand will continue to grow in the coming years. We thought it useful to mention this matter, given the possible impact it could have on the further development of the TPF industry. It can be argued, therefore, that the risk is not quite negligible in the sense of an increase in the number of unfounded claims financed in court or in arbitration by third parties. This risk is increased when portfolios of high-risk cases are created, which are then sold as derivatives. We are thus in a different scenario from the case-by-case financing situation, where there is, as a rule, very little reason for financiers to get involved in claims that do not meet the legal requirements to be considered well-founded.

In the first scenario, however, financiers could cover some of their risks by also accepting some low-risk cases. Consequently, financiers will have a higher appetite for risk when financing a portfolio of cases, in which case there is also a higher probability of financing frivolous claims. Although numerous points of view are expressed in the doctrine that express the concern analysed above, there are also authors who state that until now there is no conclusive evidence that the TPF would promote unfounded causes. Moreover, the number of cases that are resolved because of benefiting from TPF has not increased so much as to justify this type of concern, i.e. the unjustified increase in the prosecution of numerous, mostly unjustified, claims.

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THE EVOLUTION OF THE ROMANIAN POLICE FROM THE MILITIA DURING THE COMMUNIST PERIOD

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Abstract
During the last decade Romania has undergone major political transformation from communist regimes to democratic forms of government. Despite changes--introducing police ranks, changing uniforms, prohibiting party affiliation, police find it more difficult to persuade citizens that they have really changed. The article details the modifications that came about in tandem with the evolution of the Romanian Police following Romania's 1990 political upheaval. The relationship between socioeconomic shifts and the corresponding modifications to law enforcement agencies has received special attention. These modifications range from renaming the Militia to the Police to altering its personnel, organizational structure, and legal framework. The Romanian Police is a professional organization that serves the public and is commemorating its 202nd anniversary in 2024.
Keywords: *police; militia; international structures.*
JEL Classification: O15.

1. INTRODUCTION

Throughout the 50 or so years of communism, the 'militia', as the police used to be called, was employed as a powerful instrument to crush any individual or collective protest the powers that be. For many years, Romanians associated the police with the secret services (the 'Securitate') and feared both equally. After December 1989, the names of the two institutions were changed (the militia became the police and the Securitate became the Romanian Intelligence Service), each having their own duties established by law.

However, both are still militarized, as are other special services, including the Foreign Intelligence Service, the Guarding and Protection Service, and the other secret services. This means, among other things, that their internal rules and regulations are classified as secrets, that they benefit from numerous material privileges, and that only military prosecutors can investigate potential abuses; if indicted, the perpetrators can be tried only in military courts.

2. SUMMARY OF THE ROMANIAN POLICE HISTORY

Records confirm the presence of the Mare Vornic, who is currently the minister of interior, since the Middle Ages (Stefan, 2022). The Mare Vornic was chosen by the Voievod, or monarch, and oversaw maintaining law and order, resolving conflicts, and operating guard services. Under the Mare Vornic's leadership was the Master Hunter (vătaf de vânatori), the forerunner of the Police Chief, whose duties included monitoring marauders and the homeless, suppressing poachers, and maintaining control over travellers staying in the local inns, particularly foreigners. The Agia, the Romanian Police Service, received a seal and flag bearing the Annunciation emblem on March 25, 1834. The Annunciation is a significant Christian feast in Romania and serves as the police force's spiritual guardian. The National Guard was later given extensive civilian, political, and military powers by the ruling prince Alexandru Ioan Cuza on February 7, 1864, as part of the law on the organization of armed power in Romania. The National Guard's goals were to safeguard law enforcement and institutions, maintain national order and independence, and watch over and protect the entire country (Romanian Police)

The Law on the Organization of Central Administrative Service, of 19 April 1892, which provided for the establishment of the Directorate for the General Administration of Personnel and of the Security Police, as well as the Bureau for General Security, played a significant role in defining the position of the Ministry of Interior within the Romanian state administration. Considered the founding father of the modern Romanian Police, Vasile Lascăr, was the interior minister who started a significant reform process of the police institution at the beginning of the 20th century (Școala De Agenți De Poliție Vasile Lascăr Câmpina, 2024).

In 1923, the Constitution was adopted and the reorganization of law enforcement institutions began implementing the separation of the powers of the state. Consequently, the Law on the Organization of the General State Police was passed on July 21, 1929, designating the General Directorate of the Police as the principal state body responsible for directing, coordinating, and preserving public safety and internal order throughout the entire country. At the start of Communist control in 1949, the Ministry of Internal Affairs underwent a reorganization at both the central and territorial levels, marking a significant turning point in the ministry's history. The central apparatus was divided into twelve regional directorates, the Directorate for the Security of the Capital City, the General Directorate of the Militia, the General Directorate of Penitentiaries, the General Directorate of the People's Security, the General Political Directorate, and the Command of the Troops of the Ministry of Internal Affairs (Ministry of Internal Affairs, 2024).

After the communist system was overthrown in December 1989, the Romanian Police's operations were reorganized along new principles. One of

the initial steps was the institution's complete de-politicization, which served as the catalyst for a process that reshaped the institution's constituent parts as well as the legal framework that oversaw them. Prior to 1989, law enforcement officers were known as "militiamen". The militia, the organization of which they were a part, was established by the Ministry of the Interior in January 1949 and was established with the stated purpose of "maintaining order on the territory of the Romanian People's Republic, defending the rights and freedoms of citizens and their personal security" (article 1). From the beginning, the organization was directly under the control of the Communist Party. They all held military ranks as employees of the Ministry of the Interior (Siani-Davies, 1995).

As per the Sighet Memorial, of the 35,000 workers who initially made up the Militia, only 161 held college degrees, 9,600 had completed four classes or less, and 7,800 – six-seven classes. Since 1948, the staff had been subjected to several waves of purges. In July, the State Security Directorate issued an order aimed at identifying and sanctioning "all police officers and agents who actually worked in Security work until March 6, 1945", except for those who "are currently valuable informants, who have files created by informants and who have proven that they conscientiously fulfil their entrusted mission". In the same month, over a thousand employees excluded from the police were arrested and imprisoned. The former policemen remained imprisoned without trial until 1955, when they were sentenced to 8 years in prison based on article (193/1) of the Criminal Code, with retroactive character, defining "activity against the working class and the revolutionary movement (C.N.S.A.S., 2006).

To become militiamen, social origin and attachment to the party were more important than education. Professionalization was done on the fly, at first only by graduating from schools lasting a few months. The Militia Apparatus began transit surveillance and residence control, meaning that by the end of 1952 no urban resident should be allowed to change his residence without the permission of a Militia office. One of the Militia's initial responsibilities was to issue residence permits and later, identity cards. Over time, the Militia's power has increased. The institution's mission was reformulated in November 1969, with the new objective being to "contribute to the defence of the revolutionary conquests of the people, their peaceful work of socialist construction, public and personal wealth, life, freedom and dignity of individuals, the rule of law settled in Romania." The privileges granted by this legislation gave rise to numerous abuses, and the Militia was required by law to defend "socialist property against actions taken by criminals or other persons who harm the public property" (Romanian legislator, 1969).

3. ORGANIZATION OF THE ROMANIA MILITIA

The militia is subordinate to the Ministry of the interior. The headquarters was in the former police headquarters on "Calea Victoriei". The principal functions of the militia were to conduct investigations and to keep check on foreigners in the country. Investigations were made by a group of seven to eight militiamen, some of whom were in uniform and some in civilian clothes. Investigations were usually carried out by the entire group of militiamen who use the tactics of rapid questioning which did not permit a complete answer to any question. The individual under investigation was subjected to an inhuman harangue, after which a statement was drawn up by one of the militiamen and the accused was forced to sign the statement regardless of the validity of its contents (Central Intelligence Agency, 2016a).

Since July-August 1954, visas for leaving the country were issued by the Foreigners Control Section, located in Room 223 on the second floor of the militia headquarters. Individuals requesting visas for departure from Romania must check through an Information Office at the entrance to militia headquarters where a pass was necessary to enter the building, and to receives the application papers to be filled out in the waiting room. When handing in the papers, applicants were questioned as to their reasons for wanting to leave the country and were discouraged from, such action by the militia employees who describe life outside of Romania being extremely difficult. There were militia headquarters for each district of the city which contains the following sections:

- Office of the Commanding Officer - The Commanding Officer is usually a captain or a major who is selected from the ranks of the Communist Party. Most of the time they wear civilian clothes.
- Economic Militia Section - The Commanding Officer of this section was usually a first lieutenant, assisted by one to two second lieutenants, and a few sergeants. They were concerned only with activities in the commercial field where they conduct investigations and cite to court those accused of irregularities against the communist law.
- Control of Foreigners Section - This section is responsible for keeping records on all foreigners, issues extension visas, and grants permission to change the place of residence. The Commanding Officer of this section was a second lieutenant, assisted by two to three militiamen. The section also issues travel permits, but usually to only those who travel in line of duty. When applying for such a permit, the applicant must present a letter of justification from his employer. The permit was valid for no longer than three days. For longer periods, the applicant must have gone to the main militia headquarters, a procedure which takes about 30 days.
- Evidence of Population Section - In each militia district there is a section which kept a census of the population within its jurisdiction.

This section issues travel permits to Romanians who need to travel to frontier areas. For this, the applicant must attach two pictures to his request. The Commanding Officer of the section is a second lieutenant, assisted by two to three militiamen or women. This section was also responsible for the issuance of building cards, as well as permits for change of residence. The building card, which is secret was valid only for the person whose name was inscribed thereon. When an individual is hospitalized, the card is picked up by the militia and held until his return home.

- Investigations Section - The Commanding Officer was the first or second lieutenant, assisted by several militiamen. Investigations are carried out in the districts in the same inhuman manner as was the main militia headquarters office.
- Information Office - This office was located at the entrance to the militia district office. Its responsibility was to issue passes into the building.
- Sector Runners - Sector runners are militiamen who oversee one to three streets. They collaborate with ''block responsible" in order to get information concerning the inhabitants of each building. They conducted house checks to determine the movements of the inhabitants and to discover unauthorized over-night guests.

Each city is divided into sectors and each sector has a non-commissioned officer known as the sectorist, who travels in civilian clothes. Under his direction he has several agents from among the young workers, who help him control the movements of personnel living within the sector (Comisia Prezidenţială pentru analiza dictaturii comuniste din România, 2006). The sectorist and his agents are on the lookout for breaches of economic and political laws and decisions. They also control the papers of any person in the sector, whether a resident or not. The behaviour of sector runners toward the population was very bad and they were disliked intensely (Central Intelligence Agency, 2013). The uniforms of militiamen are of the same colour as the officers' uniforms but are of a cheap coarse material. There were many women in the militia who were dressed as militia officers. A description from another point of view of an external agency that does surveillance of all the countries in the world. This is how the CIA operative described them.

The Director General of the militia was responsible to the Ministry of the Interior (MAI), The militia had the following three branches: Territorial Militia, Railroad Militia and Prison Militia (Comisia Prezidenţială pentru analiza dictaturii comuniste din România, 2006). The Territorial Militia was organized by regions, in accordance with the 28 administrative regions in the country. Under the regions there are districts, with a militia assigned to each district. In addition, there are militia personnel assigned to various bureaus, as will be

explained below. The regional militia was commanded by a field grade officer; the district militia was commanded by a company grade officer.

The chiefs and secretaries in the different bureaus are officers and non-commissioned officers, regardless of whether they are male or female. Each district has a group of 6 to 10 mountain militiamen who patrol the public roads. In addition to their horses, they usually have other means of transportation consisting of an automobile, a Praga truck, a motorcycle with side car, and sometimes horse-drawn wagons (Central Intelligence Agency, 2016b). They request additional transportation when the need arises.

Each village has a militia post; each frontier village has a post of four to six people. In mountain villages the militia is especially equipped for climbing, skiing, etc. The uniform is grey with a dark blue patch (Central Intelligence Agency, 2016c). The Railroad Militia wears the same uniform, but the epaulets and caps are red.

The headquarters is in Bucharest and field stations are organized by regions. The Railroad Militia has guard units in communications centers, railroad stations, terminal points of frontier zones, as well as patrol teams of 2, and 4; inside trains travelling in frontier zones. They control the identity card ("Buletin de Identitate"), travel orders, and the permit to travel in the frontier zones. This Militia also guards materiel in railroad warehouses and on trains, and prefers charges against saboteurs, sending these charges directly to a special railroad court for judgment (Andreescu and Berindei, 2009).

The Prison Militia wears the same uniform but with light blue epaulets. Their main duty was to guard prison and concentration camps. The headquarters was in Bucharest, with field stations organized by city. Spot checks were conducted on the fringes of crowds attending national celebrations or in zones where manoeuvres might be conducted. These spot checks may consist of blocking off and surrounding a group of people, instead of checking an entire exposition hall, theatre, restaurant, or park. Such checks were also conducted in the villages (Central Intelligence Agency, 2016a).

The militia collaborates with security forces and helps security troops to make arrests and deportations and to block off mountain passes, forests, etc. They also make periodic checks of isolated houses and cabins (Central Intelligence Agency, 2016b).

4. POLICE REFORMS FOLLOWING 1989

Romania was forced to undertake significant reforms in all its institutions, including the police system, because of the fundamental decision made in December 1989 to uphold a system of values based upon democracy, the respect of citizens' rights and freedoms, the protection of juveniles, dialogue, and tolerance. It was necessary to change the police into a public-serving organization (Hinţea *et al.,* 2002).

It was necessary to create adaptable and functional structures that could effectively guarantee the performance of specified tasks and improve the police's capacity to react to the nation's shifting circumstances of crime and public order (Caparini and Marenin, 2004).

On December 8, 1991, the newly adopted Constitution of Romania came into effect. In addition to incorporating and expressing a new, clear, and reforming vision for democracy and human rights, social justice, and justice and humanity that aims to overcome the oppressive and inhumane measures that history has shown to be ineffective and disruptive of the balance between civil society and the state, it also declared the Romanian State to be democratic and governed by the rule of law.

A first step toward reform was the passing of Law No. 40/1990 On the Organization and Operation of the Ministry of Interior. The Ministry of Interior assumed the role of the main executive branch, with the authority to implement laws pertaining to public order, the defence of fundamental freedoms and rights, public and private property, the prevention and investigation of criminal activity, and the preservation of Romania's independence, sovereignty, and territorial integrity (Romanian Parliament, 1990).

There was a change after 1996, with the police and civil society putting more pressure on the government to carry out changes. However, at that time, the costs of reform outweighed the potential for change, thus the government took a cautious and cautious stance. The Romanian police system currently consists of three forces: the 52,000-personnel in the Romanian Police, 18,000-person in the Romanian Gendarmerie, and 20,000-person Public Guards, who are community police and work under local government. All three forces are responsible for maintaining public order (Caparini and Marenin, 2004).

The reform strategy's primary goals were to improve communication, depoliticize, demilitarize, decentralize, be transparent, partner with the community and encourage it to help achieve its own security, establish an effective and democratic accountability system, uphold professional ethics and human rights, and achieve interoperability with comparable organizations from other European states and beyond (Hinţea *et al.,* 2002).

The new Law on the Organization and Functioning of the Romanian Police was enacted in 1994. The 1994 Law (no.26/1994) harmonized the powers, authority and limitations on the police with the provisions of the 1991 Constitution. The 1994 Law on the De-politicization of the Police System included a constitutional clause that forbade police officers from belonging to political parties or organizations. Despite this, the Constitution still protects the freedom to vote. This was another significant step. This notion obviously necessitated the creation of safeguards to guarantee the system's immunity and resistance to any demands from outside political players (Amnesty International, 1998). After the adoption of the Law of 1994, the Romanian

Police thereafter started a major reform program. To prepare for Romania's entry into the European Union and other Euro-Atlantic structures, the main strategic directions included turning the Romanian Police into a civilian institution, improving its operational response capability, altering the organizational culture, maximizing resource utilization, and concentrating international efforts on police reforms (Amnesty International, 1998).

In order to ensure effective logistical support, manage human resources and protect personnel, decentralize decision-making and resource allocation for increased efficiency, modernize working methods to meet the requirements of a democratic society, cooperate with public authorities from various sectors, introduce new efficient instruments for police work management, and increase interoperability with similar bodies of the European Union for regional stability, these strategic activities aimed to achieve these goals. The European Code of Police Ethics was incorporated into Romanian law in 2002 with the Law on the Organization and Functioning of the Romanian Police (Romanian Parliament, 2002). It placed an emphasis on providing services to the public and broadened the police's conventional responsibilities to include stopping and opposing acts of terrorism, illegal immigration, and the trafficking of radioactive materials. Law No. 218/2002 reduced the police's dependence on coercion by transforming their function into a public service mechanism (Romanian Parliament, 2002). The first piece of legislation governing the police officer profession and its relationships with other professional communities was the Law on the Status of the Police Officer.

5. DEMILITARISATION OF THE ROMANIAN POLICE

An unprecedented endeavour in Southeast Europe is changing the role the police will play in Romanian society, i.e., the role of becoming a public service without sacrificing the police's judicial function. It was predicated on the idea that civic values are most likely to be upheld by a police force that competently responds to demands from the public. Furthermore, there are significant differences between the legal responsibilities placed on police in a democratic society to protect an individual's civil and political rights and those placed on military troops (Caparini and Marenin, 2004).

Legislative actions aimed to rebuild the Romanian Police by continuing the reorganisation and restructuring process, eliminating parallelisms and intermediary links among police structures, reducing bloated agencies, and increasing interoperability with similar EU agencies. The goal was also to align the new organisational charts with similar structures of advanced democratic states, as per European bodies' recommendations, and increase operational efficiency through rational personnel redistribution (Pișleag, 2020).

The Romanian Police was reorganised into three components: Judiciary Police, Public Order Police, and Administrative Police. New structures were

established, including the Institute for Crime Research and Prevention, the Division for Human Rights, specialised Brigades for Countering Organised Crime, and cross-border crime units. The Road Police Brigade was established to control roads and traffic, and some functions were transferred to other bodies. The national EUROPOL office was established for the Romanian Police to participate in European Community activities for countering organised crime. A National Body of Police Officers will be established as a legal, autonomous, apolitical, and non-profit institution to organise police officers by professionalism criteria and to promote and defend their rights.

The Territorial Authority for Public Order was a new organization created under the Law on the Organization and Functioning of the Romanian Police to include the community in developing its own security framework. The significance of appropriate human resource management is also emphasized by the law. It seeks to replace the outdated image of the police officer as a military, equipped with all tools of coercion and repression and expected to obey commands without question, with that of the police officer as a citizen, who is approachable and possesses human traits. Over half of the Romanian police officers who had served during the communist era left the country after 1989. Most of them retired ahead of schedule and received compensation, while the remaining portion sought to leave the system to pursue other employment opportunities, based on their foundational training from public or private institutions. The only people in the Romanian police who could demonstrate they had nothing to do with the atrocities committed by the Communist Regime were still there (Caparini and Marenin, 2004).

The Ministry of Interior's educational system in Romania underwent a significant reconstruction, transforming the School for Active Officers into a university-level institution, the Alexandru Ioan Cuza Police Academy. The academy offers four-year courses for training police officers, gendarmes, fire fighters, and archivists, with graduates receiving a BA-equivalent degree. It also offers two-year post-university courses and a six-year Ph.D. degree in police specialities. The new Law on the Organisation and Functioning of the Romanian Police emphasized the protective role of the police and established new directions for police work and personnel training, focusing on crime prevention, countering organised crime, humanitarian law, and human rights (Academia de Politie "Alexandru Ioan Cuza", 2012). Efforts were made to balance leadership and line positions, redistribute personnel according to specific problems, decrease personnel's average age, increase their quality and compatibility with tasks and missions, hire minority nationals, and increase the rate of women in the police forces. As a result, the number of Romanian police personnel increased by 68 percent compared to 1989, and relations between police officers and citizens were aligned with European Union standards (Romanian Police, 2014).

6. POLICE ROMANIAN IN DOMESTIC AND INTERNATIONAL RELATIONS

One of the primary role models in society is the police officer, who acts to protect and serve the interests of the populace. Although this line of work is unique, it is a complicated one that touches on many topics, including society. Given that the police are the state's governing authority and the face of law and order, they must maintain constant touch with the public and maintain an outstanding reputation. The crucial role of the police in a community, is that their effectiveness is derived from societal acceptance and support. The need for a high degree of trust and confidentiality to foster cooperative relations between society and the police, is a challenging goal to attain (Paşniciuc, 2017).

Society pays close attention to the actions of police officers and takes strong offense at any divergence in behaviour, no matter how slight. When a citizen attempts to create an opinion about him or the organization he represents, his actions are scrutinized and will carry significant weight. These days, a growing number of police officers have completed law school and are better educated. They interact with judges, prosecutors, and attorneys on an equal footing, understanding the law and the facts of the case. Furthermore, there are more people who are feared because they would never breach the law and will track down those who do, no matter what, and they will hold offenders responsible for their actions (Kadar, 2001).

The public image of the Romanian Police varies among individuals due to personal opinions. With Romania’s democratization, trust in the police has gradually increased, improving the institution’s image. Several factors influence this perception, and research has been conducted to identify elements that could sway it positively or negatively. Minorities often do not significantly influence the public image of state institutions due to their lack of power. However, studies have shown that minorities can impact societal perceptions, often negatively, as they frequently encounter legal issues or feel disenfranchised, leading to a decrease in trust in the police. Numerous elements contribute to the perception of the Romanian Police, and the public must consider not only the errors committed by those employed by this organization but also the outcomes of the missions these officers have completed. Democracy will, at most, stall or perhaps vanish if faith is lost, and society will no longer be able to advance. Without the assistance of the police, a democratic state is impossible. Criminal organizations will continue to grow and endanger public safety if residents refuse to engage with this agency and have no faith in its services.

The International Police Cooperation Centre, under the General Inspectorate of the Romanian Police, is a national authority specializing in sharing intelligence to combat international crime. It ensures operational connections between Romanian authorities and foreign law enforcement through liaison officers and channels like Interpol, Europol, and the Schengen

Information System. The Centre maintains links with the Centre for Law Enforcement in Southeast Europe, funded by the EU or their own projects, are directly accessible to ground-level police officers (Dontu, 2014).

In 2012, the Centre actively participated in the exchange of police information. They brought 1258 people into the country, identified 5966 people and 1834 vehicles subject to Schengen Information System alerts, and located 3843 people in Romania subject to these alerts. They also watched over 1067 people, with 1047 taken on the European arrest warrant and 20 extradited and transferred 191 people to serve penalties handed down by foreign courts (Gerspacher, 2005).

The Interpol National Bureau of Romania, established on January 10, 1973, operates within the General Inspectorate of Romanian Police as a national support point for international police cooperation. It plays a crucial role in overcoming obstacles in international police cooperation due to differences in national police structures, language barriers, and legal systems. The Bureau carries out police operations on national territory as requested by other ICPO - Interpol Member States and provides access to the Interpol General Secretariat's database (Gerspacher, 2005).

The National Focal Point (NFP), established on December 1, 2000, is a specialized structure of the Centre for International Police Cooperation. It ensures operational connections between Romanian and foreign authorities and manages information flow on operations conducted by international police cooperation specialized structures of the Ministry of Internal Affairs. The NFP also ensures operational cooperation between the Ministry and the Ministry of Finance, General Directorate of Customs, and corresponding agencies in states participating in S.E.C.I. (Dontu, 2014).

To intensify cooperation with EU countries, a Cooperation Agreement was signed between Romania and the European Police Office (EUROPOL) on November 25, 2003, ratified by Law no. 197/2004. The NFP was designated as a specialized unit within the Ministry of Internal Affairs to act as the national contact point for Europol according to EU standards on February 15, 2004. On November 25, 2003, a cooperation agreement was signed and ratified between Romania and the European Police Bureau, as per Law no. 197/2004. This law established methods and procedures for the National Bureau of Europol, aiming to align the Romanian Police's institutional and operational capacity with EU standards and implement best practices in policing and combating organized crime. The law defines the purpose, areas of cooperation, information sharing and supply by Romania, provision of personal data by Europol, evaluation of sources and information, confidentiality procedures, representation of liaison officers, responsibilities assumed by Romania, and dispute resolution methods (Gerspacher, 2005).

The Europol National Unit focuses on exchanging information related to various crimes, including financial crimes, drug trafficking, human trafficking, smuggling, murder/kidnapping, serious property damage, trafficking of nuclear and radioactive materials, environmental crimes, theft, and terrorism. Assistance requests can only be made when there is reliable information about the involvement of criminal groups in Romania (Popescu, 2014). Cooperation may also involve other Europol competencies, such as exchanging knowledge, reports, investigation procedures, preventive methods, and providing advice and support in criminal investigations.

7. CONCLUSION

Reforming has not been simple. With all the uncertainties and challenges of a fresh start, Romanians had to relearn democratic principles and learn how to execute them after fifty years of an authoritarian administration that cut Romania off from the democratic world. There were various barriers to overcome, some of which were objective in the form of financial resources and others of which were subjective in nature and stemmed from the attitudes of both the public and police personnel. Other barriers included the lack of a collaborative culture and a model to follow.

The primary causes of the Romanian police's dysfunctions include a lack of management, political influence, slow legislation, and a failure to alter police officers' mindsets. Despite these obstacles, studies showing a 48 percent trust rate, and the police ranked as the fifth most trusted state organization indicate that the reform of the Romanian police is deemed effective.

Romania has a low crime rate per 100,000 people, comparable to democratic nations like Austria, Switzerland, and Germany, demonstrating the effectiveness of the reforms. After overcoming the transitional phase, the changes are almost finished, along with ongoing attempts to integrate Europe and complete the concept of community policing.

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THE IMPACT OF EUROPEAN REGULATIONS ON ENVIRONMENTAL PERFORMANCE OF EU COUNTRIES: A COMPARATIVE ANALYSIS

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Abstract
Since the adoption of the European Green Deal in 2020, the European Union constantly tried to improve its environmental protection policy, aiming to develop a climate-neutral economy that will help Europe to become the world's first 'climate-neutral' continent, with net zero GHG emissions by 2050. Indeed, according to 2022 estimates, the EU has successfully reduced its GHG net emissions by 31% since 1990, meeting its 2020 targets without sacrificing its prosperity. The use of renewable energy and the increase of energy efficiency proved to be of paramount importance for cutting down pollution.
Even though, so far, progress has been made by Member States, the achievement of climate neutrality by 2050 imposes a faster pace on them. Still, their policies, strategies, programs and measures need to be well-synchronized in content and timing to curb climate change and protect prosperity. To measure the results and to anticipate future efforts require adequate tools. One of these is the environmental performance index (EPI), a complex global environmental indicator based on 40 performance indicators grouped into 11 issue categories, which are tracking progress on three broad policy objectives: environmental health, ecosystem vitality, and climate change.
The objective of the paper is to analyze the environmental performance of the European Union (EU) countries, measured according to the environmental performance index (EPI), in order to highlight the impact of the European regulations and how these contributed to better environmental performance, taking into consideration the fact that demanding environmental policy is associated with greater competitiveness and more eco-innovation, according to the European Environment Agency (EEA).
Keywords: *environmental protection; environmental performance index; European Green Deal; EU regulations.*
JEL Classification: F64, Q01, Q58.

1. INTRODUCTION

In September 2015, all United Nations Member States adopted the 17 Sustainable Development Goals (SDGs) (United Nations, 2024), which provide a blueprint for peace and prosperity addressing global challenges, including poverty, inequality, climate change, environmental degradation, peace, and justice (Hope Sr, 2020). Curbing climate change through the transition towards a climate neutral economy remains also a primary goal for the European Union (EU). During the last ten years significant progress has been made by the EU to reach a sustainable, environmental friendlier economy.

Thus, in December 2019, the EU Member States adopted the European Green Deal (EGD), which is the EU's growth strategy, and it aims to transform the Union into a climate-neutral society (Eurostat, 2023a). From the 17 SDGs goals, 12 are the European Commission priorities included in the EGD, respectively: SDG 2 – Zero Hunger; SDG 3 – Good Health and Well-Being; SDG 6 – Clean Water and Sanitation; SDG 7 – Affordable and Clean Energy; SDG 8 – Decent Work and Economic Growth; SDG 9 – Industry, Innovation and Infrastructure; SDG 10 – Reduced Inequalities; SDG 11 – Sustainable Cities and Communities; SDG 12 – Responsible Consumption and Production; SDG 13 – Climate Action; SDG 14 – Life Below Water; SDG; 15 – Life on Land (Eurostat, 2023, p. 21).

The Environmental – "E" component of sustainable development addresses issues related to climate change, resource use, waste management, and environmental conservation (Senadheera *et al.,* 2021). The "E" component directly aligns with SDGs such as: SDG 6 - Clean Water and Sanitation, SDG7 - Affordable and Clean Energy, SDG 13 - Climate Action, SDG 14 - Life Below Water and SDG 15 - Life on Land.

Since the adoption of the EGD, the EU constantly tried to improve its environmental protection policy, aiming to develop a climate-neutral economy that will help Europe to become the world's first 'climate-neutral' continent, with net zero GHG emissions by 2050. Indeed, according to 2022 estimates, the EU has successfully reduced its GHG net emissions by 31% since 1990, meeting its 2020 targets without sacrificing its prosperity. The use of renewable energy and the increase of energy efficiency proved to be of paramount importance for cutting down pollution.

The EU legal necessary framework regarding climate change adaptation and mitigation was set up under 2023 "Fit for 55 package", with the purpose of reducing domestic net GHG emissions with 55% by 2030 from 1990 levels. Despite its efforts so far, the EU goal for 2030 seems too ambitious. The European Environmental Agency (EEA) in its five years overview report, which quantifies the state of the environment, draws attention on the unprecedented environmental challenges EU faces in terms of scale and urgency. The increased impact of climate change, biodiversity loss and the depletion of natural resources

generated by overconsumption are the main concerns at this time. The agency warns that if not properly addressed at a faster pace during the next years, these persistent problems will prevent the EU from meeting its 2030 target. Europe needs to rethink "not just technologies and production processes but also consumption patterns and ways of living" (European Environment Agency, 2019, p. 331). The changes need to be systemic to not only take the pressure off the environment and slow down climate change but also protecting biodiversity and ecosystems and human health as well.

The EU 8th Environmental Action Programme (EAP) that builds on the EGD, includes these goals as long-term thematic priority objectives for 2050 of living well on the planet, which remains the main long-term one. Since 2023, the EEA monitors 28 EAP headline indicators and corresponding monitoring targets, showing that the EU has registered some progress but, it also shows a moderate and high degree of uncertainty in respect to meeting these targets.

In this context, according to the 2023 EEA first monitoring report (European Environment Agency, 2023a) it is highly unlikely for the EU to meet five of the targets by 2030 when it comes to climate change mitigation, namely GHG emissions from land use, land change and forestry; environmental and climate pressure related to EU production and consumption, namely energy consumption, circular material use rate, area under organic farming; living well, within planetary boundaries, namely consumption footprint. Fifteen out of the 28 monitored targets are unlikely but uncertain, 3 out of 28 are likely to be met but uncertain and 5 out of 28 are very likely to be met by 2030.

The EEA report shows that there is an obvious gap between the current projection levels and the target. This is the result of the slow and uneven pace at which EU Member States are implementing current policies and acting for reducing emissions. Member States are still in the process of updating their National Energy and Climate Plans but, at the same time, their policies and measures should extend to all socio-economic sectors if they want to meet the 2030 target. It is necessary to improve Environmental Performance Index (EPI) through regulations based on the Green Deal and improved, transformative legislation based on the pillars of "Fit for 55 package".

The objective of this paper is to emphasize the way EU Member States are trying and succeeding to improve their environmental performance.

The paper is organized as follows: the Introduction is Section 1. Section reviews the literature regarding the European Green Deal and the environmental performance to highlight the importance of the topic and the contribution of EU EDG to improve its environmental performance. Section 3 presents the methodological approach. Section 4 discusses the research results and Section 5 concludes the paper.

2. LITERATURE REVIEW ON EUROPEAN GREEN DEAL AND ENVIRONMENTAL PERFORMANCE

The European Green Deal (EGD) is a much-discussed topic in specialized literature, through the lens of its coherence and its effects in terms of direct actions and synchronization of Member States to achieve a decarbonized economy, largely based on sustainable development and climate change policy objectives.

In his paper, Montini (2021) criticized the EGD's lack of coherence because according to him, the policy package contains a variety of parallel and concurrent goals that will be hard to achieve in a fixed time frame without integrating them all within a single and comprehensive policy and legal framework concerning environmental protection. For this reason, he argues that to be successful, the transition to a green economy needs to be based on the principle of environmental integration enshrined in Article 11 TFEU: "Environmental protection requirements must be integrated into the definition and implementation of the Union policies and activities, in particular with a view to promoting sustainable development". This principle seems to be forgotten by the EU decision makers. His opinion is supported by other studies. For example, Jans (2021) argues that from a legal point of view, if used, the principle could help to overcome the constraints placed upon EU institutions by the principle of conferral to promote environmental protection objectives when decisions are taken in the framework of policies such as common commercial market, transport, energy, agriculture, trade etc. Also, the principle gives the possibility to interpret EU law outside the specific environmental field and thus, to successfully promote the environmental protection objectives.

Pisari-Ferry *et al.* (2023) analyzed the efficiency of the EGD and concluded that its implementation will face major political and social difficulties. The EU green transition will be slowed down for two reasons. The first one is the lack of coordination because key policies, especially energy ones, do not exist at EU level, but are mostly national. In this respect, the EGD does not improve the EU's energy and climate governance framework. The second reason for potential failure is the need to make profound changes to lifestyles that will have distributional consequences, affecting households unequally, and thus, leading to a political backlash, which is already happening in the EU.

The Green Deal also aims at promoting sustainable finance and sourcing. Green Deal Investment Plan (EGDIP), also known as the Sustainable Europe Investment Plan, from January 2020, is set to facilitate the implementation of Green Deal policies by supporting sustainable investments through the EU budget, creating a supportive investment framework for green investments in the public and private sector and bringing administrative support for sustainable projects. The European Commission decided that 500 billion euros will come

directly from the EU budget, while most of the remaining funds will be mobilized through the investment programme InvestEU (Feting, 2020).

In this respect, some studies show that there are hurdles in achieving these financial goals that are directly linked to the environmental efficiency of EU Member States. For example, Křemečková and Šreflová (2024) considered to be such challenges the paucity of reliable and consistent data regarding environmental and social performance, the lack of standardization in the sustainable finance, the lack of awareness among investors and corporations regarding the significance of sustainable finance and the absence of comprehensive regulatory frameworks that can favor the proliferation of unsustainable practices.

Another issue brought up by specialists is the access to funding sources in order to achieve carbon neutrality envisioned in the Green Deal. According to Negreiros and Falconer (2021), to boost the EU environmental performance, it is essential for cities in the EU to have direct access to funds for low-carbon infrastructure investments. It is known that financing available for EGB implementation comes from EU funds and institutions. So, key improvements would be to simplify and expand the access modalities for EU funds and to make more direct access funding channels available to EU cities.

Environmental performance is the subject of a significant number of studies. However, only some of them focus on interactions between indicators or the influence of one indicator over others. An example of such study is the one conducted by Puertas *et al.* (2022), focusing solely on measuring the eco-efficiency, meaning the use of fewer natural resources to satisfy human needs, with a focus on production and death due to pollution. The analysis is extended to 20 EU Member States, over four years, between 2014–2018. Based on Data Envelopment Analysis (DEA) and the Malmquist Index (MI), the study reveals that almost all of them had a good environmental performance unconditioned by their wealth or their economic growth. However, out of the twenty EU members, the Eastern European ones show the most room for improvement.

An example of a more extensive study is the one conducted by Matsumoto *et al.* in 2020 that evaluates the environmental performance of all EU Member States using the data envelopment analysis (DEA) approach and the global Malmquist-Luenberger index, but also considering different types of undesirable outputs such as carbon dioxide and particulate matter emissions, and waste and using panel data on EU countries during the period 2000-2017. The results of this research revealed that the trends in the environmental performance of the entire EU and its individual Member States were similar. Environmental performance, especially the one of eastern EU countries, was negatively affected by the financial crisis of 2007-2008, but Member States overall efficiency was significantly influenced by economic and environmental variables. However, EU

countries experienced an improvement in their environmental efficiency during the studied period.

Similar studies are analyzing a multitude of environmental performance indicators, over extensive periods of time. Thus, Stoian *et al.* (2022) demonstrate that EU environmental performance is influenced by a myriad of factors, their impact being analyzed using data collected between 2010 and 2020, once in 2 years and by using a panel data model. The results show that a positive relationships exists between EPI scores at EU level and organic farming, circular material use rate, Eco innovation index, energy productivity, ratio of female-to-male labor force participation rate, forest area, Human Development Index, Internet users, livestock production index, new business density, patent applications-residents, tertiary school enrollment, the share of renewable energy consumption in gross final energy consumption, and the proportion of seats held by women in national parliaments. At the same time, results show that higher inequality between individuals, natural resources rents, trade volume index, and environmental taxes in total tax revenues constrain the EU's environmental performance.

Resuming, studies show that the European Green Deal has opened a path towards a decarbonized economy and EU Member States made good progress towards its goals. However, the environmental performance is linked to a multitude of social and economic sensitive factors that need to be carefully considered to reach sustainability.

3. METHODOLOGY AND DATA

For achieving our purpose, we have included all the 27 EU countries, namely: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden.

The data for SDGs was collected from Eurostat (Eurostat, 2023a; Eurostat, 2024) for a period of five years (2016–2021 or 2017–2022, according to data availability), while the data for Environmental Performance Index (EPI) and projected emission in 2050 were collected from the web page dedicated to Environmental Performance Index (Block *et al.*, 2024).

The 2024 Environmental Performance Index (EPI) is a comprehensive environment index that provides a summary of relevant data revealing the state of sustainability around the world, including EU Member States, which is our sample of countries to be analyzed. The EPI is evaluating and ranking 180 countries based on climate change performance, environmental health, and ecosystem vitality. The 58 performance indicators across 11 issue categories are used to provide a national scale indicator of how close countries are to meet the environmental policy objectives. Thus, the EPI ranks countries by score,

highlighting the leaders and laggards in environmental performance and providing practical recommendations for those that want to move towards a more sustainable future.

Table 1. Descriptive statistics – EPI

No.	Rank	Country	2014 EPI	2024 EPI	EPI (10 years change)
1.	1	Estonia	58.0	75.3	17.3
2.	2	Luxembourg	70.9	75.0	4.1
3.	3	Germany	70.2	74.6	4.4
4.	4	Finland	65.4	73.7	8.3
5.	6	Sweden	68.9	70.5	1.6
6.	8	Austria	69.3	69.0	-0.3
7.	10	Denmark	66.1	67.9	1.8
8.	11	Greece	59.2	67.4	8.2
9.	12	Netherlands	62.4	67.2	4.8
10.	13	France	65.5	67.1	1.6
11.	14	Belgium	61.5	66.7	5.2
12.	15	Malta	59.0	66.6	7.6
13.	16	Ireland	63.6	65.7	2.1
14.	17	Czech Republic	64.9	65.6	0.7
15.	18	Slovakia	66.3	65.0	-1.3
16.	19	Poland	61.9	64.4	2.5
17.	21	Spain	62.8	64.2	1.4
18.	22	Lithuania	58.4	63.9	5.5
19.	24	Croatia	59.9	62.6	2.7
20.	25	Slovenia	63.7	62.5	-1.2
21.	26	Portugal	59.8	62.2	2.4
22.	29	Italy	56.6	60.5	3.9
23.	30	Hungary	62.5	60.1	-2.4
24.	31	Latvia	57.7	59.9	2.2
25.	35	Romania	59.8	57.2	-2.6
26.	37	Bulgaria	58.0	56.3	-1.7
27.	43	Cyprus	53.4	54.0	0.6

Source: author calculation, based on Environmental Performance Index, https://epi.yale.edu/measure/2024/EPI

The descriptive statistics for EPI and the change registered in its value in the last ten years for EU Member States are presented in Table 1. The index

score countries on a 0-100 scale, from worst to best performance. In Table 1, countries are ranked according to 2024 values for EPI, from highest to lowest.

Table 2. Descriptive statistics – projected emissions in 2050

No.	Rank	Country	Score	10 years
1.	1	Estonia	100	75.0
2.	1	Finland	100	70.9
3.	1	Greece	100	82.1
4.	12	Malta	57.7	13.6
5.	22	Luxembourg	47.5	9.1
6.	31	Denmark	40.5	-59.5
7.	45	Latvia	33.7	0.5
8.	46	Slovenia	33.6	-1.7
9.	48	Cyprus	33.4	-2.8
10.	61	Croatia	28.9	0.2
11.	62	Lithuania	28.8	0.3
12.	73	Sweden	25.7	-3.7
13.	77	Portugal	24.7	0.4
14.	80	Slovakia	23.6	-8.0
15.	95	Bulgaria	21.4	-3.8
16.	99	Austria	20.6	-3.8
17.	102	Ireland	20.5	-9.6
18.	108	Belgium	19.8	-4.8
19.	111	Hungary	19.4	-80.6
20.	115	Czech Republic	18.6	-2.7
21.	115	Netherlands	18.6	3.2
22.	121	Romania	17.1	-12.9
23.	130	Germany	14.9	11.5
24.	141	France	12.8	0.6
25.	142	Spain	12.5	-2.1
26.	150	Italy	9.2	1.2
27.	154	Poland	7.7	-0.9

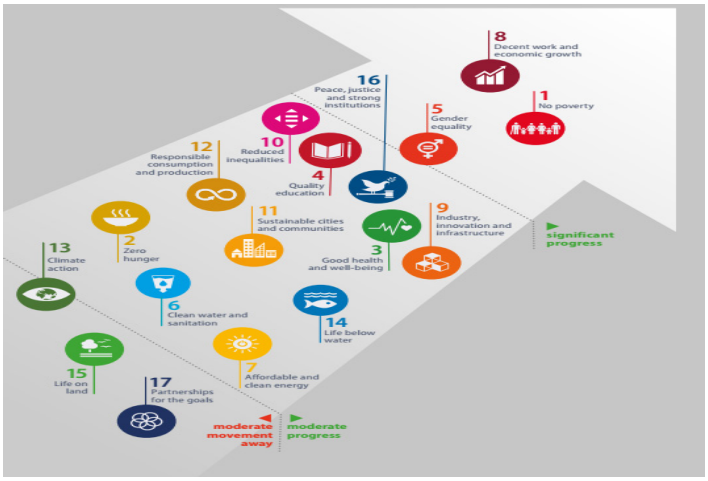
Source: author calculation, based on Environmental Performance Index, https://epi.yale.edu/measure/2024/GHN

The descriptive statistics for projected emissions in 2050 and the ten years change are presented in Table 2. This indicator captures whether countries are on track to reach zero emissions of four greenhouse gases by 2050. In Table 2,

countries are ranked according to projected 2050 emissions and a score equal to or below zero receive the maximum score.

4. RESULTS AND DISCUSSION

The European Union (EU) has fully committed itself to delivering on the 2030 Agenda, and the SDGs form an intrinsic part of the European Commission's work programme. The EU member states are implementing the SDGs regarding the environment, considering the EDG requirements. In this context, in 2023, the European Commission published voluntarily its first review on the implementation of the 2030 Agenda at the United Nations' (UN) High-level Political Forum held in July 2023.



Source: Eurostat (2023)

Figure 1. Overview of EU progress towards the SDGs *

Regarding the "E" goals – SDG6, SDG7 and SDG14 – from Figure 1, we can see that the progress was less significant. Trends in the areas of clean water and sanitation (SDG6), affordable and clean energy (SDG7) and life below water (SDG14) were moderately favorable at EU27 level. Regarding climate action (SDG13) and life on land (SDG15) is expected more progress, because the 2023 Report (Eurostat, 2023a) showed moderate movement away from the targets. In the case of SDG13, according to provisional estimates for 2021, the EU has reduced its net greenhouse gas emissions by about 30% since 1990 (Eurostat, 2023b). Considering the last report on progress towards SDGs (Eurostat, 2024), the EU's per capita emissions were one of the lowest among other high-income economies, but higher than the world average. In this context, considering the EU ambitious and unparalleled climate targets for 2030, and

compared with past trends, reducing greenhouse gas emissions will require more effort. Additional measures have been implemented through the "Fit for 55 package". In the case of SDG15, concerning life on land, even were reported the increase of terrestrial protected since 2013, additional efforts are still needed to reverse the degradation of ecosystems.

Although data in the figure mainly refer to 2016–2021 or 2017–2022, there is no doubt that SDG implementation comes with its own set of challenges and issues that need to be addressed in policy and institutional research over the years to come (Nilsson and Persson, 2017). On the other hand, the EPI represents an important policy tool to meet the targets of the SDGs, showing to the countries how close they are to established environmental policy targets. EPI scores are positively correlated with a country's wealth, although after a point, scores show that wealth yields are diminishing and register an increase. However, at each level of economic development, there are some countries that outperform their peers, while others stay behind.

On one hand, wealth allows countries to invest in the infrastructure needed to provide clean drinking water, safely manage waste, and rapidly expand renewable energy. On the other hand, wealth also leads to greater consumption of resources and its associated environmental impacts, such as higher rates of waste generation, GHG emissions and ecosystem degradation.

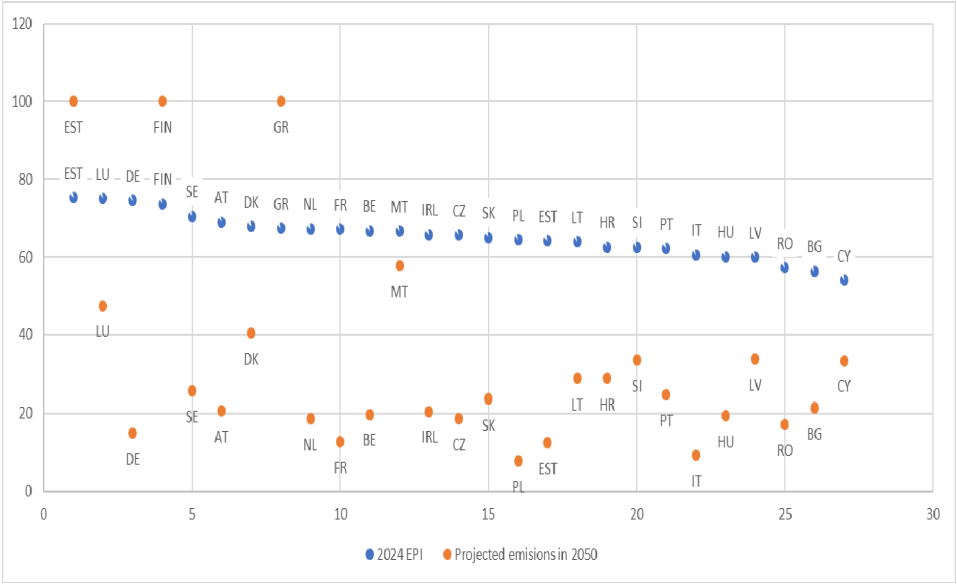
As we can see from Table 1, the change registered in the last ten years regarding EPI score show the progress toward mitigating climate change, improving environmental health, and protecting ecosystem vitality for most EU countries, with the exception of six countries, most of them being countries that became EU members in 2004 and 2007. Estonia, Luxembourg and Germany are the most successful at addressing a wide variety of global environmental challenges, while Romania, Bulgaria and Cyprus are at the bottom of the ranking. Even most of the EU countries improved their EPI in accordance with the record deployment of renewable energy, which is associated with a higher environmental performance, the 2024 EPI analysis of emission trends over the last decade shows that only five countries (three EU member states) — *Estonia*, *Finland, Greece*, Timor-Leste, and the United Kingdom — cut their GHG emissions at the rate needed to reach zero emissions by 2050 (Block et al, 2024, p. IX). Even so, it is not certain that the mentioned countries can maintain the pace of reduction that they achieved in recent years to fulfill the 2050 target.

The environmental performance of EU countries is a good one. The 2024 EPI overall ranking shows that they occupy the top 20 positions (Block *et al.*, 2024). These top ranked Member States have indeed comprehensive environmental policies, relying on strong regulations and financial investments. However, even these countries also have important gaps to fill since none of them scores above 80 in the overall 2024 EPI, showing that the success of reaching sustainability is still far ahead. For example, based on the 2024 EPI's

pilot indicators of protected area stringency and greenhouse emission reductions relative to allocated shares of the remaining carbon budget, many of the top ranked European countries registered a modest environmental performance. Even though these pilot indicators receive a low weight in the EPI, they indicate the need for significant improvement.

Despite this shortcoming, Estonia is the first Eastern European country that reached the top position of the 2024 EPI overall ranking, and it has also earned the top score on the Climate Change policy objective. Also, Estonia has managed to reduce by 40 percent its greenhouse gas (GHG) emissions during the last ten years (Block, 2024, p. 11). Regarding the projected emission levels in 2050 (Table 2), we notice that at this pace, Estonia could reach zero emissions by 2050 (Table 2) without exceeding its allocated share of the remaining carbon budget (Block, 2024, p. 37).

Figure 2 presents the EPI 2024 score for EU member states and the projected emissions in 2050. We can see that in the case of EPI all EU countries are registering appropriate values between 54 and 75.3, in the case of emissions is not occurring the same. There are clear differences, and we can observe three groups: the first one includes Estonia, Finland and Greece, the second group includes Malta, Luxembourg and Denmark and the third group which consists in the remain countries.



Source: elaborated by the authors

Figure 2. EPI score and projected emissions in 2050

5. CONCLUSIONS

This paper investigated the environmental performance of the EU Member States, based on the environmental performance index (EPI), with the objective to highlight the impact of the European regulations, especially of the EGD, and how these contributed to better environmental performance, including to the progress in accomplishing the SDGs targets.

We consider that this comparative perspective can offer a better understanding of the environmental progress determinants, and it can help refining policy choices for EU Member States on their way towards sustainability. To achieve climate neutrality by 2050 by reducing GHG emissions at the pace needed will require significant and ongoing investments in renewable energy, transforming food systems, electrifying buildings and transportation, and redesigning cities.

Moreover, to accomplish the objectives of the EGD and to respond to the 8th Environment Action Programme which aims to accelerate the green transition, the EU must also increase environment- and climate-related expenditure (European Environment Agency, 2023b) as additional funds will be made available through the EU's 2021-2027 budget and the 2021-2026 EU Recovery and Resilience Facility (RRF).

Further research can analyze the contribution of increased environmental expenditure to improve EPI scores.

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IMPROVING ORGANIZATIONAL RESULTS IN THE CONTEXT OF GENDER DIVERSITY IN TOP MANAGEMENT

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Abstract
In discussions about organizational performance, an essential topic is gender differences in top management, as the individuals responsible for the governance of the organization can contribute to its financial sustainability and risk-taking. This has also led to the purpose of our study, to explore the influences that these differences exert on organizational performance. Specifically, the study uses a literature review to identify relevant theoretical perspectives and empirical findings, highlighting the connections between gender diversity and organizational outcomes, with a particular focus on analysing gender diversity in top management. Also, by means of a bibliometric analysis, the main research directions and concerns related to gender diversity in organizational contexts are identified.
Keywords: *organizational performance; male leaders; female leaders; top management; gender diversity.*
JEL classification: M12, M14, M21, M48.

1. INTRODUCTION

Gender differences in top management have become crucial topics in the literature on organizational performance that explores how these differences influence the financial and operational performance of organizations. The performance of an organization can be measured or calculated through several indicators and tools, but of particular importance is the identification of factors that might influence the performance of organizations. In fact, achieving performance at the highest level is becoming more and more a challenge for any organization, due to the continuous development and growth of market standards, given by the provision of quality services and products, but also by the existence of the most performing workforce (Vosloban, 2012), the performance of an organization also depends on the management, respectively the effort of human resources. With the passage of time and the advancement of the female gender in several fields and even in top positions within an organization, like CEO, head of department, etc., the views on the gender gap in leadership have changed. Thus, entrepreneurs who are mainly responsible for leading organizations try to improve its performance through new strategies, plans and procedures throughout the life cycle of the organization (Hoque and Awang, 2019). Male entrepreneurs and female entrepreneurs differ in their management style due to different attitude, behavior, biological and cultural upbringing, and psychological differences (Robb and Watson, 2012). At the same time, there is a visible trend of increasing representation of women in top management of organizations around the world, supported by the fact that corporations with female CEOs make better decisions for shareholders, with gender playing a vital role in organizational performance (Huang and Kisgen, 2013).

Theoretical perspectives on the influence of gender differences on organizational performance will be addressed in the methodological approach of the literature review, which will discuss the key definitions and concepts related to gender diversity in organizational context, highlighting the significant works of important authors in the field. The bibliometric analysis approach has also allowed us to identify and analyse trends, patterns and main topics of interest in the scientific literature related to the influence of gender differences on organizational performance. By means of this analysis, we aimed to highlight the reference publications and authors in this field, to identify key words and concepts frequently used and to synthesize existing knowledge. Thus, we consider that through the methodological approach of the paper, the aim has been achieved, by investigating and understanding the complexity of gender differences within organizations and how they can influence their performance.

2. LITERATURE REVIEW

In the literature, various studies have shown that there are significant differences between the results achieved by organizations led by women and those led by men, also highlighting a relationship between gender diversity in top management and the financial performance of organizations.

Bringing women's rights in the workplace into the discussion, we know that European countries have been at the forefront in promoting women's rights in the workplace, with other countries following the trend with binding laws or recommendations (Wang *et al.,* 2018). One of the rights targeted by feminism is the right to better working conditions for women on the same level as men. However, many stereotypes are still present today, such as the manager being stereotyped as a masculine construct, which explains why women often do not occupy these positions (Chugh and Sahgal, 2007). Gender stereotypes are simplified generalizations about the roles and behaviours expected of women and men in society, which can lead to occupational segregation and gender inequality in labour markets, reinforce gender inequalities and result in a less socially equitable and inclusive society (Powell *et al.,* 2002). By recognizing and challenging these stereotypes, we can promote a culture of diversity and gender equality, where each individual is valued according to their real abilities and merits (Martiarena, 2022). Preconceived ideas and stereotypes continue to influence the perspective of women in business, even though women have demonstrated outstanding leadership skills, such stereotypes can limit their opportunities for career advancement or positions, leading to the prevention of objective assessment of each individual's skills and potential and perpetuating gender inequality in society, it is essential to combat these stereotypes and promote an organizational culture based on equal opportunities (Perryman *et al.,* 2016).

An analysis from an ethical point of view, shows that, if the occurrence of women increases, the organization's goal of balancing itself is autonomously achieved (Martínez and Rambaud, 2019), and from an economic point of view, it is argued that, women should be promoted according to their education and professional knowledge, so that the organization is not in a position to experience a decrease in its profitability (Robb and Watson, 2012). Research has found that, personal values, business strategy and performance of a company are influenced by the demographics of the owners/managers and not necessarily their gender (Rosemond *et al.,* 2008).

The presence of women in top management of organizations would lead to gender diversity (Grosu *et al.,* 2023), a higher degree of gender diversity in management could result in "*building a good image*" of the organization *(Atty et al.,* 2018; Cumming and Leung, 2021) and also strengthen corporate governance mechanisms such as transparency and accountability due to their contribution to mitigating fraud (Capezio and Mavisakalyan, 2016).

If we bring into discussion the different fundamental theories that have underpinned the examination of how gender diversity might influence organizational performance, of note in this regard is the study by (Watson, 2012), who uses agency theory, resource dependence theory and the resource-based view of the firm in this research perspective. These theories provide essential conceptual frameworks for analyzing how gender diversity can influence performance at different levels of decision-making in organizations. Agency theory suggests that an increase in board independence and better monitoring of managers will result as a result of greater gender diversity; therefore, this theory is more directly related to the presence of board diversity and stock ownership (Lopez-Nicolas *et al.,* 2020), with an organization's effectiveness often being conditioned by governance practices and strategic decisions made at the board level (Hossain *et al.,* 2024). Second and third theories are can be associated with diversity in top management. Thus, the resource dependency theory argues that diversity can be a tool for accessing resources that are critical to the organization's success and improve its overall problem-solving ability. As for resource-based theory it focuses on the synergies that arise from the interaction between men and women and diversity as a source of competitive advantage (Francis *et al.,* 2015).

Although there are an increasing number of women in leadership positions, and many of these women serve as CEOs and directors (Gregory and Kleiner, 1991; Shenhav, 1992; Giscombe and Mattis, 2002; Helfat *et al.,* 2006), yet both racial minorities and women are traditionally underrepresented on both boards and in management positions (Jelinek and Adler, 1988; Rosener, 1995; Katzenbach, 1997; Shrader *et al.,* 1997; Miller and Del Carmen Triana, 2009; Best *et al.*, 2016; Saggese *et al.,* 2021; Huian *et al.,* 2024). Women and men in leadership positions often bring distinct traits and approaches that may influence how they fulfil their leadership roles. Thus, while women tend to be more concerned with issues such as concern, cooperation, and pragmatism in problem solving, men are often motivated by financial opportunities and profit, and are more likely to be risk takers and adopt a more autocratic leadership style (Powell, 1990; Powell *et al.,* 2002).

In the literature we find studies targeting gender differences and gender equality in entrepreneurship (Poggesi *et al.,* 2020), highlighting the impact of the presence of women in leadership positions on performance, although, gender differences still tend to favor men in various social institutions, especially in business (Nguyen *et al.*, 2021). Some studies show us that women are not risk-prone (Barber and Odean, 1998; Byrnes *et al.,* 1999; Farag and Mallin, 2017, 2015; Husain *et al.*, 2019; Tahir *et al.,* 2021), but are at least as good managers as men, if not better (Powell, 1990; Schwartz, 1989). Despite the entrepreneurship gap between men and women, it is widely believed that women business leaders have specific qualities that make them better entrepreneurs than

men with diversity potentially leading to increased organizational effectiveness and good performance as a result of a wider range of perspectives and more comprehensive decision-making (Gallego-Álvarez *et al.,* 2010).

We can appreciate that the literature reveals that gender differences significantly influence the performance of organizations. Gender diversity in top management can foster the development of an inclusive innovation strategy the economic value of such a strategy, showing that inclusive innovation positively influences performance (Del Mar Fuentes-Fuentes *et al.,* 2023) and also can improve decision making and organizational outcomes, according to agency and resource dependence theories. Also, effective management of gender diversity in corporate leadership can bring significant benefits to the organization, contributing to a better adaptation to market changes and enhancing its reputation and legitimacy (Soare *et al.*, 2021).

3. IDENTIFYING TRENDS IN THE RELATIONSHIP BETWEEN GENDER DIFFERENCES IN TOP MANAGEMENT AND ORGANIZATIONAL PERFORMANCE

In terms of whether there is a relationship between the percentage of women in the top management of organizations and their performance, three trends have been identified, namely: a positive relationship; a negative relationship; no relationship.

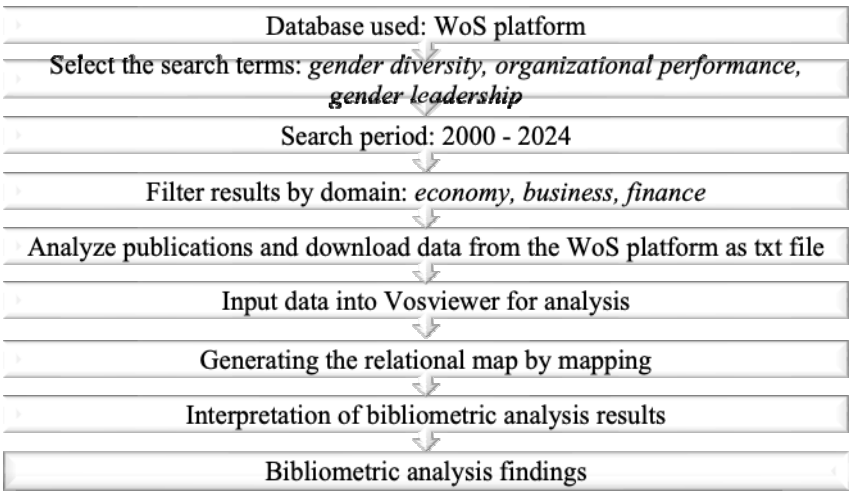
Flagship studies (Wiersema and Bantel, 1992; Blackburn *et al.,* 1994; Shrader *et al.,* 1997; Konrad *et al.*, 2008; Adams and Ferreira, 2009; Gul *et al*., 2011; Srinidhi *et al.,* 2011; Ongsakul *et al*., 2020) on the presence of women in the top management of organizations, i.e. gender diversity in the top management, show a positive influence on the economic and financial performance of organizations. In a study (Shrader *et al.,* 1997) of a sample of approximately 200 Fortune 500 firms, analyzing the relationship between the percentage of women on the board of directors and two accounting measures of financial value, it was shown that there is a significant negative relationship between the percentage of women on the board of directors and firm value in certain tests.

Studies (Dwyer *et al.,* 2003; Dimovski and Brooks, 2006) have shown that neither board composition nor board leadership structure are consistently related to the financial performance of organizations, showing that there is no direct relationship between gender diversity and organizational performance. Studies on gender in organizations reveal that although women may adopt different leadership styles than men, they are at least as effective in leadership positions, and it is widely believed that women business leaders have specific qualities that make them better entrepreneurs than men.

4. RESEARCH METODOLOGY

Using bibliometric analysis, as a process of statistical analysis, to quantitatively measure and evaluate the scientific literature through the existence of publications and research papers (Goyal and Kumar, 2021), the aim of this part related to the present study is to identify the most influential publications in this specific research field, which are aimed at the influence of gender differences on the performance of organizations. The use of such analyses have as a research objective to quantify the current state of knowledge in the field of the impact of gender differences on organizational performance, using available data from the scientific literature to identify and analyze trends, patterns and main topics of interest concerning the relationship between gender and organizational performance (Martinez-Jimenez *et al.,* 2020). Through the use of bibliometric analysis, a detailed picture of research directions, trends and existing gaps regarding the impact of gender differences on the performance of organizations (Vieira *et al.,* 2022), is outlined, thus contributing to the development of a solid framework for understanding and addressing this topic anchored in the present reality in organizations.

The methodology of bibliometric analysis involves searching and collecting data, processing them to extract relevant information, creating a network of terms, analyzing them and presenting them in the form of maps (Molina-García *et al.,* 2023). The research methodology that has been addressed in this part of the paper focused on the following steps presented in Figure 1:



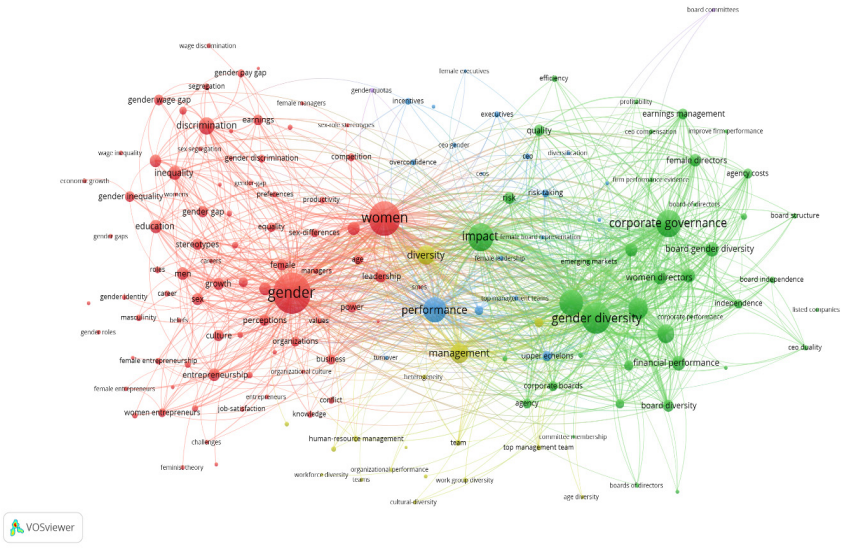
Source: own projection

Figure 1. The stages of carrying out the bibliometric analysis on the topic of gender diversity

In the steps taken to carry out the bibliometric analysis, the Web of Science platform was primarily used, where more than 4000 relevant works were identified for the topic of the influence of gender diversity on the performance of organizations, this representative number being selected after the elimination of irrelevant research fields. For a thorough and comprehensive understanding of the impact of gender diversity on the performance of organizations, the areas addressed were those of economy, management and finance.

5. RESULTS AND DISCUSSIONS

The impact of gender diversity on the performance of organizations has become a topic of interest both in the academic environment and in managerial practice, as organizations are increasingly concerned with identifying and implementing the most effective strategies and practices to improve their performance in an environment of increasingly competitive, and in this context, gender diversity can significantly influence the way organizations achieve their goals and manage their human resources. In the last decades, the number of publications related to the influence of gender diversity on the performance of organizations has registered a significant increase, thus showing interest in these topics of analysis, which recognize the importance of gender diversity in the context of business sustainability (Herghiligiu *et al.,* 2023).



Source: own projection in VOSviewer

Figure 2. The network of key terms relevant to the research of the influences that gender differences exert on the performance of the organization

In Figure 2 with the help of the *VOSviewer* program, a map was mapped, with the clear highlighting of the 4 resulting clusters and the links between them, presenting the central topics of analysis within the works, as well as the significant interdependencies related to the theme of *gender difference, management, corporate governance,* respectively *organizational performance*.

The resulting terms and links reflect the keen concern of researchers in the analysis of gender diversity within organizations and its impact on organizational performance (Mumu *et al.,* 2022), as well as the interest in leadership roles and responsibilities in the context of gender diversity (Bogdan *et al.,* 2023).

In Table 1, the results of the bibliometric analysis are centralized, where the four distinct thematic clusters and the connections between the terms of the analysed research topic are clearly highlighted.

Table 1. Types of clusters identified from the bibliometric analysis performed

Type of cluster	Identifying and classifying the type of cluster	Flag items found in the cluster	Defining aspects resulting from the cluster analysis
1. Red cluster	**The promotion of gender diversity in managerial culture of organizations**	*"gender", "gender diversity", "gender diversity management", "women", "women entrepreneurships", "female entrepreneurship" "gender inequalities", "inequality" "gender discrimination", "discrimination", "gender identity", "culture", "education", "organizational culture", "work group diversity", "gender stereotypes".*	reflects the interest in promoting gender diversity in the organizational environment and equal opportunities in the professional environment, the results suggesting a deep concern for creating an inclusive work environment, where gender inequalities are recognized and actively addressed, with an emphasis on the importance of gender diversity management and the elimination of gender discrimination gender to promote a fair and sustainable organizational culture and an inclusive and equitable organizational culture, which will certainly help to combat gender stereotypes.
2. Green cluster	**Gender diversity in corporate governance and organizational performance**	*"corporate governance", "governance", "women directors", "board gender diversity", "organizational performance", "impact", "financial stability", "financial performance",*	focuses on the practical aspects of corporate governance and its relationship with organizational performance, with an interest in establishing gender-balanced leadership structures and assessing the impact of this diversity on the financial and strategic performance of companies, as balanced governance can significantly contribute to the sustainable growth

Type of cluster	Identifying and classifying the type of cluster	Flag items found in the cluster	Defining aspects resulting from the cluster analysis
		"risk", "risk management".	of organizations.
3. Blue cluster	**Gender diversity in Leadership and Management**	*"performance", "management", "leadership", "directors", "board of directors" "risk taking" "risk management performance".*	highlights the importance of developing leadership and management skills in promoting gender diversity and managing a gender-balanced and diverse leadership team to ensure optimal organizational performance and to assume the related risks.
4. Yellow cluster	**Organizational management through social responsibility in the context of gender diversity**	*"management", "diversity", "social responsibility", "workforce diversity" "sustainability", "gender equality", "gender gap" "social responsibility", "human resource management", "top management team".*	focuses on social responsibility in the context of gender diversity of organizational management, thus emphasizing the importance of adopting ethical and socially responsible business practices that promote gender equality and contribute to the equitable development of the community.

Source: own projection using VOSviewer

The bibliometric analysis carried out on the issue of gender diversity provides a comprehensive picture of the conceptual landscape of the research topic addressed in this paper and highlights both emerging research directions (Quttainah *et al.,* 2023), which can be studied in more depth to improve the knowledge of all interested parties on such an important issue related to the importance of the composition of women in the top management of organizations, and less studied areas (Sánchez-Teba *et al.,* 2021).

By identifying and classifying the predominant terms and linkages, the analysis revealed major research concerns in the field, including the management of gender diversity in organizations, the impact of corporate governance on performance, and social responsibility and organizational sustainability.

6. CONCLUSIONS

In various studies, a number of stereotypes and perceptions have developed about gender-specific traits and approaches of leaders. In this context, it is essential to explore and understand more deeply how women and men engage in leadership roles and how these differences may influence organizational dynamics.

The literature review has shown that the dominance of women in top management brings significant positive effects on organizational performance, and it is believed that top managers should develop diversity and inclusion policies to recruit and promote women, as increased diversity can enhance productivity, creativity and innovation which will lead to ensuring organizational performance. It can also be appreciated that the relationship between gender diversity and performance should stimulate diverse stakeholders, and gender diversity can be used not only at management level at all hierarchical levels, but also at board and executive committee level. This last aspect could also constitute a future research direction, in which the existence of relationships between the percentage of women on the boards of directors of organizations and their performance could be ascertained by identifying the resulting trends, with women being more oriented towards supporting and maintaining cooperative relationships between board members and management than men.

The results of our study contribute to a better understanding of the effects of gender differences on organizational performance by analyzing the literature that examines the relationship between gender diversity in top management and organizational performance, thus providing a comprehensive overview of the issue under research.

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TAX EVASION AND CORRUPTION – CHALLENGES FOR THE ROMANIAN ECONOMY

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Abstract
The article aims to highlight the characteristics of some negative phenomena, such as tax evasion and corruption, which affect the economy Romanian. Tax evasion is the most important component of the mechanism of economic-financial crime, and the EU space faces an impressive dynamic of the export and import of economic crime, combating this phenomenon becoming the primary goal of specialized bodies. In this research, the aspects, concepts and causes of these negative phenomena will be analyzed, as well as the interdependence between them and the fiscal pressure. Also, analyzing the level of tax collection in Romania compared to the other EU states, is useful to highlight the existence of an interdependence link between a high level of taxation (which has the effect of increasing the fiscal pressure on taxpayers) and the increase of the level of tax evasion. Further research will also focus on the analysis of the impact that the increases in taxes and fees will have on the degree of payment compliance on the part of taxpayers.
Keywords: *tax evasion; corruption; fiscal pressure.*
JEL Classification: H21, H26, H30.

1. INTRODUCTION

Although from the perspective of scientific research, the concept of tax evasion has given rise to numerous analyzes both from the perspective of the fiscal or legal field, the definitions of this concept have not always been eloquent, the approach being carried out in a unilateral, contradictory way and that launched hypotheses more or less precise but lacking realistic and achievable objectives. Tax fraud and tax evasion is a serious and complex problem that requires a coordinated approach at national, European and international level. The economic and financial crisis has generated many problems for most European governments, which have tried to adopt viable measures to ensure that they can keep public spending under control, ensure a more efficient collection of budget revenues and reduce the phenomenon of tax evasion and fraud, in such a way that economic growth can be achieved. It is very important to study the evolution and behavior of tax evasion, in order to find quick solutions to reduce this phenomenon.

2. ASPECTS FROM THE SPECIALIZED LITERATURE IN THE FIELD OF TAX EVASION AND CORRUPTION

In the specialized economic literature, the analyzed problem is the subject of scientific studies by various economists, teaching staff, scholars, and more recently also students, considering the history of the phenomenon of evasion and fraud fiscal in the context of increasing the budget deficit caused largely by the level of collection of taxes owed by taxpayers.

In theory, it is known that tax evasion can be seen as a phenomenon with two main actors, on the one hand, the taxpayer - lacking a financial education, who tries to evade paying the established taxes and fees, in order to achieve some advantages of an immediate material nature, and on the other hand - the state that seeks through various instruments to prevent a reduction in tax payments to the consolidated budget. While some studies of specialized literature such as those of (Dinga, 2008), claimed that tax evasion is not a specific component of the underground economy as it involves legal activities not reported to the authorities, and in this context it would be much more appropriate that evasion tax to be located in the border area between the underground economy and the official economy, other studies such as (Olabisi, 2010) state about tax evasion as an intentional practice of economic agents not to report the real values to the authorities, in order to be able to reduce the obligation fiscal, although this method involves certain illegal actions from a fiscal point of view.

Instead, the study carried out by (Schneider and Klingmair, 2004) highlighted the fact that between the underground economy and tax evasion there is a link of interdependence, and the condemnation of the activities that make up the underground economy through effective legislative measures will be felt in full, contributing to the reduction of the phenomenon of evasion fiscal.

In the specialized literature, there are other studies that empirically address the interdependence between tax pressure and tax evasion (Amarița, 2017), following the study, identified several causes underlying tax evasion, considering that the excess of tax burdens and the insufficiency of citizens' education determine the extent of tax evasion. Under this aspect, he considered that the efficiency of a tax system consists in the degree of tax consent and that an insufficient education of citizens also has effects on the increase of the phenomenon of tax evasion and concluded that the lack of control carried out by qualified personnel and the gaps of the tax legislation can determine the amplification of the effect of tax evasion and that a decrease in the tax pressure on taxpayers would lead to the decrease of tax evasion, launching a solution in this sense, the best way to achieve the objectives is to create structures that adapt to the changes from the market, to be based on low taxes and to be charged at an extended level of taxation. Gyuricza *et al.* (2017), following the study, they came to the conclusion that the spirit of tax evasion is born from the simple

game of interest, they argued that, whatever the tax rate charged, man, by his nature, always tends to put the general interest behind to the private, as he is inclined to regard the tax as more of a detriment than a legitimate contribution to the public expenditure, and to always look with evil eyes on him who wants to diminish his patrimony, drawing attention to the fact that it is known that some taxpayers will seek the kind of ingenious methods to reduce the amount of tax obligations.

While in the study carried out on the Romanian economy concluded that, the main reason why the revenue/GDP ratio is relatively low in Romania is tax compliance (Sudharshan *et al.,* 2012), in addition, the tax base is so narrow and there are numerous tax exemptions, so that the receipts represent only a small part of the theoretical maximum collection considering the statutory tax. (Keynes,1997), was a supporter of the idea that, if the state reduced its taxes, it would cause an increase in the consumption rate of individuals, a relaxation of business processes and an increase in the demand for ordinary goods. He stated that, the level of a contribution consisting of fees and taxes must be correlated with the level of wealth and income, otherwise tax evasion would occur, also launching a solution in this regard, namely the introduction of a substantial tax on transfers, which would have been applied to all transactions to combat the speculation of the entrepreneurial spirit.

(Durovic *et al.,* 2019) concluded that reducing the number of taxes to be paid encourages economic growth, while a decrease in the level of taxes contributes to and increases the level of economic activity, but in terms of fiscal effects, research results are somewhat contradictory, as stated that the impact of state taxes could be both positive and negative on the economy of the respective country (Pjesky, 2006).

We all know that the Gross Domestic Product is the performance indicator of a state's economy, in this sense at the level of the European Union, (Mutașcu *et al.* 2007) researched the impact of direct and indirect taxes on gross domestic product for the period between 1995 and 2005 and concluded that, for a 1% increase in direct taxes, GDP per capita will increase by 1.61%, and in the case of indirect taxes, an increase of 1% will cause GDP per capita to decrease by 0.83%, suggesting the idea that, the process of fiscal harmonization would be more appropriate instead of competition.

Other authors believed, at the basis of this phenomenon, lies the incorrect and incomplete management of records regarding the determination of income, expenses, and tax obligations, nothing could be truer, but no analysis was made of the causes that led a taxpayer to avoids declaring, highlighting and paying tax obligations. It is known that the evasions phenomenon cannot be eradicated if you do not make a correct diagnosis and evaluation of it and do not have the necessary levers to combat it at hand. Because why not, we must recognize that as long as there is an obligation to pay, there is also the temptation to evade

payment, therefore, any of the procedures for evading the payment of tax obligations are based on multiple causes, which can be identified and kept under control by the state. While other authors had a more realistic approach to the concept of tax evasion, starting from the idea that the reality of a healthy economic system derives from the very principle of contribution, so if we choose to live in a community, it is necessary to contribute each in part to its proper functioning, because inevitably, the state must regulate a fiscal system, the purpose of which is to ensure the revenues necessary for the optimal functioning of state institutions and authorities.

Regarding corruption, in the specialized literature for a longtime researchers considered corruption as a predominantly political and cultural phenomenon and its removal impossible to achieve (Tudorel *et al.,* 2008). Specialized studies have highlighted the fact that this negative phenomenon is present in all countries, both developed and less developed, but each country has a specific corruption potential, but its extent is influenced by the country's general fiscal structure and fiscal management systems (Vasquez *et al.,* 2006). Also, the integrity of civil servants is an important factor in combating tax evasion, if the corrupt civil servants find during a specialized check the existence of an illegal act with the consequence of depriving the budget of the statute of collecting some income from fees and taxes and decide to cooperate with these taxpayers in the exchange of bribes, then corruption becomes a serious problem for the institution that manages the finances of a country if no measures are taken to combat it.

Through the prism of the arguments listed above, in the context of the accentuation of the budget deficit caused to a large extent by the degree of collection of taxes owed by taxpayers, we consider current research, its approach requiring a documentation based on the knowledge accumulated in a practical way, corroborated with a perseverance in researching from a fiscal, accounting, legislative point of view, the causes that influence this phenomenon in relation to the surrounding reality.

3. RESEARCH METHODOLOGY

The present research was carried out in an area where, from an academic point of view, there are not many recent studies, and combating these phenomena, over time, became the primary goal of the specialized bodies that imposed themselves by developing policies fiscal adapted to the dynamics recorded by tax evasion and corruption, through which to combat their weight in society through effective measures.

The research started from analyzing the share of budget losses due to the phenomenon of fiscal evasion. In this sense, we collected information by consulting the statistics provided by Eurostat regarding the value of GDP and tax revenues as a percentage of this indicator, for each of the 28 EU member states

in 2021. We also added the CPI variable that reflects the index of the perception of corruption taken from the Transparency International statistics, respectively the level of taxation taken from the reports of the World Bank in order to establish the various connections and correlations between the dimension of tax evasion and the level of taxation. It is known that the tax pressure is fully felt by the tax and tax payers, so an honest, honest taxpayer voluntarily agrees to pay tax obligations, but the problem arises when the level of taxes and fees reach the limit of bearability, a fact that causes that taxpayer to change his behavior, being "obliged" to resist the competitive economic environment, to look for different methods of evading the payment of taxes and fees.

This behavior was best captured (Laffer, 1980), starting from an idea experimented by the famous Adam Smith, graphically translated the so-called Laffer curve, according to which tax rates that are too high destroy the basis on which taxation acts, respectively, the income resulting from taxation increases more sharply at low levels of taxation. The concept of the Laffer curve was first mentioned by Jude Wanniski, who in 1974 published an article in The Public Interest, entitled Taxes, Revenues, and the Laffer Curve.

4. RESULTS

According to the data highlighted in Table 1, it follows that the countries in the EU that register the highest level of tax evasion are Greece, Italy and Romania. If we analyze the data we can conclude that there is a close interdependence between the level of tax evasion and the corruption perception index, it can be seen that in the countries that register a low level of the CPI (Austria, Denmark, Estonia, the Netherlands, Germany, Sweden, Luxembourg) the share of tax evasion in GDP is lower, while in countries where the corruption perception index registers a high level and the share of tax evasion in GDP shows a high share.

Regarding the correlation between the average level of taxation and the CPI index, it should be mentioned that the study highlighted the fact that in some countries, such as Ireland, Luxembourg, Denmark, which register a level of taxation below the EU average, the CPI index shows us a system that tends to be as least corrupt, in time that in other countries such as Austria, Belgium, the Netherlands, Sweden, although they register a level of taxation above the average of the EU states, the CPI index shows us a system that tends to be as least corrupt.

In our opinion this shows that a high level of taxation it does not always imply a high level of corruption and that other factors must be introduced into the relationship, which can influence the behavior of the taxpayer.

Table 1. Variables subject to analysis

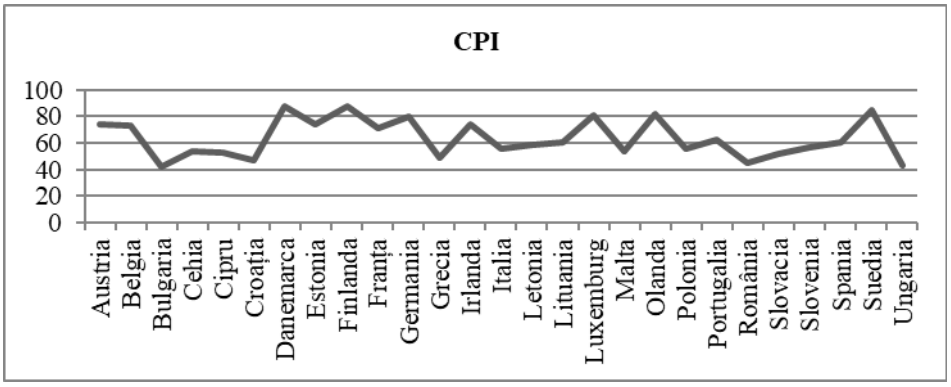
Country	Share of tax evasion in relation to GDP (%)	Average level of taxation	IPC 0-100, where 0 is very corrupt, 100-not corrupt	Tax revenues (% of GDP)
Austria	3.81	53.00	74	44.53
Belgium	7.42	57.00	73	44.35
Bulgaria	8.43	27.1	42	31.40
Croatia	7.97	19.00	47	36.15
Cyprus	9.13	23.21	53	35.99
Czechia	5.31	48.52	54	34.90
Denmark	6.29	26.10	88	48.80
Estonia	6.81	49.40	74	34.90
Finland	5.18	40.10	88	42.93
France	5.41	66.50	71	47.70
Germany	4.18	48.80	80	43.88
Greece	11.31	49.90	49	40.30
Hungary	8.32	48.00	43	33.60
Ireland	2.71	25.95	74	22.54
Italy	11.48	65.41	56	43.50
Letonia	7.12	35.00	59	33.80
Lithuania	8.39	42.70	61	31.45
Luxembourg	3.19	20.30	81	38.90
Malta	9.51	41.80	54	32.50
Netherlands	3.35	39.00	82	38.85
Poland	8.28	38.80	56	37.60
Portugal	6.70	42.54	62	37.45
Romania	10.27	43.80	45	27.20
Slovakia	6.91	48.70	52	35.12
Slovenia	6.90	32.00	57	37.90
Spain	5.68	58.30	61	42.93
Sweden	3.81	49.45	85	44.60

Source: author's works (Eurostat-Fiscal revenues include CAS)

Regarding the relationship between the level of tax evasion and the level of taxation, it can be stated that in principle there is a link between the two variables, in the sense that a high level of taxation also corresponds to a high share of the weight of tax evasion in GDP, with the exception of some countries such as France, Spain, Sweden, Germany which, although they record a high level of taxation, the degree of tax evasion is still low, which leads us to the idea that when analyzing the phenomenon of tax evasion, we must also take into account other criteria of a cultural nature , geographical, respectively the level of financial education of taxpayers. Regarding the collection of taxes in Romania

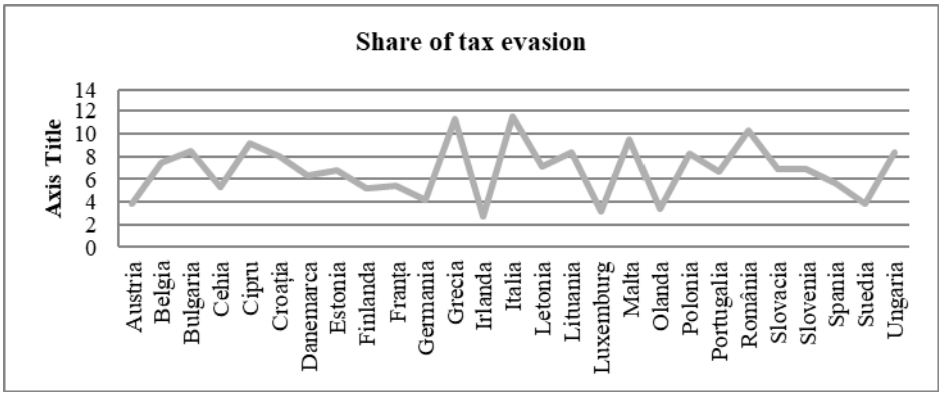
compared to the other EU states, according to the Annual Report prepared by the Fiscal Council, a low level of the share of budget revenues in GDP was also recorded in 2021, respectively of 32.8%, resulting in a gap of 14.1 pp compared to the European average of 46.9%, Romania being followed only by Ireland compared to EU member states.

In Figures 1 to 3, the evolution of the 3 analyzed indicators CPI, Weight of evasion tax revenues from GDP, respectively the share of tax revenues in relation to GDP.



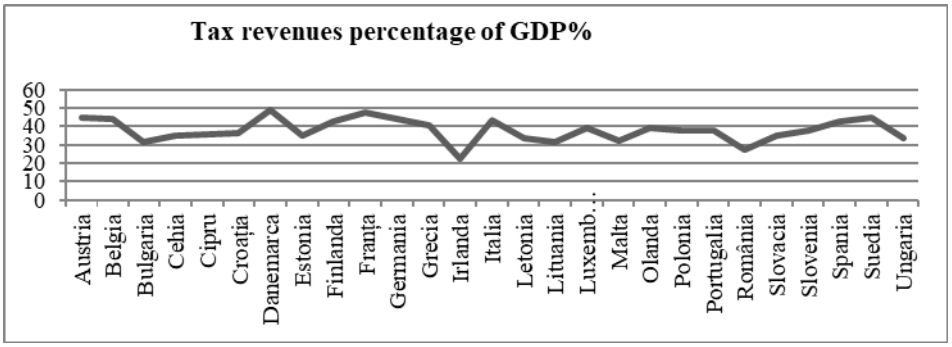
Source: author's work

Figure 1. Corruption perception index at the level of EU countries



Source: author's work

Figure 2. The share of tax evasion in relation to GDP



Source: author's work

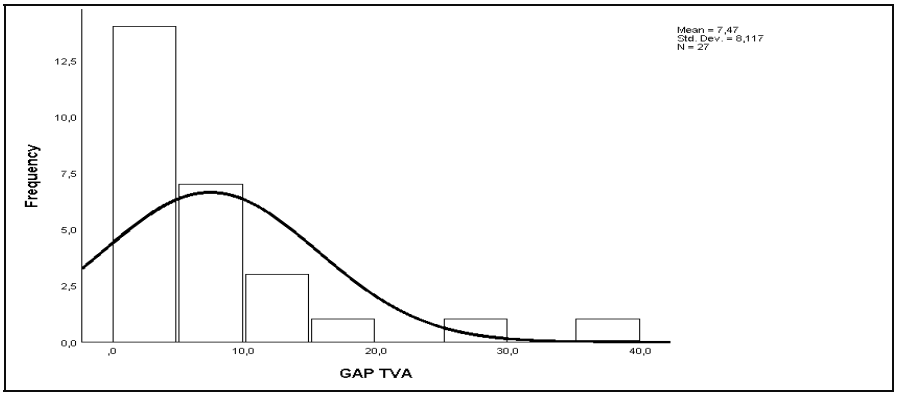
Figure 3. Share of tax revenues in relation to GDP

The level of fiscal revenues composed of taxes and social contributions reached 27.2% of GDP in 2021, Romania still being in the penultimate place, with a gap of 14 pp compared to the EU average (41.2% of GDP). Therefore, if we analyze the evolution of these indicators compared to the previous year (2020), we find that the gap that separates Romania from the EU28 average has deepened both in the case of fiscal revenues by 0.2 pp, and in the case of budget revenues by 0.6 pp. as regards the share of tax revenues in GDP recorded by Romania in 2021, it is significantly below that of other countries with similar economies, such as Slovenia (37.9%), Poland (37.6%), the Czech Republic (34.9%) and Hungary (33.6%). Compared to Bulgaria, the share of budget revenues in GDP is lower by 6.2 pp, and that of tax revenues by 4.6 pp. If we refer to the structure of tax revenues in Romania, the share of receipts from indirect taxes in 2021 was of 39.3% being higher than the European average which reflects a percentage of 33%, but below the level recorded by countries such as: Hungary 52.1%, Bulgaria 50.6%, Poland 40.4%.

Regarding the share of insurance contributions social sector in tax revenues reached a level of 41.9% in 2021, occupying the fourth position after countries such as the Czech Republic 47.6%, Slovakia 44.8% and Slovenia 44.3%. The same situation was not the case direct taxes, where Romania registers one of the lowest shares in tax revenues in the EU, namely 18.8% compared to the EU average, 32.3%.

The structure of budget revenues in Romania is predominantly oriented towards indirect taxes and revenues from social contributions (together they represent 82.6% of tax revenues, the highest value in the EU), while, at the European level, there is a tendency to balance the weight direct taxes, indirect taxes and social security contributions (respectively, an EU average of 32.3%, 33% and 34.7%). If we continue with a brief analysis of the level of VAT collection in Romania (the main source of fiscal budget revenue), in nominal

terms, we can say that in 2021 our country collected 15.511 billion euros from the VAT budget in 2021, compared to expected revenues of 24.5 billion euros, resulting in a deficit of 8.996 billion euros, thus our country recorded the third largest VAT compliance gap in the EU, after Italy (-14.6 billion euros) and France (-9.5 billion euros). In Figure 4 we have presented the evolution of the VAT Gap in the 27 member states of the European Union.



Source: own processing based on data provided by Eurostat

Figure 4. Evolution of the VAT Gap, European Union, 2021

Analyzing the data in Table 2, we can see that the average value recorded by the dependent variable for the year 2021 in the member states of the European Union is 7.467, with a variation that starts from 0.2 and reaches 36.7. We can also observe that the value of the Skewness asymmetry coefficient is 2.385, reflecting the fact that the distribution is skewed to the right which means that a positive skewness.

Table 2. Descriptive statistics of the variable – VAT Gap

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
GAP TVA	27	36,5	,2	36,7	7,467	1,5620	8,1166	65,880	2,385	,448	6,284	,872
Valid N (listwise)	27											

Source: author's work

The approach to tax evasion must also be reanalyzed from the perspective of human behavior, as studies have shown that this phenomenon, which derives from the individual's mode of action, is not devoid of rationality, and with the rapid increase in taxes, there is a considerable increase in this phenomenon, in this sense, we intend that through a future study we will analyze the evolution of the phenomenon of tax evasion for a period of 15 years, after which we will obtain results that will allow us to make a prediction regarding the evolution of

this negative phenomenon. Regardless of its size, tax evasion is a negative phenomenon, and failure to achieve the collection program from the perspective of tax revenues can have a significant impact on the budget deficit. In the context of failure to achieve the collection program, the following effects may occur:

- Increase in the budget deficit, so the government must cover expenses with available resources, including through loans or by reducing other expenses;
- Pressures on public finances, decision-makers will have to find other sources of financing to cover the resulting deficit, and this may lead to concerns about the sustainability of public debt and may affect the country's credit ratings;
- Reduction of investment capacity;
- It affects the national economic stability;
- It can lead to the emergence of social and economic inequities;
- It affects the purchasing power of the national currency.

5. CONCLUSIONS

Tax fraud and tax evasion represent a serious and complex problem that requires a coordinated approach at national, European and international level. The economic and financial crisis has generated many problems for most European governments, which have tried to adopt viable measures to ensure that they can keep public spending under control, ensure a more efficient collection of budget revenues and reduce the phenomenon of tax evasion and fraud, in such a way that economic growth can be achieved. Following the study undertaken, we can appreciate that between the level of tax evasion and the corruption perception index there is a close link of interdependence, thus we identified that countries such as (Austria, Denmark, Estonia, Holland, Germany, Sweden) which register a low level of the CPI, the share of tax evasion in GDP is lower, while in countries where the corruption perception index registers a high level (Romania, Greece, Hungary, Malta, Cyprus, Bulgaria) and the share of tax evasion in GDP presents a share raised. Also, a high level of taxation, which has the effect of increasing the fiscal pressure on taxpayers, causes an increase in the level of tax evasion.

Since ANAF has the central role in the administration of the collection of taxes and duties and holds all the levers to reduce the "motivation" of taxpayers to avoid paying tax obligations in order to increase the degree of voluntary compliance with the payment of duties and taxes owed to the state budget, we believe that a reform of this institution is required. Thus, the ANAF reform through digitization provided for in the PNRR aims to increase the revenue/GDP ratio by:

- reducing the fiscal gap to VAT;
- efficient administration of taxes and fees;
- increasing the degree of voluntary compliance on the part of taxpayers when paying fees and taxes;
- decreasing corruption among fiscal structures with fiscal verification duties.

In conclusion, achieving fiscal objectives by increasing the quality of services, implementing integrated digital solutions, as well as increasing institutional efficiency and transparency, followed by an upward trending collection level, can contribute to reducing the phenomenon of tax evasion.

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REMOVING DK/NA VALUES IN SHARE, WVS, OR SIMILAR DATASETS. EFFECTS ON THE EXPLORATION OF PREDICTIVE MODELS

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Abstract
This paper describes the effects of using a tool capable of automatically removing DK/NA (Do Not Know/No Answer) values from some tabular datasets. For these values, the original encoding performed by some providers of significant survey datasets (e.g., SHARE, WVS, etc.) is as negative numbers. To leave them as are means to accept an artificial increase of scales. Or that translates into dramatic changes in feature selection, exploration tasks, and performance measurements of the resulting models. The tool discussed in this paper helps avoid manually recoding or deriving cleaned replicas of the existing variables in such datasets. In a transparent manner (progress tracking), this tool automatically detects all variables specified, treats each of them, and generates immediate results corresponding to the treatment status (including exceptions for string ones). The paper also brings examples of using real-world data (World Values Survey-WVS, Time-series, v4.0).
Keywords: *SHARE, WVS, or similar datasets; DK/NA coded as negative values; effects on regression and classification models; feature selection steps; performance metrics.*
JEL Classification: L63, C31, C55, D83.

1. INTRODUCTION

Nowadays large datasets have become increasingly prevalent in social sciences and other research domains. Moreover, many statistical tools such as SPSS, R, MATLAB, Minitab, SAS, Stata, facilitate data analysis, statistical computations, visual representations, advanced tests, and automate the entire process of generating the results, many under the form of regression models with coefficients, errors, and other performance metrics.

Some of the owners of the datasets the research community (mostly those based on surveys) uses sometimes not so common ways of encoding variable values. One example is that of some scales configured in the reverse order of the natural intensity of the corresponding responses translated into values related to certain variables. For instance, the five points scale of 5 - 1 (decreasing) for something that varies between Very Weak and Very Strong and should have an inverse correspondence (e.g., 1 for Very Weak, 2 for Weak, 3 for So and So, 4

for Strong, and 5 for Very Strong). Another example (in fact, the one to which this paper is devoted) concerns DK/NA values coded as "Do not Know" (DK), "No Answer" (NA), "Not Asked" (NA), "Not Applicable" (NA) or Missing/Unknown, which should typically be considered missing values. These values represent respondents' lack of knowledge or refusal to provide an answer to specific survey questions or simply the impossibility of collecting a valid answer due to other reasons (Couper *et al.,* 2001). DK/NA values are typically treated as missing and coded accordingly (Williams *et al.,* 2018). The latter applies because many researchers aim for clear and trustful answers, and the accuracy of the classification models obtained critically depends on the treatment procedures for missing values (Acuña and Rodriguez, 2004). However, some significant providers of survey datasets adopt an alternative approach and encode these values as negative ones, introducing a notable challenge in data analysis by leading to artificial inflation of scales, potential distortions in the estimation of correlation coefficients, generation of statistical models, and interpretation of statistical coefficients together with affecting measures of multi-collinearity and accuracy. Moreover, such a coding scheme can complicate feature selection efforts, hinder the robust exploration of models, lead to biased conclusions, and hinder the generalizability of research findings. Therefore, addressing this issue and restoring the integrity of the data is crucial for model exploration, feature selection tasks, accurate data analysis, and reliable results.

Traditional approaches to address this problem involve data imputation techniques, where missing values turn into estimated values based on various statistical methods and observed patterns in the data. Various imputation methods (e.g., mean imputation, hot-deck imputation, or multiple imputation) evolved to handle missing values effectively (Farhangfar *et al.,* 2007). These imputation methods require careful consideration and can introduce additional uncertainties and biases into the data. However, in the case of DK/NA values encoded as negative numbers, the usual imputation approaches may not be appropriate. Imputing these negative values using standard imputation techniques can introduce further biases and distort the nature of the data. Thus, a tailored approach is required to address this specific coding scheme and accurately handle DK/NA values.

REMDKNA (a new Stata command) tackle such issues being designed to automatically remove DK/NA values from large survey datasets, avoid consuming extra time and effort to clean the dataset, and obtain cleaner datasets ensuring the integrity, validity, and reliability of the statistical analyses and resulting models. The tool was inspired by working with large data sets, such as the ones belonging to significant providers as the European Values Study a large-scale, cross-national, and longitudinal survey of attitudes, opinions and values produced by Tilburg University and partners; GESIS of the Leibniz

Institute for Social Sciences; the World Values Survey, a global research project that explores people's values and beliefs; the Survey of Health Ageing and Retirement in Europe / SHARE of the Munich Center for the Economics of Aging (MEA), a former division of the Max Planck Institute for Social Law and Social Policy; and the Life in Transition Survey/LITS of the European Bank for Reconstruction and Development. The idea came after carefully identifying the procedures for coding the values of the fields/variables related to the questions in the questionnaires used by these providers, *label list* and *tabulate* commands in Stata, as used for the dta form of the datasets.

Previous research (Zhang, 2011; Liu *et al.,* 2012) emphasized the challenges of using DK/NA values in large survey datasets and their impact on data analysis and modeling. Traditional approaches often involve laborious manual recoding or imputation techniques (Young *et al.,* 2011), which can be time-consuming and prone to errors (Assale *et al.,* 2019). Addressing DK/NA values as negative ones is not something new. It stands behind studies utilizing large survey datasets like the World Values Survey (WVS), SHARE, or others indicated in the previous section. Such datasets provide valuable insights into societal trends and attitudes over time. However, the artificially encoded negative values can introduce bias and affect the reliability of statistical analyses.

REMDKNA offers a promising solution to this issue. By automatically identifying variables specified in the command and processing them in real-time, REMDKNA efficiently removes DK/NA values. The tool provides information on the treatment of such values for each variable, including numerical success or string exception codes and survey item descriptions/labels. Moreover, the paper includes real-world examples starting from a WVS dataset and illustrating the impact of REMDKNA on model evaluation metrics, predictor independence tests, and classification model accuracy.

2. DATA AND METHODS

REMDKNA in Stata is recommended to be used together with "*label list"* and "*tabulate"* (existing commands) that can support an easy check of the original coding logic and frequency of values for any variable. For all three, the results are presented in the console of Stata. Moreover, other community-based ones served to generate comparative predictive model representations, with and without DK/NA value treatment, such as probability/risk-prediction nomograms based on *nomolog*, in the context of binary logistic regressions (Zlotnik and Abraira, 2015). Such prediction nomograms were also necessary for two things. First, it is about the selection between collinear/redundant variables. Second, the representation of the final binary logistic models working also as prediction instruments. Some of the additional installations performed were those of the *estout* package, including support for using the *eststo*, *esttab* (Jann, 2005; Jann

and Long, 2010), PCDM (Homocianu and Airinei, 2022) and MEM commands. (Homocianu and Tîrnăucă, 2022). Estout served to automatically generate tables with coefficients and errors corresponding to the regression models by printing them in the console or even exporting them as .csv files. PCDM was meant for filtering on magnitude, support, and significance after performing calculations regarding Pearson Pairwise Correlations, while MEM complemented *estout* with additional performance metrics - e.g., AUC-ROC (Jiménez-Valverde, 2012).

The original design of REMDKNA was as a .do (batch) script file. In this case, its execution depended on its download path. Now, it serves as a command publicly available for Stata under this peculiar name (REMDKNA), and it also supports a set of variables or the Asterix (*) instead of all existing variables, as the only parameter. To install it is enough to download and copy the remdkna.ado addition to Stata file into one of the ado directories, e.g., C:\ado\personal. When designing our own Stata processing files, .do extension to automate the derivation and analysis steps or even the generation of tables with classification and regression models and their performance statistics, we can rely on the simple logic of invoking REMDKNA right after opening the original dataset.

REMDKNA can dynamically and efficiently deal with all existing variables in a dataset, use of * instead of specifying a long list of space-separated variable names, which is also possible. It also looks for exceptions when proving no variable and prevents fatal interruptions in execution when detecting other issues, e.g., string variables - easy to find later by searching after the EXCEPTION keyword, and easy to remove by relying on the use of the *drop* command. REMDKNA also measures the execution step (variable) and percentage, which is useful when dealing with time-consuming tasks involving many variables to clean. Because of capturing both the job start and job end timestamps, it also supports measuring the time needed to complete such tasks. By that it simultaneously acts as a benchmarking instrument for different hardware and software configurations.

A subsequent scenario of finding string variables generating exceptions and dropping them from the dataset is worth mentioning when further performing selections, e.g., CVLASSO and RLASSO in the LASSO pack (Tibshirani, 1996) and not wanting to explicitly specify so many variables from the dataset but use instead the Asterix (*) to refer them all at once. Therefore, the data treatment effort is minimized as much as possible by relying on such dynamic and real-time treatment and reporting transparently performed by REMDKNA in the case of datasets like the ones mentioned in the Introduction part of this article.

For other cases, datasets in the native .dta format of Stata or imported files such as .csv or .xls/.xlsx) in which the negative values of some variables do not correspond to DK/NA values, the use of the REMDKNA command should be performed with a lot of care, in order not to alter/destruct the original scales of

these variables. Data from the World Values Survey (WVS) prove the usefulness of REMDKNA for real-world examples. All variables (1,045) and observations (450,869) in a WVS dataset (the file named WVS_TimeSeries_4_0.dta available in the .zip archive, namely WVS TimeSeries 1981 2022 Stata v4 0.zip, supported the tests. Data was exported then as .csv in two forms (two forms depending on whether we have previously applied or not REMDKNA) using Stata. This export took place only after a simple binary derivation of the variable to analyze (D002, Satisfaction with home life) considering the symmetric split of the original scale. Therefore, starting from it (original scale of 1=Dissatisfied to 10=Satisfied), D002bin was derived. The latter contains one for all original values greater than or equal to 6 and 0 otherwise. Other commands (label list, tabulate, generate, and replace) seemed handy when checking the original scales or the frequency of values and performing the derivations. Then, both forms of the .csv file, exported dataset acted as input in the Rattle version 5.5.1, interface of R, version 4.1.3, x64.

Next, the Adaptive Boosting (Ada Boost) technique for decision tree classifiers (Vadivukkarasi and Santhi, 2020) as the 1st part of the 1st selection round was applied with default settings Trees:50, Max Depth:6, Min Split:20, Complexity:0.01, Learning Rate:0.3, Threads:2, Iterations:50, Objective: binary logistic. The reason for not using the boost plugin in Stata is related to its time-consuming execution coupled with limited capabilities in terms of automatic variable selection and treatment of missing values (Schonlau, 2005). Simultaneously, 2nd part of the 1st selection round, a filter based on Pearson correlation coefficients, between the target variable in its scale format and all other variables was applied using PCDM (Homocianu and Airinei, 2022) and two types of threshold conditions, 0.2 for the minimum value of the correlation coefficient as absolute value or modulus, and 0.001 for the maximum accepted p-value for which the correlation coefficient is significant.

Another selection stage (2nd round) focused on discovering the intersection of the selections previously performed using Ada Boost and Pearson correlation coefficients.

In the 3rd round, we successively invoked two powerful commands in the LASSO package (Tibshirani, 1996) in Stata for both forms of the outcome (binary and scale) and both forms of the .dta dataset (when previously using or not REMDKNA) until observing no loss in selections. The list of predictors obtained in the 2nd round served as input for this one, round 3. To perform such consecutive selections, two powerful commands in this LASSO pack of Stata served, namely *rlasso* – responsible for controlling overfitting (Sanchez *et al.,* 2019), and *cvlasso* – performing cross-validations on random subsamples (Ahrens *et al.,* 2020).

In the 4th round (performed only starting from the previous findings in the scenario when initially removing the DK/NA values), the selections based on

checking for reverse causality issues using ordered logit and ordered probit regressions, the target (D002) and just one predictor, each from those identified at the previous step, in every single regression plus interchanging the roles (D002 as the predictor and each of the others as input) and comparing some metrics, e.g., Pseudo R-squared – the larger, the better, and AIC and BIC – the smaller, the better, in each direction.

The 5th round, also performed only starting from the previous findings in the scenario when initially removing the DK/NA values, selected variables using risk prediction nomograms and the results of Ada Boost (frequency of splits for each input variable) only after identifying collinearity issues among predictors based on R-squared and VIF comparisons in OLS regressions with two (x1 x2) and three (y x1 x2) variables specified, and Pearson correlations coefficients (Liveris *et al.,* 2014) not overpassing (in their absolute values) a maximum of 0.4, this time computed only for pairs of predictors and not between the target and each potential predictor – the case of the 2nd part of the 1st selection round.

Stata 17.0 MP 2021 64-bit was behind most of the derivation, selection, and analysis steps preceded by using or not the REMDKNA tool proposed in this paper.

3. RESULTS AND DISCUSSION

The goal of this section is to demonstrate the usefulness of the REMDKNA command in terms of increased support for treatments of DKNA values of most numerical variables and the consequences of not applying such treatment in terms of differences in descriptive statistics (Tables A1 and A2), resulting sets of variables corresponding to various selection steps, collinearity and reverse causality measurements, and accuracy of other performance indicators for final models. Moreover, after identifying peculiar influences at the end of the first three selection rounds mentioned in the previous section, additional tests and analyses were performed considering both forms of the outcome variable (D002 for the scale and D002bin for the binary form).

As noticed in Figure 1, the result of the 2nd tabulation on center-left, the derivation process when not previously using REMDKNA is doomed to failure unless explicitly specifying a secondary condition (>0) for the lower half (1-5) of the original ten-points scale when creating the 0 (zero) values of the binary derivation. The latter is due to the negative values (e.g., -5 for Missing/Unknown, -4 for Not asked, -2 for No answer, and -1 for Don't know, where only the last three have a frequency for the target variable, D002) used by the owners of this dataset to code the DK/NA values.

In the case of using REMDKNA and automatically dropping all missing values for all variables, coded as negative ones, this will result in fewer valid values, only the ones corresponding to the scale used) for each variable and a

much lighter (right of Figure 2) exported data set (.csv format to use with other tools, such as Rattle in R).

When performing the first selection based on Ada Boost in Rattle with the target variable set in its binary format, this tool selected only 123 variables (Figure 3B) from all existing in the dataset if previously not dropping the DK/NA values and only 65 (Figure 3A) if using REMDKNA immediately after opening the dataset.

```
. gen D002bin=.
(450,869 missing values generated)

. replace D002bin=0 if D002<=5
(428,725 real changes made)

. replace D002bin=1 if D002>=6 & D002<=10
(22,144 real changes made)

. tabulate D002bin
```

D002bin	Freq.	Percent	Cum.
0	428,725	95.09	95.09
1	22,144	4.91	100.00
Total	450,869	100.00	

```
. label list D002
D002:
         -5 Missing; Unknown
         -4 Not asked
         -2 No answer
         -1 Don't know
          1 Dissatisfied
          2 2
          3 3
          4 4
          5 5
          6 6
          7 7
          8 8
          9 9
         10 Satisfied

. tabulate D002
```

Satisfaction with home life	Freq.	Percent	Cum.
Not asked	423,740	93.98	93.98
No answer	33	0.01	93.99
Don't know	401	0.09	94.08
Dissatisfied	583	0.13	94.21
2	330	0.07	94.28
3	660	0.15	94.43
4	764	0.17	94.60
5	2,214	0.49	95.09
6	1,903	0.42	95.51
7	3,013	0.67	96.18
8	5,424	1.20	97.38
9	4,330	0.96	98.34
Satisfied	7,474	1.66	100.00
Total	450,869	100.00	

```
. gen D002bin=.
(450,869 missing values generated)

. replace D002bin=0 if D002<=5
(4,551 real changes made)

. replace D002bin=1 if D002>=6 & D002<=10
(22,144 real changes made)

. tabulate D002bin
```

D002bin	Freq.	Percent	Cum.
0	4,551	17.05	17.05
1	22,144	82.95	100.00
Total	26,695	100.00	

```
. label list D002
D002:
         -5 Missing; Unknown
         -4 Not asked
         -2 No answer
         -1 Don't know
          1 Dissatisfied
          2 2
          3 3
          4 4
          5 5
          6 6
          7 7
          8 8
          9 9
         10 Satisfied

. tabulate D002
```

Satisfaction with home life	Freq.	Percent	Cum.
Dissatisfied	583	2.18	2.18
2	330	1.24	3.42
3	660	2.47	5.89
4	764	2.86	8.75
5	2,214	8.29	17.05
6	1,903	7.13	24.18
7	3,013	11.29	35.46
8	5,424	20.32	55.78
9	4,330	16.22	72.00
Satisfied	7,474	28.00	100.00
Total	26,695	100.00	

Figure 1. Comparative results of applying tabulations for the target variable in both forms (binary derivation and original form)

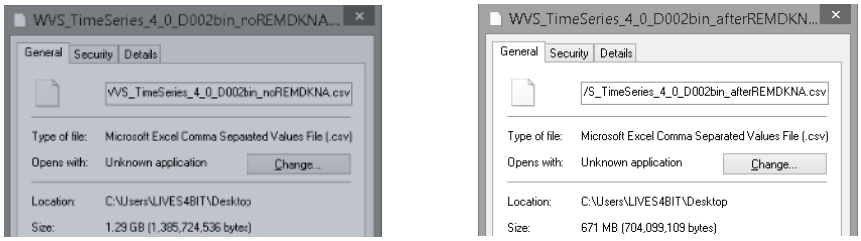


Figure 2. Comparative resulting .csv exports if previously using (right – smaller size) or NOT (left – larger size) the REMDKNA command

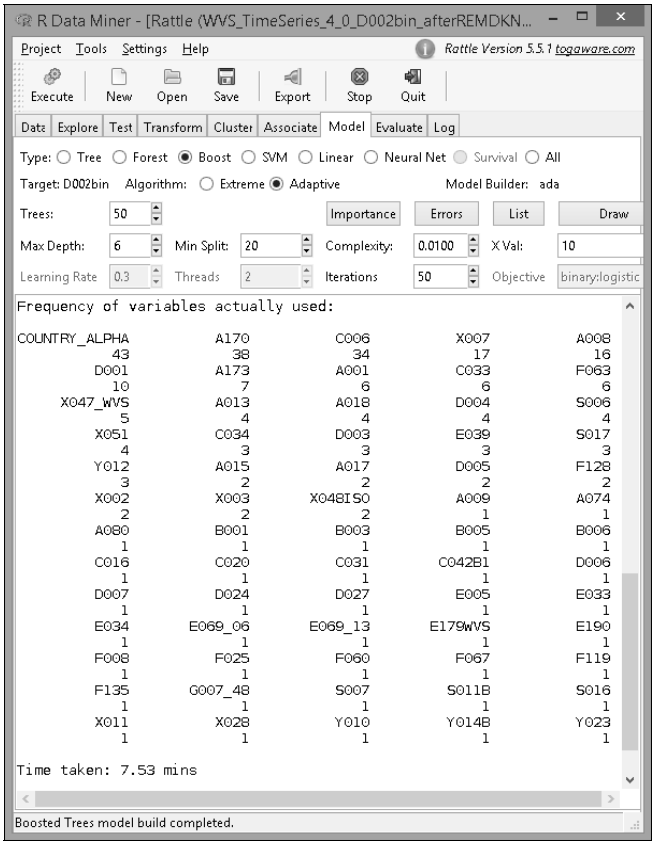


Figure 3A. Results of applying the Ada Boost technique (in the Rattle library of R) if previously removing the DK/NA values using REMDKNA (less time required)

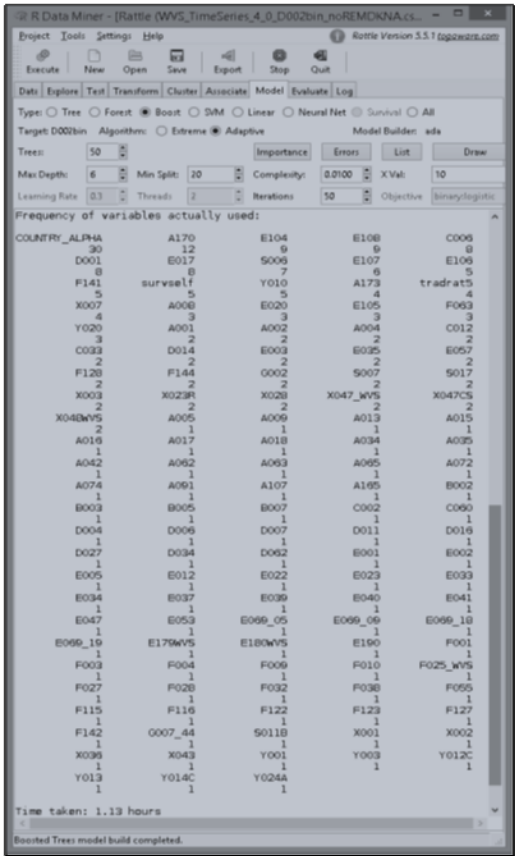
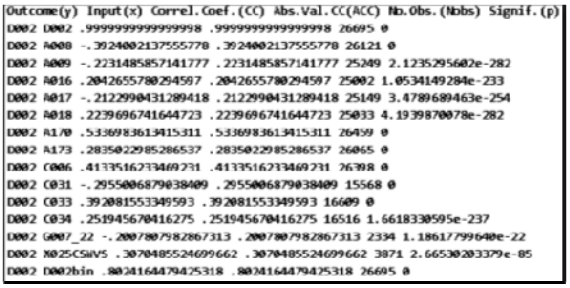


Figure 3B. Results of applying the Ada Boost technique (in the Rattle library of R) if previously NOT removing the DK/NA values using REMDKNA (more time needed)

When using a selection based on the absolute values of the Pearson Pairwise Correlation Coefficients between the outcome, the scale form of D002 and each predictor, using PCDM, Figures 3A&3B, a minimum accepted magnitude of 0.2 (minacc=0.2) for such coefficients was considered, negligible correlation. The value of 0.2 is a reconciliation average (0 to 0.2 or −0.2 to 0 for Very Weak / Very Low / Negligible; 0.2 to 0.4 or −0.4 to −0.2 for Weak / Low; 0.4 to 0.6 or −0.6 to −0.4 for Moderate / Intermediate; 0.6 to 0.8 or −0.8 to −0.6 for High/Strong, and 0.8 to 1 or −1 to −0.8 for Very High/Very Strong Correlation) between the two versions: the first 0.1 (Schober *et al.,* 2018) and the second 0.3 (Mukaka, 2012).

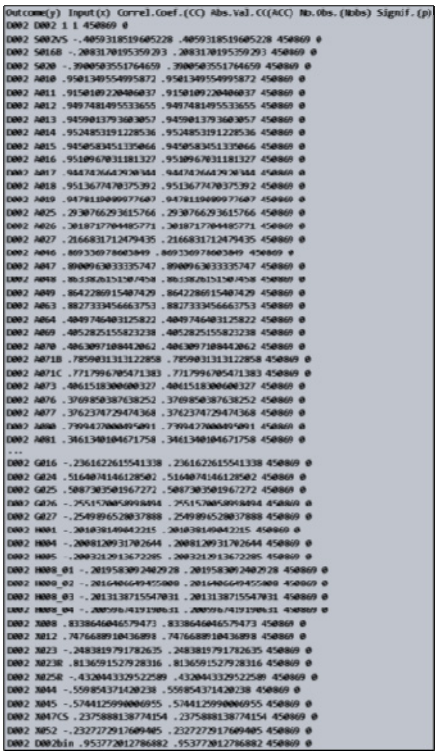
Moreover, 0.2 represents a consistent step (0.2x5=1 or -0.2x5=-1) given those five categories: negligible, weak/low, moderate, strong, and very firm/strong correlation (those five intervals above). We can notice that the 3rd

state (moderate/intermediate) is symmetric if considering the middle values of -0.5 and 0.5 for -1 to 0 and 0 to 1 as negative and positive subranges of the correlation coefficients. In addition, the minimum significance of one per thousand was considered in this selection scenario (maxp of 0.001 – Figures 4A and 4B).



Outcome(y)	Input(x)	Correl.Coef.(CC)	Abs.Val.CC(ACC)	Nb.Obs.(Nobs)	Signif.(p)
D002	D002	.99999999999999998	.99999999999999998	26695	0
D002	A008	-.39244021375557708	.39244021375557708	26121	0
D002	A009	-.2231485857141777	.2231485857141777	25249	2.1235295602e-282
D002	A016	.2042655780294597	.2042655780294597	25002	1.0534149284e-283
D002	A017	-.2122990431289418	.2122990431289418	25149	3.4789689463e-254
D002	A018	.2239696741644723	.2239696741644723	25033	4.1939870078e-282
D002	A170	.5336983613415311	.5336983613415311	26459	0
D002	A173	.2835022985286537	.2835022985286537	26065	0
D002	C006	.4133516233469231	.4133516233469231	26398	0
D002	C031	-.2955006879038409	.2955006879038409	15568	0
D002	C033	.3920815533495 93	.3920815533495 93	16609	0
D002	C034	.251945670416275	.251945670416275	16516	1.6618330595e-237
D002	G007_22	-.2007807982867313	.2007807982867313	2334	1.1861779640e-22
D002	X025CSAV5	.3070405524699662	.3070405524699662	3871	2.6653020337 9e-05
D002	D002bin	.9024164479425318	.9024164479425318	26605	0

Figure 4A. Results of applying filters based on Pearson Pairwise Correlation Coefficients if previously removing the DK/NA values using REMDKNA



Outcome(y)	Input(x)	Correl.Coef.(CC)	Abs.Val.CC(ACC)	Nb.Obs.(Nobs)	Signif.(p)
D002	D002	1	1	450869	0
D002	S002VS	-.4059318519605228	.4059318519605228	450869	0
D002	S0168	-.2083170195359293	.2083170195359293	450869	0
D002	S020	-.3900503551764659	.3900503551764659	450869	0
D002	A010	.9581349554995872	.9581349554995872	450869	0
D002	A011	.9150109220406037	.9150109220406037	450869	0
D002	A012	.9497481495533655	.9497481495533655	450869	0
D002	A013	.9459013793603057	.9459013793603057	450869	0
D002	A014	.9524853191228536	.9524853191228536	450869	0
D002	A015	.9450583451335066	.9450583451335066	450869	0
D002	A016	.9510967031181327	.9510967031181327	450869	0
D002	A017	.9447436647920344	.9447436647920344	450869	0
D002	A018	.9513677470375392	.9513677470375392	450869	0
D002	A019	.9478119499977607	.9478119499977607	450869	0
D002	A025	.2930766293615766	.2930766293615766	450869	0
D002	A026	.2010717704485771	.2010717704485771	450869	0
D002	A027	.2166831712479435	.2166831712479435	450869	0
D002	A046	.8693369786 3849	.8693369786 3849	450869	0
D002	A047	.8900963033335747	.8900963033335747	450869	0
D002	A048	.8b5582b15150 7458	.8b5582b15150 7458	450869	0
D002	A049	.8642286915407429	.8642286915407429	450869	0
D002	A063	.8827333456663753	.8827333456663753	450869	0
D002	A064	.4049746403125822	.4049746403125822	450869	0
D002	A069	.4052825155823238	.4052825155823238	450869	0
D002	A070	.4063097108443062	.4063097108443062	450869	0
D002	A0718	.7859031313122858	.7859031313122858	450869	0
D002	A071C	.7717996705471383	.7717996705471383	450869	0
D002	A073	.4061518300600327	.4061518300600327	450869	0
D002	A076	.3769850387638252	.3769850387638252	450869	0
D002	A077	.3762374729474368	.3762374729474368	450869	0
D002	A080	.7399427000495801	.7399427000495801	450869	0
D002	A081	.3461340104671758	.3461340104671758	450869	0
...					
D002	G016	-.2361622615541338	.2361622615541338	450869	0
D002	G024	.5164074146128502	.5164074146128502	450869	0
D002	G025	.5087305501967272	.5087305501967272	450869	0
D002	G026	-.2951570053993494	.2951570053993494	450869	0
D002	G027	-.2549896528037888	.2549896528037888	450869	0
D002	H001	-.2010301494422215	.2010301494422215	450869	0
D002	H004	-.2008120931702644	.2008120931702644	450869	0
D002	H005	.2003219913672205	.2003219913672205	450869	0
D002	H008_01	-.2019583092402928	.2019583092402928	450869	0
D002	H008_02	-.2016406694755809	.2016406694755809	450869	0
D002	H008_03	-.2013138715547031	.2013138715547031	450869	0
D002	H008_04	-.2005984191390631	.2005984191390631	450869	0
D002	X008	.8338646046579473	.8338646046579473	450869	0
D002	X012	.7476688910436898	.7476688910436898	450869	0
D002	X023	-.2483819791782635	.2483819791782635	450869	0
D002	X023R	.8136591527928316	.8136591527928316	450869	0
D002	X025R	-.4320443329522589	.4320443329522589	450869	0
D002	X044	-.5598543714202238	.5598543714202238	450869	0
D002	X045	-.5744125990006955	.5744125990006955	450869	0
D002	X047CS	.2375888138774154	.2375888138774154	450869	0
D002	X052	-.2327272917609405	.2327272917609405	450869	0
D002	D002bin	.9537720127868 82	.9537720127868 82	450869	0

Figure 4B. Results of applying filters based on Pearson Pairwise Correlation Coefficients if previously NOT removing the DK/NA values using REMDKNA

An extra argument for a balanced and conciliatory approach for Pearson Pairwise Correlation Coefficients, those five intervals above, is the existing balanced approach of interpreting AUC-ROC classification accuracy values, five equidistant intervals of step 0.1 between 0.5 and 1 corresponding (Nahm, 2022) to Fail, Poor, Fair, Good, Excellent or, in other approaches: Fail, Worthless, Poor, Good, Excellent (Polo and Miot, 2020) or Bad, Poor, Satisfactory, Good, Excellent (Bogale *et al.,* 2022), or Unsatisfactory, Satisfactory, Poor, Good, Excellent (Trifonova *et al.,* 2014). Filters based on Pearson Pairwise Correlation Coefficients selected only a few predictors, 13 items excluding the target: D002 &D002bin, when using REMDKNA, Figure 4A. A less consistent filtering, 335 items out of 1045) occurred in the other case, Figure 4B.

Next, the intersection between the results provided by Ada Boost and those returned by the approach considering Pearson correlation coefficients, Pearson Pairwise Correlation Coefficients using PCDM in Stata, represents ten vs. 52 predictors depending on previously dropping the DK/NA values, right side of Table 1, or not - left of Table 1.

After performing both CVLASSO and RLASSO selections on both forms of the target variables, 29 of 52 variables resulted (left of Table 2) if not removing the DK/NA values and just eight of 10 (right of Table 2) if previously using REMDKNA and dropping these values.

Table 1. Comparative intersecting results of applying both the Ada Boost technique in Rattle and filters based on Pearson Pairwise Correlation Coefficients (PCDM in Stata)

Intersection between Ada Boost and Pearson Pairwise Correlation Coefficients if NOT using REMDKNA						**Intersection between Ada Boost and Pearson Pairwise Correlation Coefficients if using REMDKNA**
A013	B007	D016	E104	F027	X023R	A008
A015	C012	D027	E105	F032	X047CS	A009
A016	C033	D034	E106	F055		A017
A017	C060	D062	E107	F127		A018
A018	D001	E017	E108	F128		A170
A063	D004	E020	E190	F141		A173
A091	D006	E047	F003	F142		C006
A107	D007	E053	F004	F144		C031
B003	D011	E057	F009	G002		C033
B005	D014	E069_09	F010	G007_44		C034

Table 2. Comparative results of applying both CVLASSO&RLASSO (Stata) in cascade

CVLASSO and RLASSO if NOT using REMDKNA			CVLASSO and RLASSO if using REMDKNA
A016	E020	F004	A008
A017	E047	F009	A017
A018	E053	F027	A170
B007	E057	F127	A173
C033	E104	F128	C006
D001	E105	F142	C031
D004	E106	F144	C033
D016	E107	G007_44	C034
D034	E108	X047CS	
E017	E190		

The step that followed was to check for reverse causality issues using ordered logit and ordered probit regressions and each variable selected in the previous stage as input and the target in the scale form (D002) and vice versa by interchanging the roles (D002 as input and each of those eight predictors on the right side of Table 2 as output). In addition, some model performance metrics such as Pseudo R-squared, AIC, and BIC automatically resulted (computed and reported) to conclude which variable of those eight is more appropriate to act as input and which as a target in connection with D002. This selection stage only took place in the case of previously dropping the DKNA values, and it filtered the previous set of possible predictors and preserved only five, namely A170, A173, C006, C033, and C034. The corresponding results are available in Tables A3 and A4.

The next step was to remove the collinearity issues in the second scenario (if cleaning the dataset using the REMDKNA command). After identifying the collinear pairs, a prediction nomogram (Figure 5) resulted after performing a logit regression, including all five remaining predictors. The removal considered only those variables involved in collinear pairs ((A170, C033), (C006, C033), and (C033, C034) – top of Table 3, together with (A170, A173), and (A170, C006) - right of Figure 6). It also dropped the ones with lower values for the magnitude (smaller overall bars and the right edge corresponding to a lower score – Figure 5). The first three collinear pairs (top of Table 3) resulted when considering all possible OLS regressions with D002 or D002bin set as outcomes (y=D002bin or y=D002) and each pair of those five remaining predictors above (after performing reverse causality checks), and observing that R^2 in OLSx1x2 > R^2 in OLSyx1x2 or Maximum Computed VIF (using the VIF command after OLSyx1x2) > Maximum Accepted VIF=1/(1-R^2) for OLSyx1x2 (bottom of Table 3). Moreover, an *OLS Maximum Computed VIF>OLS Maximum Accepted*

VIF means that the correlation between the predictors is stronger than the regression relationship (Vatcheva *et al.,* 2016), and multicollinearity can affect their coefficient estimates.

Moreover, two matrices with Pearson Pairwise Correlation Coefficients (Figure 6 - only for those remaining five predictors above) served to identify additional collinearity issues. In this second approach, a maximum accepted magnitude of 0.4 (Schober et al., 2018) for such correlation coefficients was considered (negligible and weak correlation), and two other collinear pairs have been identified (A170 and A173, A170, and C006). The latter finding regarding these two additional collinear pairs couples with the fact that using a similar approach as the one depicted in this article (including DK/NA treatments using REMDKNA and similar selection steps), A008, A009, A173, C006 emerged as the most resilient determinants of life satisfaction (A170). Therefore, A173 and C006 cannot co-exist with A170 in the model in Figure 5 (D002bin set as target). The first two are also predictors of A170 (a clear indication of redundancy affecting A170). After removing all collinearity issues based on the logic above, the remaining list of predictors comprises only three (A173, C006, and C034) from those five above, and, eventually, A008 and A009 (the predictors of A170). Still, the latter two did not pass reverse causality checks (like those described in Tables A3 &A4) when considering D002 (homelife satisfaction) as the target. Consequently, they are not confirmed when all previous selection steps are activated.

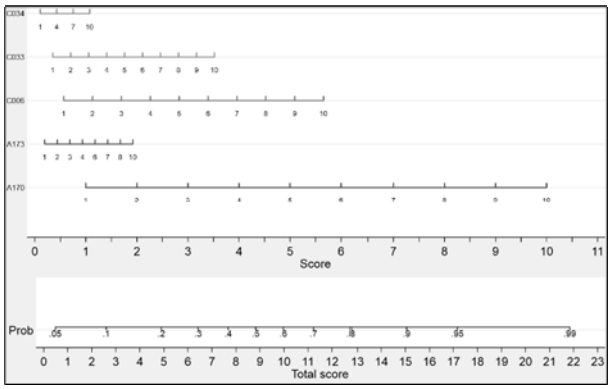
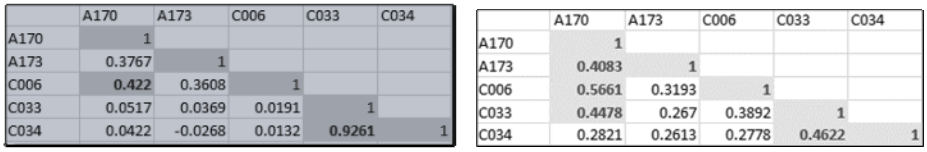


Figure 5. Nomogram (the *nomolog* tool in Stata) for collinearity removal purposes

Moreover, a comparison between C033 and C006 took place. C033 was dropped (smaller overall bar and a lower score corresponding to the value on the right edge – Figure 5, and, in addition, a tinier frequency in the results of Ada Boost than the one of C033: 6 vs. 34 – top of Figure 2). The same applies to the pair C033 and A170. This removal solved most critical collinearity issues, as

shown at the top of Table 3. Additionally, it excluded half of the ones in Figure 6 (right side).



	A170	A173	C006	C033	C034
A170	1				
A173	0.3767	1			
C006	0.422	0.3608	1		
C033	0.0517	0.0369	0.0191	1	
C034	0.0422	-0.0268	0.0132	0.9261	1

	A170	A173	C006	C033	C034
A170	1				
A173	0.4083	1			
C006	0.5661	0.3193	1		
C033	0.4478	0.267	0.3892	1	
C034	0.2821	0.2613	0.2778	0.4622	1

Figure 6. Comparative matrices with Pearson Pairwise Correlation Coefficient

It is also worth mentioning the differences in correlations among the reliable predictors identified (if previously removing DK/NA values or not – Figure 6) and those in VIF and R^2 (top of Table 3 vs. bottom of Table 3), which do not point out the same collinearity issues.

Table 3. Collinearity checks for each pair of those five predictors resisting reverse causality checks if previously removing DK/NA values (top) or NOT (bottom)

y	x1	x2	R^2 for OLSx1x2	R^2 for OLS yx1x2	Max.Comput.VIF for OLS yx1x2 (estat vif)	Max.Accept.VIF for OLS yx1x2 (=1/(1-R^2))
D002bin	A170	C033	0.1999	0.1959	1.2499	1.2436
D002bin	C006	C033	0.1517	0.1486	1.1789	1.1745
D002bin	C033	C034	0.2121	0.0979	1.2691	1.1085
D002	C033	C034	0.2121	0.1585	1.2691	1.1883
D002bin	A170	A173	0.1419	0.0056	1.1654	1.0057
D002bin	A170	C006	0.1781	0.0071	1.2167	1.0071
D002bin	A173	C006	0.1302	0.0047	1.1496	1.0047
D002bin	C033	C034	0.8576	0.5475	7.0244	2.2097
D002	A170	A173	0.1419	0.0036	1.1654	1.0036
D002	A170	C006	0.1781	0.0046	1.2166	1.0046
D002	A173	C006	0.1302	0.0032	1.1496	1.0032
D002	C033	C034	0.8576	0.6195	7.0244	2.6281

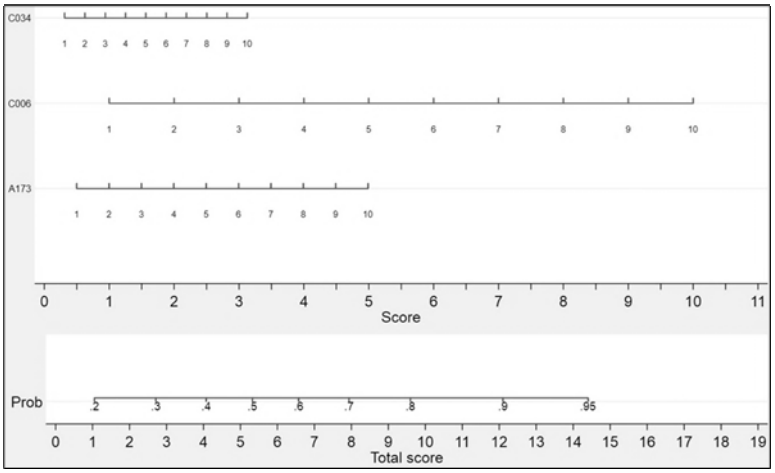


Figure 7A. Prediction nomogram if previously removing the DK/NA values

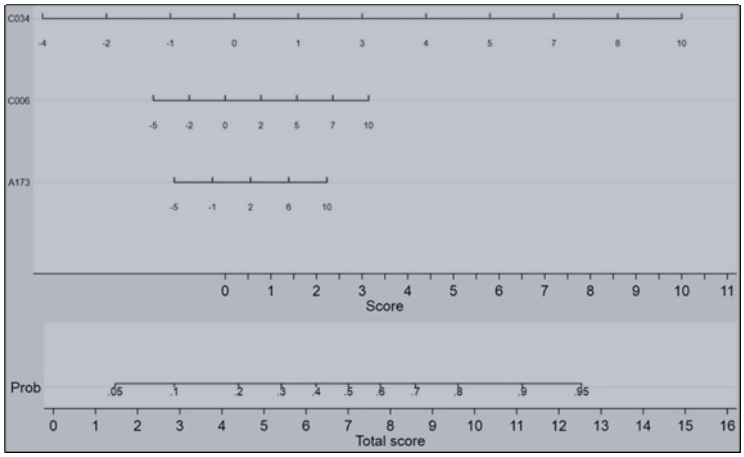


Figure 7B. Prediction nomogram if previously NOT removing the DK/NA values

The next step was to compare different regression models and prediction nomograms containing these three remaining predictors also resisting collinearity checks (A173, C006, and C034) and considering previous treatment of DK/NA values or not.

By performing side-by-side comparisons between those six models in tables A5, when cleaning DK/NA values by using the REMDKNA command, and A6, when not performing such data cleaning tasks, we can see that all R-squared values for all six models are exaggerated (much higher) in the second case (Table A6). The same applies to the accuracy of classification (AUC-ROC of

0.7832 vs. 0.9182 for model 1-Logit and 0.7832 vs. 0.9374 for model 2-Probit). The RMSE for OLS regression models (3 and 6) was also higher when previously applying REMDKNA. Instead, the AIC and BIC information criteria, an indication of the goodness of fit, recorded better/smaller values for all six models when previously performing data cleaning tasks (Table A5). The maximum absolute values of the Pearson correlation coefficients between all pairs of predictors (maxAbsVPMCC of 0.2835 vs. 0.3608) indicate higher values (slightly more collinearity) when not performing the removal of DK/NA values (Table A6). All these couples with the overrated number of valid observations (16160-Table A5 vs. 450869-Table A6). Moreover, they are specific to the dataset used, the outcome variable, and the most robust corresponding predictors identified. Still, they offer a clear picture of the magnitude of distortions obtained if dealing with the source data, but not adequately.

It is easily noticeable that when allowing for inflated scales, the entire selection process (including all checks) dramatically complicates (Figure 3A vs. Figure 3B, Figure 4A vs. Figure 4B, Tables 2, 3 and 4A vs. 4B). And that comes second if considering the lack of correctness of an approach allowing for such not treated messy data. In addition, if we focus on the most robust predictors, the noticeable differences in their compared magnitudes (an overturning of the ranking – Figure 7A vs. Figure 7B) when considering these two scenarios (previously cleaning the original data vs. not) should raise tough question marks. Moreover, the significant differences in the performance metrics (support, accuracy, R-squared, fit, etc.) of the resulting models in these two scenarios are another solid argument for using such automatic tools dedicated to the correct data treatment.

As already demonstrated, REMDKNA successfully simplifies the task of automatically cleaning some dataset types (e.g., large files designed by considerable project owners such as WVS or SHARE, including the .dta format for Stata) before starting to perform feature selection tasks and also contributes to obtaining realistic models.

4. CONCLUSIONS

This article describes the effects of using an automated solution for removing DK/NA values encoded as negative ones, in some large survey datasets. First, it is about minimizing the manual intervention required for data cleaning. Second, the solution demonstrates the effectiveness of improving the feature selection and robust model exploration steps, including the tests of predictor independence, and obtaining realistic model evaluation metrics. And these stand on real-world datasets analysis such as the World Values Survey or similar. By removing the artificially inflated scales caused by DK/NA values, the integrity and reliability of statistical models are ensured. Moreover, the real-

time progress monitoring and reporting feature of such a solution, including easy tracking of DK/NA value treatment and insights into the success in case of numerical variables or exceptions encountered for string ones, enhances its usability and efficiency.

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FINANCIAL SECURITY, INDIVIDUAL AUTONOMY, AND DEMOCRATIC IDEALS: KEY LIFE SATISFACTION DRIVERS

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Abstract
This paper explores the most robust determinants of life satisfaction using empirical analysis of World Values Survey data, including the latest version 4.0, time series 1981-2022. Three significant ones emerged (a triad), namely contentment with household financial situation, freedom of choice and control, and democracy in terms of exposure to it and democratic values, all in a logit model with good accuracy of classification (AUC-ROC greater than 0.8) and a high maximum probability (more than 95%). Rigorous selection processes coupled with advanced methodologies such as variable selection, triangulation, cross-validations (random, and non-random - both on socio-economic variables and dataset versions), overfitting removal, collinearity and reverse causality checks, and different regressions contributed to the evaluation and validation of the final most robust model. Zlotnik and Abraira's prediction nomograms helped rank the predictors and stood behind the final model with three core components to estimate life satisfaction probabilities. The findings are a step forward in life satisfaction research and provide significant ideas for policymakers.
Keywords: *World Values Survey (WVS); life satisfaction; financial contentment; freedom of choice and control; democracy.*
JEL Classification: I31, C55, G51.

1. INTRODUCTION

Life satisfaction seems to be a complex and subjective concept that can vary so much from person to person and can depend on many factors such as personal values, relationships, health, financial situation and stability, and life experiences. While some people find happiness in money (Boyce *et al.,* 2010) and material possessions (Keng *et al.,* 2000; Sirgy *et al.,* 2013), others find it in spiritual or emotional fulfillment (Koohbanani, 2013). Life satisfaction does not seem to be under the governance of a single formula. Moreover, its attainment

varies from person to person, and individuals must discern what brings them fulfillment and happiness and actively pursue those aspects in their personal lives. It could also mean there are general and specific patterns for this satisfaction. The primary focus in this paper is on the former.

The study of life satisfaction is not something new. Historically, this research line can be rooted in the 18th century (Veenhoven, 1996), associated with Enlightenment thought. From this point of view, the purpose of existence is life itself rather than serving the ruler or God. Therefore, self-improvement and happiness become central values in a society responsible for providing citizens with what is necessary for a good life. The same conviction manifested a century later under the form of the Utilitarian Creed that the best society is that which offers the greatest happiness for the highest number of people and inspired two centuries later large-scale attempts to carry out social reform and influenced the development of the welfare state (Pacek and Radcliff, 2008). The overall progress started with creative efforts of a better society, translated first into attempts to avoid ignorance, diseases, hunger, and poverty, as well as increasing the level of literacy and controlling diseases and epidemics and later into ways to ensure a good life for all, and a good material standard of living through monetary earnings, income security, and income equality. The latter has given rise to much social research on poverty and social inequality (Schröder, 2016; Roth *et al.,* 2017). Later, the term quality of life emerged in the context of the new themes related to the limits to economic growth and post-materialism.

In terms of differences between life satisfaction and happiness (San Martín *et al.,* 2010), the latter is often described as a more momentary and emotional state (Silbermann, 1985; Mangels, 2009; Sundriyal and Kumar, 2014), often influenced by external factors such as events, experiences, or possessions. It can be short-lived and fluctuate frequently. Moreover, life satisfaction is a more enduring and cognitive evaluation of a particular life, as a whole or overall happiness (Lu, 1999; Suldo *et al.,* 2006; Veenhoven, 2012; Zhang *et al.,* 2018). It comprises many factors, including individual overall sense of purpose, relationships, financial stability, health, etc. Life satisfaction tends to be a more stable and long-term assessment of happiness. It is worth noting that while there is often an overlap between happiness and life satisfaction, they are not the same thing and can exist independently of each other. One can feel happy at a particular moment but still have low life satisfaction or vice versa.

Other authors also indicate the role of socio-demographic and individual features (Argan *et al.,* 2018; Rajani *et al.,* 2019). They emphasize influences from this category above, such as age, gender (Becchetti and Conzo, 2022), psychological features, lifestyle, participation in leisure activity, and satisfaction related to spending free time or leisure satisfaction (Dirzyte *et al.,* 2022).

Life satisfaction is more liable to shifts in the aspiration level (Ng, 2022) when compared to happiness, thus reducing the comparability of the resulting

indices. Moreover, life satisfaction is the evaluation of personal life, not simply the current level of happiness (Feldman, 2008).

According to some other authors (Gundelach and Kreiner, 2004; Li *et al.,* 2017), higher levels of freedom of choice and control are usually strong influences associated with life satisfaction. From other perspectives (Diener and Diener, 2009; Oishi *et al.,* 2009), those with higher levels of financial satisfaction are also more inclined to show higher levels of life satisfaction.

According to other scholars, those more inclined and exposed to democracy as an expression of the will of the people (Denton, 2015) and of the subjectivity of the society (Łużyński, 2019) or as a crucial way to realize human rights (Yin, 2022), are also more likely to be satisfied with their lives (Dorn *et al.,* 2007; Owen *et al.,* 2008).

Some socio-demographic features (Meléndez *et al.,* 2009) seem to be also significant influences associated with this type of satisfaction. For instance, some researchers (Kassenboehmer and Haisken-DeNew, 2012; Hellevik, 2017; Bartram, 2020; Bittmann, 2021; Kaiser *et al.,* 2022) invoke even an U-shape when it comes to the graphical representation of the influence of age on life satisfaction, with high levels of life satisfaction in young adulthood, a gradual decline in middle age with a minimum of being satisfied with life between 40 and 60 years of age, and then an increase in later life. Other scholars revealed significant correlations between personality, self-esteem, and life satisfaction (Halvorsen and Heyerdahl, 2006) or between optimism-related variables, goal orientation, and the same type of satisfaction (Supervía *et al.,* 2020).

Still, the main hypotheses of this paper are:

- H1-Freedom of choice and control (Verme, 2008; Sohier, 2018) are strongly related to well-being, happiness, and this type of satisfaction (Bartolini and Sarracino, 2015).
- H2-Financial choice and satisfaction are closely associated with well-being, the latter being considered more than happiness and life satisfaction (Ruggeri *et al.,* 2020). Therefore, the first two are also related to being satisfied with life.
- H3-Democratic values (Keane *et al.,* 2012) positively correlate with increased life satisfaction.

The article further describes the data and methodology used before presenting and discussing the main findings in a dedicated section.

2. DATA AND METHODS

This article started from one of the most comprehensive World Values Survey (WVS) datasets. The latter (version 4.0, WVS_TimeSeries_4_0.dta - https://www.worldvaluessurvey.org/WVSDocumentationWVL.jsp) includes 1,045 variables and 450,869 raw observations. It served all selection rounds. Other three versions have been used just in the first selection round (Adaptive

Boosting in the Rattle visual library of R), namely: version 3.0 (WVS_TimeSeries_1981_2022_Stata_v3_0.dta, 1,041 variables and 440,055 observations, available online on the WVS site until the end of 2022), version 2.0 (WVS_TimeSeries_1981_2020_stata_v2_0.dta, 1,072 variables, and 432,482 records) and 1.6 (WVS_TimeSeries_stata_v1_6.dta, 1,045 variables, and 426,452 observations), the latter two still available on the WVS site. Their .csv (Comma-Separated Values data format) exports were preceded by designing, testing, and running a script sequence responsible for removing the DK/NA (Tsikriktsis, 2005) values, Don't Know or No Answer/No Opinion or Not Applicable/Not Asked - coded by WVS as negative ones, artificially increasing the scales, and not beneficial for selections. Figure 1 and https://tinyurl.com/ddz8239j of all variables and by a simple binary derivation, i.e. A170bin of the original variable to analyze A170, Satisfaction with your life. This applies considering the two symmetric halves of its original scale: 1-5 for 0, and 6-10 for 1, https://tinyurl.com/3h59wyhp. Moreover, the option to generate numerical values for labeled variables, instead of the text, was enabled when exporting, e.g., *export delimited using "F:\data\WVS-TS4_A170bin.csv", no label replace*.

```
. label list A170
A170:
          -5 Missing; Unknown
          -4 Not asked
          -2 No answer
          -1 Don´t know
           1 Dissatisfied
           2 2
           3 3
           4 4
           5 5
           6 6
           7 7
           8 8
           9 9
          10 Satisfied
```

```
. tabulate A170
```

Satisfaction with your life	Freq.	Percent	Cum.
Missing; Unknown	123	0.03	0.03
Not asked	1,982	0.44	0.47
No answer	1,245	0.28	0.74
Don't know	2,602	0.58	1.32
Dissatisfied	17,616	3.91	5.23
2	11,700	2.59	7.82
3	20,622	4.57	12.40
4	24,586	5.45	17.85
5	60,679	13.46	31.31
6	49,149	10.90	42.21
7	67,701	15.02	57.22
8	83,358	18.49	75.71
9	46,460	10.30	86.02
Satisfied	63,046	13.98	100.00
Total	450,869	100.00	

Running ***1remove_DKNA.do*** for Stata **(**at https://tinyurl.com/ddz8239j)

```
. tabulate A170
```

Satisfaction with your life	Freq.	Percent	Cum.
Dissatisfied	17,616	3.96	3.96
2	11,700	2.63	6.59
3	20,622	4.64	11.22
4	24,586	5.53	16.75
5	60,679	13.64	30.39
6	49,149	11.05	41.44
7	67,701	15.22	56.65
8	83,358	18.74	75.39
9	46,460	10.44	85.83
Satisfied	63,046	14.17	100.00
Total	444,917	100.00	

Figure 1. The target variable and the frequency of its values before and after removing (1remove_DKNA.do for Stata) the artificial increase of scales due to the original encoding of DK/NA values as negative numbers by WVS

The next step was to load these .csv exports into the Rattle interface, version 5.5.1 – started using two commands in R, namely *library* and *rattle*, then set A170bin as the target, ignore its source A170 from the list of inputs and apply the Adaptive Boosting technique for the decision tree classifiers (Karabulut and Ibrikci, 2014). This step ran (Chen *et al.,* 2008; Williams, 2011) for four versions of this most comprehensive dataset of WVS - v4.0, 3.0, 2.0, and 1.6 - using default settings. The purpose was to discover the most resilient related variables at the intersection of those four versions, cross-validation considerations. The latter was the 1st selection round, 9 resulting variables.

Other alternative selections applied only to the most recent and comprehensive version (4.0) and starting after the same DK/NA treatments considered:

- The use of the Naïve Bayes classification algorithm inside the Microsoft DM add-in for spreadsheets that works together with SQL (Structured Query Language) Server Analysis Services 2016 on a machine running Windows 10 Professional X64;
- The use of filter options applied to the results of a correlation command (PCDM or Pairwise Correlation-based Data Mining) for selections in Stata 17 (invoked for the scale form of the target variable, namely A170, Figure 2) on the same machine.

First, they meant a minimum threshold of 0.1 (Schober *et al.,* 2018) for the absolute values of pairwise correlation coefficients (Homocianu and Airinei, 2022) between each recoded variable from the previous step and the one to analyze. In addition, a maximum accepted p-value, max p=0.001, and a minimum support afferent to a minimum number of valid observations for the target variable, at least half the total corresponding number – 444917/2, Figure 2, for each pair.

Only seven (7) variables proved to be the most resilient at the intersection of Adaptive Boosting (Rattle in R), Naïve Bayes (Analysis Services), and PCDM (Stata). From these seven, only the first six were confirmed, successive invocations until no loss in selection, when using CVLASSO or Cross-Validation LASSO for performing random cross-validations and RLASSO or Rigorous LASSO for removing overfitting available after installing the LASSO - Least Absolute Shrinkage and Selection Operator pack (Ahrens *et al.,* 2020), and the BMA (Bayesian Model Averaging) command in Stata 17 for both forms of the target variable (S002VS set as auxiliary influence in BMA).

Additionally, some socio-demographic variables served non-random cross-validations. For the first (non-random cross-validations), these variables helped mixed-effects models (Roberts *et al.,* 2017; DeBruine and Barr, 2021) in Stata 17 MP or Multi-Processing, 64-bit version. Such models included both fixed-effects, the remaining six variables after the previous selection phases and random ones, clusters on gender, age, marital status, number of children,

education level, income level, professional situation, settlement size, country, and survey year, all as socio-demographic variables, bottom of Table A1, the Appendix A section.

The immediate selection phase measured the existing collinearity between the remaining influences, the six above. First, a matrix with correlation coefficients augmented with intensity bars has been generated only for these six remaining influences (Schober *et al.,* 2018). In addition, Ordinary Least Squares (OLS) regressions served the same purpose by measuring the computed VIF (Variance Inflation Factor) against (eq.1) the maximum accepted VIF threshold of the model (Vatcheva *et al.,* 2016) for all combinations of two influences of those 6 (combinations of n=6 taken by k=2, meaning 15 possibilities – eq.2). E235 and E236 emerged as being collinear at this point.

Model's maximum accepted VIF = 1/ (1– model's R-squared) (1)

C (n, k) = n! / (k! * (n-k)!) (2)

Where: C (n, k) is the number of combinations of n taken by k,
n! is the factorial of n,
k! is the factorial of k,
and (n-k)! is the factorial of (n-k).

In addition, to choose between these two, logistic regressions have been used. The variable that is responsible for generating models with more explanatory power/larger R-squared (Irandoukht, 2021) and more information gain/smaller values for both AIC (Akaike Information Criterion) and BIC or Bayesian Information Criterion (Lai, 2020) was preserved, e.g. E236.

Additionally, two prediction nomograms (Zlotnik and Abraira, 2015) resulted one simple and another one augmented with additional details to become self-explanatory when using the nomolog command (after its previous install using a specific installation syntax, namely net install st0391, and considering most stalwart remaining influences.

Moreover, reverse causality checks were performed using ordinal logit/logistic or ologit (Ordered LOGIT) regressions and the scale form of the target variable A170osc. In each of these regressions that considered only one of the remaining input variables, the latter served both as input and outcome interchanging these roles with A170osc, regression pairs. A larger R-squared, representing smaller differences between the observed data and the fitted values/theoretical model, and/or a lower AIC and BIC, better fit and smaller information loss for the resulting models are an indication that each of the remaining variables to further select are more likely to be determinants of A170osc rather than vice versa, determined by it.

Finally, for each variable in the core, three determinants, a two-way graphical representation scatter chart was automatically generated by

considering each corresponding relationship with the outcome variable, life satisfaction in its scale format tabulated on average by peculiar criteria using the tabstat command in Stata. The reporting of results mainly benefited from the estout prerequisite package, with support for both the *eststo* and *esttab* commands (Jann, 2005; Jann, 2007), allowing the direct generation of tables, in the console and as external files, respectively) with default performance metrics and some additional ones (Homocianu and Tîrnăucă, 2022) for well-known statistical models.

3. RESULTS AND DISCUSSION

After performing the first selection step using Adaptive Boosting on four versions of the WVS dataset, a set of nine intersecting variables resulted A008, A009, A173, C006, D002, E235, E236, S002/S002VS, and X047/X047_WVS, as seen in all four sources. This acted as the first selection round based on cross-validations considering different versions, with different numbers of observations of the source dataset.

The results of applying the first alternative selection based on Naïve Bayes classification in Microsoft DM and Analysis Services on version 4.0, the most comprehensive one of the WVS dataset, after removing DK/NA values, was a dependency network. Only eight of those nine influences resulting at the previous step, all at the intersection of those four sources above, except for D002, are present in this network.

Next, some filters served the selections when performing correlations using the PCDM custom command in Stata (Homocianu and Airinei, 2022) on the same WVS dataset (the most recent and comprehensive version, 4.0). For instance, min.abs.correl.coeff.=0.10, min.N=222459(=round of 444917/2, where 444917 is the number of valid observations for the target variable, as seen on the top-right and bottom of Figure 2, and maximum p-value of 0.001. The results in Figure 2 indicate only seven (A008, A009, A173, C006, E235, E236, and X047_WVS) of those nine remaining variables above, all except for D002 – low support, meaning just 26459 observations as seen in the description of variables and general statistics, Tables A1 and A2, Appendix A-https://tinyurl.com/nb9xkcrw, and S002VS – low correlation coefficients below the threshold value of 0.10.

The next concern was to start from the same nine robust common influences above and perform random cross-validations (cvlasso), selections based on removing overfitting (rlasso), and BMA selections, which reports Posterior Inclusion Probabilities or PIP, preferably as close to 1 as possible, all three until convergence (no loss) and considering both forms (binary and scale) of the target variable (A170 and A170bin). Cvlasso used both the *lse* option, largest lambda for which MSPE or the Mean Squared Prediction Error is within one standard error of the minimal MSPE, and the *lopt* one, the lambda that

minimizes MSPE. After this stage, those seven variables remaining after PCDM persisted, all nine except for D002 and S002VS.

Next, three rounds of non-random cross-validations run using mixed-effects modeling. For the first such round, just one variable, namely X047_WVS, scale of incomes of the remaining seven, the ones bolded in Figure 2, acting as fixed-effects lost significance, nine from eleven models/scenarios with A170 set as target. And this was observed because of considering many clustering criteria/random effects the socio-demographic variables mentioned in the previous section, and two mixed-effects regression types, both *melogit* (Mixed Effects LOGIT) for the binary form of the response variable and *meologit* (Mixed Effects Ordered LOGIT) for the one having values on a scale. If considering only the remaining six as fixed-effects, all bolded in Figure 2 except for X047_WVS - 2nd round of non-random cross-validations, there was no loss in significance no matter the clustering criteria.

Outcome(y)	Input(x)	Correl.Coef.(CC)	Abs.Val.CC(ACC)	No.Obs.(Nobs)	Signif.(p)
A170	A170	1	1	444917	0
A170	COW_NUM	-0.105104312	0.105104312	444917	0
A170	A003	-0.122021491	0.122021491	419991	0
A170	**A008**	-0.466223018	0.466223018	436729	0
A170	**A009**	-0.302639294	0.302639294	433318	0
A170	A030	-0.114502351	0.114502351	440004	0
A170	A124_07	-0.10253212	0.10253212	405676	0
A170	A124_09	-0.126325523	0.126325523	397690	0
A170	**A173**	0.40825782	0.40825782	427474	0
A170	**C006**	0.566084129	0.566084129	431278	0
A170	D059	0.114466403	0.114466403	375051	0
A170	E037	-0.143889074	0.143889074	414830	0
A170	E069_06	-0.104019174	0.104019174	417463	0
A170	E124	-0.170445435	0.170445435	317632	0
A170	E218	0.100172563	0.100172563	240338	0
A170	E234	0.110268045	0.110268045	243962	0
A170	**E235**	0.124808794	0.124808794	253597	0
A170	**E236**	0.200398372	0.200398372	242184	0
A170	F118	0.111835555	0.111835555	400329	0
A170	G006	-0.131029692	0.131029692	428960	0
A170	X044	-0.168521588	0.168521588	370305	0
A170	X045	-0.215984693	0.215984693	374130	0
A170	**X047_WVS**	0.222011672	0.222011672	406573	0
A170	X047R_WVS	0.203961615	0.203961615	407680	0
A170	Y020	0.112914118	0.112914118	432158	0
A170	Y022	0.118219199	0.118219199	386674	0
A170	Y011B	-0.131037177	0.131037177	428960	0
A170	Y014B	-0.103993829	0.103993829	417463	0
A170	Y022B	0.114356785	0.114356785	375051	0
A170	Y023A	0.111835552	0.111835552	400329	0

Figure 2. Results of a selection command (PCDM) based on pairwise correlation and additional filters on magnitude, support, and significance for the WVS dataset (v 4.0)

To additionally validate the simultaneous removal of both X047_WVS and S002VS at the previous steps, D002 no longer considered due to its low number of valid observations, an additional set of non-random cross-validations (3rd round of non-random cross-validations) based on both *melogit* and *meologit* has

been performed (eight fixed-effects and other ten clustering variables in Table A3, Appendix A-https://tinyurl.com/nb9xkcrw).

Those six remaining influences above proved to be robust, in terms of no loss of significance, in this additional round, namely A008, A009, A173, C006, E235, and E236. The other two failed at least in one scenario: X047_WVS when cross-validating using most socio-demographic variables as cluster criteria except for the age (X003) and the number of children (X011) and considering the scale form of the target variable (A170), while S002VS (chronology of EVS-WVS waves) when cross-validating using the highest educational level attained (X025), the country code (S003), and the survey year (S020) as cluster criteria and considering both forms of the target variable (A170bin and A170).

Next, when verifying the existing collinearity using the first method, a matrix with correlation coefficients and a minimum visual augmentation using intensity bars for the remaining six influences emerged, in Figure 3 all Pearson correlation coefficients are significant at 0.1‰. The latter, as absolute values, shows no evidence of collinearity if considering 0.1 and 0.39 as the lower and upper limits for weak correlation, while 0 and 0.1 as the ones for negligible correlation (Schober *et al.,* 2018).

	A008	A009	A173	C006	E235	E236
A008	1					
A009	0.3699	1				
A173	-0.249	-0.1972	1			
C006	-0.3459	-0.2549	0.3193	1		
E235	-0.0479	-0.0518	0.1556	0.0933	1	
E236	-0.1415	-0.0977	0.1414	0.2105	0.2107	1

Figure 3. Collinearity view using a matrix with correlation coefficients coupled with intensity bars only for the remaining six influences and the *pwcorr* command in Stata

In addition, OLS max.Comput.VIF against OLS max.Accept.VIF (eq.1) for models with all six previously tested influences (Figure 3) at once (model 1 in Table A4) and additionally taken each two (models 2-16 in Table A4) in all 15 combinations (eq2.) served discovering further evidence of collinearity. The removal decision considered one of the two variables. It is about E235 and E236, namely the importance of democracy as own value and democracy as perceived in own country, respectively model 16 in Table A4, namely the only one for which OLSmaxComputVIF > OLSmaxAcceptVIF (Homocianu and Tîrnăucă, 2022).

After performing additional logit regressions, E236 brought higher accuracies (AUC-ROC or Area under the ROC Curve (Receiver Operating Characteristic Curve) of 0.8350 and 0.8351) and R-squared values (0.2645 and

0.2649) together with better fit due to lower AIC and BIC values than E235 (AUC-ROC of 0.8340 and 0.8345, R-squared of 0.2624 and 0.2638). And this was recorded when considering the binary form of the target variable, model 3 vs. model 4 for comparable support due to the same number of observations using a filtering condition on the variable dropped, and model 5 vs. 6 for all but different numbers of available responses and no filtering condition - Table A5. In the case of additional ologit regressions, the models keeping E235 and dropping E236 were better as R-squared than those keeping E236 and dropping E235. Not the same applied in terms of information gain. Consequently, the balance is inclined towards keeping E236. This was at the expense of removing E235, the other democracy-related variable.

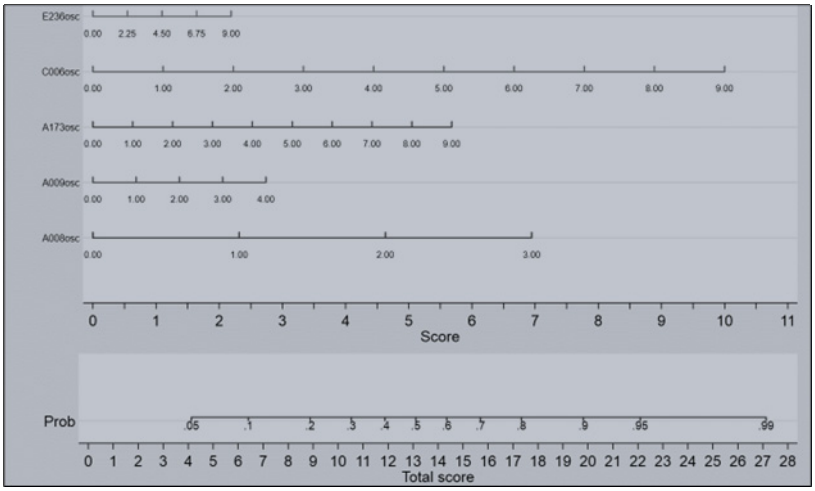

Figure 4. Prediction nomogram for a model with five influences

As support, 234,223 valid intersecting observations, meaning 51.95% of the total number of records for the entire dataset) corresponding to the last three waves were behind the first core model (model 5, Table A5). This is because all five most resilient influences and the response variable were considered simultaneously only in these three waves (2005-2009, 2010-2014, and 2017-2022), E236 having no observations for the first four. The same happened if removing E236 and preserving E235 with a slight increase in the number of responses (more than 245,000 valid intersecting observations - model 6, Table A5, and a slight decrease in terms of accuracy of classification (AUC-ROC=0.8345). If removing both E235 and E236 (model 2, Table A5), the support increases to 410,513 non-null intersecting observations, meaning 91.05% from the total number, namely 450,869, and 92.26% from those 444,917 valid for the target variable, while covering all seven waves and increasing the

accuracy of classification (AUC-ROC=0.8458). Furthermore, the four remaining influences are now fully included in the list of the mightiest links in a Naïve Bayes dependency network.

Next, a simple Stata script design supports the alignment of the scales to 0 for the target variable and those corresponding to some solid influences of it. Another purpose of the latter was to optimize the following two prediction nomograms (Figure 4, *nomolog* command in Stata) for better readability. Both fundaments on binary logistic regressions. The corresponding two models are identical to those numbered 2 and 5 (Table A5) in terms of performance metrics and values of coefficients and errors for the top five influences except the sign of the first two, namely A008 and A009, due to reversed scales. These serve the visual interpretation of all remaining most potent influences. The first nomogram is simple, meaning the exact way it results after generating it using the *nomolog* command. It corresponds to a model with five resilient influences, with lower support, 51.95% of the total number of observations because of E236osc, but still generating a considerable R^2 (0.2649) and a good accuracy of classification (AUC-ROC of 0.8351). The second one corresponds to a model with only those four most resilient influences and high support (91.05% of the total observations of the WVS dataset, version 4.0), generating an R^2 of 0.2884 and a good accuracy of classification (AUC-ROC of 0.8458). This second nomogram is augmented with metadata about the individual score at the intersection with the X-axis, perpendicular lines drawn next to each possible value of the associated influences, respectively with suggestions for interpreting the input values, their corresponding scores, and the resulting total score and afferent likelihood, so that the nomogram is self-explanatory. The maximum theoretical probability for the most advantageous combination of variable values, extreme right in both nomograms is high. It indicates a value of more than 0.95, middle and bottom of Figure 4. These nomograms also reflect the magnitude of marginal effects, better comparability than with raw coefficients, for the corresponding variables. In addition, they serve to understand the cumulated effect size by considering the amplitude of any scale easily noticeable in these visual representations.

Final cross-validations considered models with seven, the quad-core plus the marital status/X007osc, social class/X045osc, and settlement size/X049osc or eight influences, the penta-core plus the same three above) and a reasonable number of criteria for cross-validations. They infirmed the last three influences added to those two cores when considering cross-validation criteria such as gender, employment status, the chronology of waves, country, and survey year in the case of the last two from those three, social class and settlement size, or the number of children in the case of marital status. This happens even if the two overall models with 7 and 8 influences did not show multi-collinearity and recorded significance for all corresponding variables and accuracy and R^2

scores better than the two core models with four and five components that passed already all the cross-validation tests.

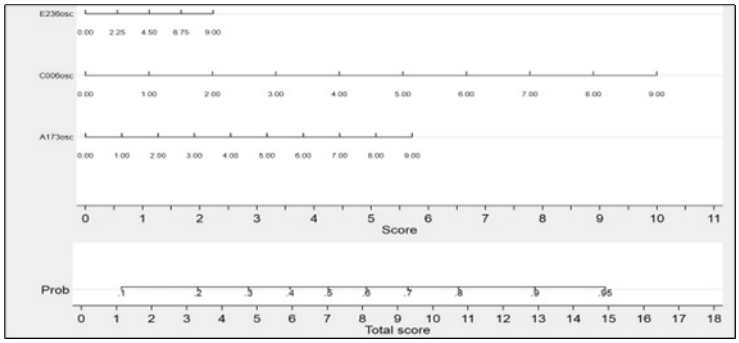

Figure 5. Prediction nomogram corresponding to a robust model with only three determinants (after performing reverse causality checks)

After performing some reverse causality checks (Table A6), only three variables from those five most robust influences (model 5, Table A5) confirmed also as determinants (A173osc, C006osc, and E236osc). Both a separate binary logistic model and a corresponding prediction nomogram (Figure 5) only for this triad of determinants were generated. The performance metrics of this model with only three components indicated an AUC-ROC of 0.814, lower than the one of model 5, Table A5, but still meaning a good accuracy of classification, and an R-squared of 0.2205. Moreover, the maximum theoretical probability for the most advantageous combination of those three determinant values (right edge of each line in Figure 5) still indicates a value of more than 95% (18 or the sum of 5.75, 10 and 2.25 on the score axis corresponds to a lot more than 0.95).

Some tabulations by mean support the to-way graphical representations between the target variable and each of the core model with three determinants (Figure 5) as depicted in the representation below (Figure 6). As magnitude (descending order of scale amplitudes), the first and most important of these three determinants (triad) corresponds to satisfaction with the household financial situation. It indicates that people more satisfied in such terms are more likely to show more contentment with their lives (positive influence or the maximum recoded value of 9 for C006osc, the right side of Figure 5). The latter means that this type of financial satisfaction (household-related) is among the best associated with life satisfaction according to WVS data (complete validation of H2). This finding is in line with the already documented relationship between both the financial costs and benefits and their well-being implications (Xiao *et al.,* 2009; Ng *et al.,* 2019; Brzozowski and Spotton Visano, 2020; Barrington-Leigh, 2021).

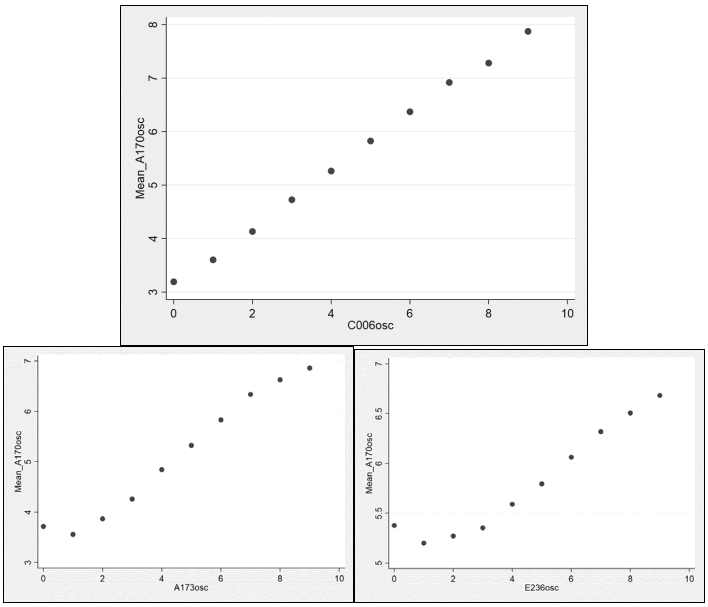

Figure 6. Two-way graphical representations of the relations between each variable from the core model

The second most potent determinant found is afferent to the level of freedom of choice and control. It means that the people with a higher level for this type of freedom are also more likely, positive influence or the maximum recoded value of 9 for A173osc - the right side of Figure 5, to be satisfied with their lives. The latter is in line with the findings of other scholars (Abbott *et al.,* 2016; Ngamaba, 2016; Li *et al.,* 2017) and contributes to the validation of H1.

The third overpowering determinant relates to considerations about democracy. E236osc corresponds to the perceived level of democracy in own country, and it is a positive influence, the maximum recoded value of 9, the right side of Figure 5. E235 (model 4 in Table A5) also indicates the importance of democracy, as reflected in the WVS survey responses. The latter is also positively correlated with the response variable and shows that people more inclined to declare the overall importance of democracy are also more likely to be satisfied with their lives. These two findings are compatible with other similar discoveries from the scientific literature (Orviska *et al.,* 2014; Loubser and Steenekamp, 2017). The latter means a complete validation of H3.

The specific features of some countries will be the object of future research on the same topic. For instance, a dummy variable referring to ex-communist countries or not (Homocianu *et al.,* 2022), some country-dependent measures of economic activity such as GDP or the ratio between Stock Market Capitalization

and GDP (Gross Domestic Product) defined in The World Bank Data Catalog, or even the Worldwide Governance Indicators defined by Kaufmann *et al.* in 2010 and used in many other studies including recent ones (Abegaz *et al.,* 2023; Antón *et al.,* 2023).

The reverse causality checks indicated only three determinants (a triad) from the penta-core model, namely the satisfaction with the household financial situation (C006osc), the level of freedom of choice and control (A173osc), and the perceived level of democracy in own country (E236osc), in this specific order given by the descending order of magnitude of effects corresponding to these three (Figure 5).

A limitation of this study is the impossibility of applying the obtained models to a specific list of countries. For instance, the core model with three determinants does not apply to respondents from Israel (no responses for variables A173, and C006). The same happens in the case of 16 other countries from a total of 108, namely Albania, Bosnia-Herzegovina, Croatia, Dominican Republic, El Salvador, Israel, Kuwait, Latvia, Lithuania, Montenegro, Qatar, Saudi Arabia, Uganda, North Macedonia, Tanzania, and Uzbekistan (this time, no responses for E236).

4. CONCLUSIONS

Following an exploratory approach to World Values Survey data, including the latest and the most comprehensive dataset (version 4.0, time-series 1981-2022), an accurate model with three strong non-redundant determinants fully supported by most data emerged. It indicates that a specific type of respondent is more likely to be satisfied with life. The latter means being more content with the household financial situation, showing a superior level of freedom of choice and control, and exhibiting more exposure to democracy and democratic values. Prediction nomograms presented in this article acted as powerful ranking instruments and probability identification tools. All conclusions related to the identified determinants stand on a triad logit model with a good classification accuracy (AUC-ROC greater than 0.8) and a high maximum probability (more than 95% for the most advantageous combination of values for those three most resilient identified determinants). They resulted after performing initial value treatment and, in addition, many selection rounds, and robustness tests, including three types of cross-validation and overfitting, collinearity, and reverse causality checks.

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THE ROLE OF ORGANIZATIONAL CULTURE IN THE DEVELOPMENT OF HUMAN RESOURCES

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Abstract
Organizational culture is a complex and important concept in the management of all organizations, with a role in highlighting the values, norms, behaviours, and way of thinking, as well as the interaction between the members of the organization and the fulfilment of the established objectives. The continuous evolution of society determines the progress of each individual organization, both economically and socially. Organizational culture is increasingly present in all economic, social, and cultural branches, improving the way of working, and contributing to the increase of expectations regarding social requirements, the content of work, and the quality of the workplace. In the development of human resources within an organization, organizational culture has an important role, as it can support this aspect, leading to good organization and increasing the efficiency of the organization; the more perfected the human resources will be, the more their efficiency will increase and, thus, the good functioning of the organization in general. This article aims to highlight, through the literature review, the importance of organizational culture within an organization for human resources and, thus, for the organization.
Keywords: *economy; development; human resources; organizational culture; health.*
JEL Classification: H10, I15, M14, O15.

1. INTRODUCTION

Organizational culture has become a concern of the modern world, and one of the "key mechanisms" of management, representing a complex process that

includes a series of activities aimed at influencing the decisions of managers, and the impact of their actions on the performance of institutional activities, as well as on the predicted or planned results. It is known that managerial decisions are reflected in the functioning of hospital units and, thus, in the health status of the population, which is essential for economic well-being, and considered a supporting factor for socioeconomic development. The concern of managers to provide high-performance health services, as well as the rapid increase in expenses for this sector, simultaneously with the increase in the number of requests from patients, have sharpened the need to identify all the factors that influence these aspects.

Organizational culture plays an important role in human resource (HR) development, having a significant impact on how employees are recruited, developed, motivated, and retained within an organization. In the public hospital environment, the organizational culture focuses on responding adapted, flexible, and fast to the demands of the population through skills corresponding to the economy and society, considering that health is a key condition for ensuring economic growth, and sustainable development at the global level. In the field of health, organizational culture is involved in all areas of activity, from attracting, training, and perfecting medical personnel for all levels of training to the financial one required to secure investment sources for the field's activities.

2. LITERATURE REVIEW

Organizational culture takes shape over time, and within the organization, one of its most important roles is to influence employee behavior and attitude. Most of the time, this concept is established simultaneously with the organization, by the decision-making factors, with the idea of implementing certain rules and behaviors (Ziliberberg, 2005, p. 82). Thus, according to Schein (2010), organizational culture constitutes the model of elementary assumptions discovered, and implemented in response to certain problems that come from the internal or external environment, and that require a solution that can also be used by new members of the organization (Schein, 2010, p. 17). Organizational culture is "a model of basic expectations that a particular group has invented, discovered, or developed in the course of learning to solve problems of external adaptation, and internal integration, and that has worked well enough to be considered valid" (Schein, 2010, p. 373). Thus, the degree of cultural integration is dependent on the stability of the group, the length of time the group has existed, and the intensity of the group's learning experiences.

In the view of Jones (2004), organizational culture refers to values with the role of controlling employees' interactions, both with each other and with suppliers, customers, and others outside the organization (Jones, 2004, p. 9). Thus, the culture of an organization is shaped by the people inside it, by the ethics of the organization, by the rights offered to employees, as well as by the

type of structure used in the organization. Therefore, organizational culture shapes, and controls behavior within the organization, influencing how people respond to certain situations, and how they interpret the organizational environment. Hofstede (2010), one of the most recognized researchers in the field, defines organizational culture as an influence on employee behavior, an aspect that differentiates organizations from each other (Hofstede *et al.,* 2010, p. 6). Gănescu (2011) defines organizational culture as the set of values, attitudes, norms, and beliefs specific to a company that give it identity, have a relatively stable character, and have a significant impact on the success or failure of members, and the company (Gănescu, 2011, p. 20). Flamholtz and Randle (2012) developed the field of organizational culture, and its contribution to business performance, respectively, with practical examples of numerous corporations in the US, Europe, China, and other countries. Sharma and Good (2013) showed the influence of organizational culture on the decisions and performance of organizations.

According to Warrick and Muelle (2015), the conceptual approach to organizational culture includes (1) values and beliefs that underlie the organization's principles, ideas, and actions; (2) norms and behaviors accepted by the organization's members, which are the basis of communication, conflict resolution, and collegial relations, as well as relations between the organization's representatives and collaborators; (3) specific symbols and rituals, namely logos, slogans, dress codes, and events that reinforce and convey the organization's values; (4) The organizational structure can influence the evolution of the organization; a flat and flexible structure can promote innovation and adaptability; and a hierarchical structure can emphasize control. (5) Organizational communication can promote an open culture or a hierarchical or conservative one; (6) Recruitment and selection refers to choosing organizational members based on specific criteria and shared values; (7) Reward and recognition means encouraging the performance of organization members and may include financial rewards, public recognition, and development opportunities; (8) Responsiveness to change means that a culture that is flexible and open to innovation is more competent regarding changes in the environment (Warrick and Muelle, 2015, pp. 1–16).

In addition to the fundamental studies mentioned, we also mention other authors who contributed to the development of the theory of organizational culture: Racelis (2010); Agbejule (2011); Eckenhofer and Ershova (2011); Ramachandran *et al.* (2011); Naranjo-Valencia *et al.* (2011); Prajogo and McDermott (2011); Ahmadi *et al*. (2012); Cerne *et al.* (2012); Singh (2013); Akhavan *et al.* (2014); Heritage *et al.* (2014); Cao *et al.* (2015); Deem *et al.* (2015); Rawashdeh *et al.* (2015); Gambi *et al.* (2015).

The specialized literature illustrates the impact of cultural factors on human resource management practices (Ferris *et al.,* 1998; Ogbonna and Whipp, 1999;

Brockbank, 1999; Khatri and Budhwar, 2002; Higgins and McAllaster, 2002; Chan *et al.,* 2004; Bowen and Ostroff, 2004; Stone *et al.,* 2006; Stone *et al.,* 2007; Kristof-Brown, 2007), which demonstrates the link between national culture, organizational culture, and the selection and choice of human resource management practices. Although in foreign specialized literature there are numerous analyses, both qualitative and quantitative, unitary or comparative, in Romania these studies are quite rare (State, 2004, pp. 35–36), and the influence that culture can exert on organizational processes and especially on organizational performance in an increasingly complex economic environment is particularly large.

3. HUMAN RESOURCES – ESSENTIAL RESOURCE IN THE ECONOMY

Organizational culture, which can influence human resources, refers to management's shared beliefs and convictions about the nature and behavior of employees, while the socio-cultural environment refers to managerial perceptions of people's shared values about how a society is structured and functions. In addition, organizational culture consists of two sets of beliefs: those related to employees and those related to tasks, each of which is influenced by different aspects (the socio-cultural environment and that of the organization). The human resources within an organization are directly influenced by the results of the decision-making process, since the decision-makers, through the decisions they adopt, have the role of motivating, maintaining and developing human resources; the human resources route thus reflects the results of the decisions.

Organizational culture is a source of potential and the expression of a collective capacity. It also represents a resource for individuals, for groups within the organization, and for the organization. Culture can be more than a context or a force; it can be a basis for management (Erez, 2010). By increasing the responsibility and work attachment of the staff, it can provide a solid basis for improving services and the entire strategic evolution, showing interest in management and increasing the chances of being efficient through interventions at several levels: (a) in increasing the degree of knowledge of the organization's reality: understanding the social climate, the analysis of jobs, the audit of activity evaluation systems, and management control are not the only ones that pass through the filter of culture; (b) in feeding the strategic reflections, improving the diagnosis and its implementation. In this sense, it allows testing the relevance of decisions on the selection of what has a chance of success; (b) it widens the field of analysis of situations for the manager and incites him to explain the functioning of the organization before changing it. Culture reinforces the principles of intelligence and rationality in the organization; this does not mean avoiding change but knowing its effects well; (c) in bringing, ethically, an

incentive framework for the manager. Certainly, the manager as a person will develop his own analysis of the facts, but culture is a collective counterweight consisting of the set of values that the group has constituted and of which he must consider (Jacoby, 1991).

Human resource development is an essential process for developing the skills and competencies of employees within an organization. This form can cover a wide range of specific areas and can be tailored to meet the needs of the organization.

4. THE TRAINING OF HUMAN RESOURCES IN THE PUBLIC HOSPITAL ENVIRONMENT IN ROMANIA

The challenges in health start from attracting and training qualified human resources whose skills are becoming increasingly complex, including in the fields of digitization, robotics, and even artificial intelligence, to those creating the premises for a transformation of the perspective of health interpreted as an expense to the paradigm of health seen as an investment in a sustainable, smart, and resilient future. The complexity of health systems and the diversity of their analysis methods, including the multiple and repetitive issues they faced at the European level during the period of the economic-financial crisis and post-crisis, up to the present still dominated by the effects of the pandemic, have contributed to the highlighting of clear and specific vulnerabilities that the systems incorporate, regardless of the degree of development of the countries affected by specific demographic, economic, and social risks (Quijano, 2006, p. 25).

In the current period, at the level of our country, the level of professional training of future medical personnel is high, and more and more young people opt for working in this system, considering as the main possibility the qualification in the country and the profession abroad. The Romanian environment for training personnel in the health system provides them with systematic processes through which new professional knowledge is acquired through practice in hospital units, as well as the discovery of one's own skills and abilities necessary to effectively and professionally fulfill the duties of the future workplace. Thus, at the national level, we meet numerous universities of medicine, dentistry, and pharmacy, as well as post-secondary health schools, whose graduates are future doctors, pharmacists, medical assistants, pharmacy assistants, as well as balneo-physio-kineto-therapy and recovery medical assistants.

The Romanian training environment for medical personnel provides them with systematic processes of acquiring new knowledge through practice in hospitals and discovering their own skills and abilities necessary to fulfill the duties of the future workplace as efficiently as possible. This training system must help the future medical staff to: (1) develop the set of knowledge and skills in order to achieve the professional goals; (2) have the appropriate attitude to

develop and achieve performance; (3) experience the skills acquired so that, in real work situations, the percentage of mistakes is reduced; (4) understand and perceive the needs of patients; and (5) visualize their work in the context of the whole team (Grieves, 2003, pp. 56). Considering the high quality of studies and practice offered by medical universities in our country, more and more students are heading for professional training in the universities of Bucharest, Iaşi, and Cluj in particular. The desire of young people to study medicine in our country is driven by the involvement of the authorities that offer places within the budget and significant scholarships, as well as by the contractual relations between universities and hospital units, which allow future medical professionals to put into practice the accumulated theoretical notions.

The training system is necessary to support the future medical staff in developing their knowledge and skills to achieve their professional objectives, in having the appropriate attitude towards evolution and achieving performance, in visualizing their own work in the context of the entire work team, as well as in experiencing the skills acquired, so that, in real work situations, the percentage of mistakes is reduced. Within the education system, medical personnel need to be trained in order to develop an understanding and perception of patients' needs because the work of a medical staff involves interaction with patients of all ages, suffering from various ailments, with different forms of education, and thus, it is necessary that the approach be tailored according to each person's behavior and living environment (Alles, 2013, p. 7). Thus, medical personnel need motivation to practice, qualify for, and be maintained in the national system of health services, as well as to practice a qualitative activity with responsibility, professionalism, and dedication, because the state of health in society depends on these aspects.

The precarious level of the national economy has determined, in the last 20 years, that Romania exports a labor force that is both highly qualified and unskilled. Unlike the rest of the professional categories, the emigration of medical personnel directly affects society by reducing the availability and quality of health services. Although the number of graduates and young people heading towards this profession is constantly increasing, our country is facing an acute shortage of medical personnel. This fact is possible because of the emigration that has increased in recent years, and the negative effects are reflected on the entire national public health system.

Hospital units from other countries motivate and want to maintain Romanian medical staff, whose work they appreciate. Thus, after the emigration of the best specialists, now they are taking the path of foreign countries and the less trained medical personnel, considering the fact that they are offered qualification at the workplace and a salary remuneration in line with expectations. The main reason why medical personnel decide to leave the country that trained them professionally is represented by a salary far below the minimum level existing in

the European Union. Also, the precarious level of the economy that prevents the allocation of substantial amounts of GDP to this sector and the lack of interest and support from the authorities cause medical professionals to opt to practice in other countries.

5. DEVELOPMENT OF HUMAN RESOURCES WITHIN THE HOSPITAL UNIT

Organizational culture is a key element in the development of human resources, having a direct impact on how employees are attracted, motivated, developed, and maintained within the organization. It is important that leaders and HR departments are aware of the influence of organizational culture and work to build and maintain a culture that supports employee growth and development.

The development of human resources within a hospital unit is essential for ensuring the quality of health services and for promoting an efficient and motivating work environment. Authors such as Pieper (1990), Townley (1994), Kehoe (2000), Millward *et al.* (2000), and Stone *et al.* (2006) describe important elements and steps in the development of human resources within a hospital unit.

(1) The provision of continuing professional development and training programs is important for hospital staff. Medical as well as non-medical staff need training opportunities to improve their skills and knowledge of the latest health practices and technologies.

(2) A solid orientation program is essential to introduce new employees to the specific culture and procedures of the hospital facility. By providing detailed information and facilitating interaction with colleagues, the hospital unit can ensure a faster and more efficient adaptation of new team members.

(3) The implementation of an effective performance management system can contribute to the periodic evaluation of employees and the identification of development needs. Constructive feedback and clear goals can motivate employees to improve their performance.

(4) Creating a mentoring program within hospital units can facilitate the exchange of experience and knowledge between more experienced and less experienced employees. This aspect can contribute to the professional and personal development of employees.

(5) Hospital units may implement programs that promote the health and well-being of employees through activities that may include wellness activities, counseling for stress management, and work-life balance.

(6) A positive and supportive organizational culture can stimulate human resource development. A climate where employees feel valued, recognized, and encouraged to share their ideas can help increase job satisfaction and engagement.

(7) The development of human resources must consider the diversity of the team. Encouraging diversity and promoting inclusion can bring significant benefits, including increasing creativity and improving working relationships.

(8) In a constantly changing medical environment, the ability to manage change is essential. Human resource development should include strategies for adapting staff to changes in technology, medical protocols, and other developments in healthcare.

By investing in human resource development, hospital facilities can ensure not only the provision of quality medical services but also the creation of a work environment that promotes employee satisfaction and encourages innovation and continuous improvement.

6. CONCLUSIONS

Managing human resource development requires a significant portfolio of skills: adaptability, mission, engagement, and competencies. In hospital units with strong adaptive cultures where human resources share a broader vision, the workforce will be more united and cooperative, and productivity will increase. Hospital units that have developed an organizational culture are open to new ideas, have competitive advantages, and incorporate these ideas quickly and successfully. Success is more likely when human resources and decision-makers within hospital units are goal-directed. Organizational culture increases the commitment and involvement of human resources towards the achievement of objectives. Therefore, it is recommended that the management of organizations implement organizational cultures that are adaptive. Organizations' mission, vision, and values must be shared to promote cooperation, and employees must be involved in making decisions that affect them, as this will lead them to ensure that decisions are implemented.

The development of human resources can be considered an essential element of the development and quality of organizational services and a source of sustainable competition. Therefore, it is found that cultural improvement would result in enhanced performance of human resources and the entire organization. Organizational culture includes both the spiritual and material aspects of organizational life.

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THE NEW ERA OF DIGITAL MARKET

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Abstract
The digital services legislative package which consists of the Digital Services Act and the Digital Markets Act became fully applicable on 7 March 2024 and the first positive signs are already starting to appear. These regulations establish a framework for regulating large technology companies, known as gatekeepers, to ensure they do not abuse their market power and to protect users' online privacy and consent. Consumers will have more and better services to choose from, more opportunities to switch providers if they want to, direct access to services and fairer prices. Businesses that depend on gatekeepers to provide their services in the single market will have a fairer business environment. In this article we aim to present the main legislative changes that apply to digital markets, as well as the first measures implemented by the big players such as Google, Apple, Amazon, Microsoft, Meta and TikTok.
Keywords: *DSA; DMA; gatekeepers, advertising; digital marketing; social media.*
JEL Classification: K21, K23.

1. INTRODUCTION

Digital markets benefit from a new regulation composed of two regulations adopted by the European Union, namely the Digital Markets Act - DMA Regulation EU) 2022/1925 (Digital Markets Act, 2022a), and the Digital Services Act – DSA, Regulation EU) 2022/2065 (Digital Services Act, 2022b). The two regulations were developed and adopted by the European Union in response to the anti-competitive behaviors of the large digital platforms and out of the desire to create a safer and more transparent digital market (Colombo, 2021).

In recent times, digital platforms such as Amazon, Alphabet, Meta, Apple, Microsoft have taken advantage of their dominant position on the market and sabotaged the economic interests of competitors, consumers and endangered the operation of market mechanisms based on a functional economy. The European Commission intervened to regulate all these imbalances, but also to modernize and standardize the legislation in this field (EU Digital Markets Act, 2024). The legislative package adopted by the European Commission aims to give it the necessary tools to control Big Tech, to restrict the anti-competitive practices of

the important technology players and to force them to allow access to some services to smaller competitors in the market.

Prior to these regulations, the American tech giants were repeatedly sanctioned by the European Commission for anti-competitive practices. For example, Google was fined a record 8.3 billion euros in 2017 for favoring its own shopping service on its search engine over consumers, using its dominant position. In 2023 Google was accused of overcharging consumers through illegal restrictions on the distribution of apps on Android devices and unnecessary fees for transactions made in the Play Store. As a result, the Commission imposed a fine of 700 million dollars and forced the company to facilitate the download of applications on Android devices from sources other than the Play Store. Under the deal, Google also agreed to make changes to how Android works in the US, such as allowing developers to implement an alternative billing method for in-app purchases (Larouche and De Streel, 2021).

Apple was recently fined more than $1.8 billion by the European Commission for abusing its dominant market position in the distribution of music streaming applications to iPhone and iPad users ("iOS users") through the App Store. Taking advantage of the fact that Apple is currently the only provider of an App Store where developers can distribute their apps, it restricted developers from informing consumers about alternative and cheaper music services available outside the Apple ecosystem and from providing any instructions on how to subscribe to such offers. The commission found that Apple's conduct lasted for almost ten years and caused iOS users to pay significantly higher prices for music streaming subscriptions because of Apple's high commission. Thus, users were left without alternatives and had to subscribe only to Apple Music, to be able to listen to their favorite artists (Apple Company, 2024).

The Meta company was fined 1.2 billion euros for violating data protection rules in the European Union. As the personal data of more than 533 million Facebook users in more than 100 countries was found on a hacker's website, the Data Protection Commission of Ireland imposed this fine, pointing out that this data transfer would allow those in the American government to access Europeans' information (Meta’s Consumer Profiling Techniques Digital Markets Act, 2023).

In France, the Microsoft company was fined 60 million euros by the data protection authority, because on the Microsoft Bing search engine, the procedure of refusing cookies is not as simple as that of accepting them and did not put in place a simple system for users to refuse cookies. Google and Facebook have also previously been fined for similar practices.

Therefore, the new regulations are intended to limit the unfair practices of businesses that act as gatekeepers in the online platform economy.

2. DIGITAL MARKET ACT (DMA)

2.1. General presentation

The Digital Market Act has become the new regulatory framework for the digital economy. Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives (EU) 2019/1937 and (EU) 2020/1828 began to apply from the date of May 2, 2023 (Digital Markets Act, 2022). In fact, from the very moment of the launch of the draft regulations, many debates were born on their side (Fernández, 2021).

According to art. 1 paragraph (2), the Regulation applies to "essential platform services provided or offered by access controllers to commercial users established in the Union or to end users established in the Union or located in its territory, regardless of the place of establishment or residence of the access controllers and regardless of the law normally applicable in relation to the provision of the service". At the same time, by "essential platform service" we must understand, according to art. 2(2) of the Regulation any of the following:

- online mediation services (letter a);
- online search engines (letter b);
- online social networking services (letter c);
- platform services for sharing video materials (letter d);
- interpersonal communication services that are not based on numbers (letter e);
- operating systems (letter f);
- web browsers (letter g);
- virtual assistants (letter h);
- cloud computing services (letter i);
- online advertising services, including any advertising network, advertising exchanges and any other advertising intermediation service, provided by an enterprise that provides any of the essential platform services listed in letters (a)-(i) (letter j).

"Gatekeeper" means an enterprise that provides essential platform services. As a result, the European Commission published the list of 19 operators identified as being in the sights of European legislation, namely Alibaba AliExpress, Amazon Store, Apple AppStore, Bing, Booking.com, Facebook, Google Play, Google Maps, Google Search, Google Shopping, Instagram, LinkedIn, Pinterest, Snapchat, TikTok, Twitter, Wikipedia, YouTube and Zalando.

The regulation establishes a set of objective conditions to qualify an enterprise as a gatekeeper. Companies that operate one or more of the so-called "essential platform services" listed in the DMA are considered access controllers, if they meet the following legal requirements imposed in art. 3(1):

- are large enough to have an impact on the internal market;
- provide an essential platform service that represents an important access point through which commercial users reach end users;
- are in a solid and sustainable position in terms of its operations or is foreseeable to be in such a position soon.

A legal presumption is also regulated that companies are considered gatekeeps if: they have achieved an annual turnover in the Union or its average market capitalization/equivalent fair market value is greater than or equal to EUR 7.5 billion in each of the last three financial years; controls an important channel through which user firms connect with end consumers (where the company provides an essential platform service monthly to more than 45 million active end users established or located in the EU and annually to more than 10,000 of active commercial users established in the EU) and have a solid and sustainable position; if the company has met the second criterion in the last three years (Cennamo *et al.,* 2023).

2.2. Obligations set for gatekeepers

The new regulations establish a series of obligations for gatekeepers that they must comply with in the activity they carry out. The European legislator classified them into two broad categories: obligations to do something and obligations not to do.

Thus, they must allow business users to promote their free title offers and enter into contracts with their customers outside of their platforms; enable end users to access and use, through the platform, content, subscriptions, components or other items using a commercial user's software application; allow third parties to interoperate with the gatekeeper's own services in certain specific situations; to allow business users to access the data they generate in using the gatekeeper's platform, etc. (Hoffmann *et al.,* 2024).

In the category of obligations not to do, include those such as: not to technically restrict users from uninstalling any pre-installed software or application if they wish to do so; not prevent consumers from connecting to companies outside their platforms; not treat the services and products offered by the gatekeeper itself more favorably in the ranking than similar services or products offered by third parties on the gatekeeper's platform; not to use, in competition with commercial users, data that is not publicly available and that is generated or provided by said commercial users in the context of their use of platform services, etc. (Andriychuk, 2023).

To ensure that access controllers comply with the obligations imposed by the DMA, the European Commission can open a market investigation, during which the company concerned is obliged to provide all the requested information. The Commission may request access to, and explanations of, any data and algorithms of undertakings and testing information.

At the end of the investigation, the access controller can propose commitments to the Commission, and the Commission can adopt an implementing act making those commitments binding. If the access controller fails to comply with its commitments, the Commission may issue a non-compliance decision imposing fines not exceeding 10% of its total worldwide turnover in the previous financial year, or up to 20% in the case repeated violations. In case of systematic violations, the Commission is also empowered to take additional corrective measures, such as forcing a gatekeeper to sell a business or parts of it or prohibiting it from purchasing additional services (Knapstad, 2023).

In the future, other undertakings may submit notifications to the Commission under the DMA based on their self-assessment of the relevant thresholds. In parallel, the Commission has already opened four market investigations to assess whether Bing, Edge and Microsoft Advertising and iMessage and iPadOS (Apple) qualify as gatekeepers. In the case of Samsung, the Commission decided not to designate Gmail, Outlook.com and Samsung Internet Browser as core platform services; therefore, Samsung is not designated as a gatekeeper with respect to any core platform services.

3. DIGITAL SERVICES ACT (DSA)

Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a single market for digital services and amending Directive 2000/31/EC (Digital Services Act) applies throughout the European Union from of 17 February 2024, although some provisions on reporting obligations, independent audits, data sharing and surveillance (including fees), investigation, enforcement and monitoring applied from 16 November 2022.

The new regulation was adopted to better protect consumers against online platforms and social networks, which have several responsibilities. At the same time, these regulations encourage innovation, growth and competitiveness on the EU market, aim to achieve greater transparency, eliminate illegal online content, hate speech and disinformation (Fletcher *et. al.,* 2024).

According to the Regulation, illegal content can include "sharing images depicting child sexual abuse, illegal and non-consensual sharing of private images, online stalking, selling non-compliant or counterfeit products, selling products or providing services in violation of consumer protection legislation, unauthorized use of copyrighted material, illegal offering of accommodation services or illegal sale of live animals".

Users will be able to challenge content moderation decisions and seek redress, through a dispute mechanism or a judicial remedy, while authorities will have access to key data generated by very large platforms, including the algorithms used in recommending content or products, to assess online risks.

Article 16 of the DSA outlines this obligation based on a notification and action mechanism initiated upon notification by any person or entity.

The regulation also includes special rules for very large online platforms (VLOPs) and very large online search engines (VLOSEs) used by more than 10% of the EU's 450 million consumers. VLOP and VLOSE have an obligation to prevent misuse of their systems and may create mechanisms to react quickly and effectively to crises affecting public security or public health. In the event of a crisis, the Commission may require VLOP and VLOSE to assess whether and how their services contribute significantly to this serious threat or are likely to, identify and apply effective and proportionate risk mitigation measures to prevent, eliminate or limit such contributions and report these measures to the Commission.

According to art. 28 of the Regulation, platforms will have to redesign their systems to ensure a high level of confidentiality, security and safety of minors. For example, currently, although the Instagram and TikTok platforms have stipulated in the terms of service provision that they can only be used by people who have reached the age of 13, these provisions can be very easily circumvented, by mentioning another year of birth than the real one. According to point 71 of the DSA Preamble, an online platform can be considered accessible to minors when "its terms and conditions allow minors to use the service, when its service is directed at minors or predominantly used by minors, or when the provider is aware that some of the recipients of its service are minors, for example because it already processes the personal data of the recipients of its service that reveal their age for other purposes". For example, if the provider of the online platform knows that a minor is using its platform, it must not provide targeted advertising or use the minor's personal data for these purposes.

In the European Strategy "Better Internet for Kids" (BIK+), the European Commission stated that it aims to improve the online experience of children, creating a framework that inspires their confidence and desire to learn, play, share, to watch, connect and express. At the same time, he reaffirmed on this occasion his position to support the application of mechanisms that would allow proving the age of children. Online platform providers should not present profiling-based advertisements using the personal data of the service recipient when they are aware with reasonable certainty that the service recipient is a minor (Popescu, 2023).

In Italy, the National Authority for the Protection of Personal Data imposed a limitation on the processing carried out by TikTok regarding the data of users whose age could not be determined with certainty. The decision came because of the death of a 10-year-old girl in Palermo by asphyxiation while participating in a challenge called the "scarf game" ("blackout challenge") on the TikTok social

network. The child tied a belt around her neck with the aim of staying out of breath for as long as possible, while filming with her mobile phone.

In terms of advertising, online platforms must fulfill several obligations. First, each specific advertisement presented to each individual recipient must be flagged (by inserting the mention "Advertising" or "P" or "Product Placement"). Secondly, the natural or legal person on whose behalf the advertising communication is presented and the person who paid for the ad must be presented, when they are different, for example "This advertisement promotes products X" and was paid for by company Y. Also, art. 26 para. (3) and Recital 68 of the DSA prohibit online platform providers from targeting advertisements to users resulting from their profiling.

Regarding transparency related to recommender systems, Recital 70 of the DSA explains that online platforms should constantly ensure that users are properly informed about how recommender systems influence the way information is displayed and can influence how information is presented to them. Platforms will have to provide information on how and the criteria according to which the information is displayed. For example, if we refer to the Booking platform, the algorithm should consider user interests, customer satisfaction, price, customer reviews.

Member States are required to designate one or more competent authorities responsible for the supervision of intermediary service providers and the enforcement of the provisions of the DSA. The Commission will also charge providers of very large online platforms and search engines an annual monitoring fee.

The Commission may impose on the provider of the very large online platform or the very large online search engine fines not exceeding 6% of the total annual worldwide turnover of the previous financial year, if it finds that the provider is in breach of the provisions of the DSA, does not comply with a decision ordering provisional measures or fails to comply with a binding commitment.

4. CONCLUSIONS

The legislative package on digital markets is undoubtedly the European Union's response to the expansion of the American Big Tech giants, who have taken advantage of the naivety of users to acquire a dominant position in the world market and to obviously abuse it. Tired of investigating and imposing fines to no avail, the European Commission resorted to drafting these two regulations, the Digital Market Act and the Digital Services Act, out of a desire to curb and thwart the dark and abusive plans of the American giants.

As a result of the entry into place of these new regulations, the European Commission asked the main online platforms during some workshops for compliance reports with the European provisions.

Amazon emphasized that it does not track customers' browsing activities, nor does it sell its customers' personal data to third parties (as other gatekeepers do). Amazon has implemented prompts asking customers to share consent if they want a personalized experience in their Store and other Amazon services like Prime Video and Audible. With Amazon Ads, advertisers and publisher clients gained real-time access to extensive pricing information. In terms of displaying offers, the criteria that determine the "Recommended Offer", Amazon has specified that the product detail page treats third-party sellers and Amazon retail equally. Customers can be sure they continue to see the most relevant products and the best "Recommended Deal" Amazon has to offer.

For Facebook and Instagram, Meta proposed the pay-or-OK model, which allows users to choose whether they want to consent to their personal data being processed or whether they prefer to pay a monthly subscription fee of €10 without consent.

In Apple's case, the latest iOS 17.4 update was released on iPhones, which, when the user first uses Safari, allows users to choose one of 12 different browser options as their default browser. The user is forced to scroll down to select their preferred browser which will then become the default; selection does not automatically trigger the download of that alternative browser if it is different from Safari. In addition, Apple has completely opened the distribution of alternative applications in its ecosystem. Thus, users will have three options to download applications to their iPhone devices: through an alternative application market, which can only distribute proprietary applications or applications from third-party developers, directly through the web and through the App Store. Regarding the payment system, Apple has implemented alternative payment options, distinct from those through the App Store, where developers' direct users to complete a transaction for digital goods and services on their external web page.

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DETERMINANTS OF THE CORPORATE INCOME TAX AVOIDANCE – A BRIEF LITERATURE REVIEW

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Abstract
Tax avoidance is the subject of o large number of studies. I choose to analyse these studies by grouping them in three main categories: proxies used to measure the tax avoidance, tax avoidance determinants (this study) and tax avoidance influences on other variables. Analysing almost 80 papers, I identified a long list of factors that can influence the level of tax avoidance practiced by companies, in terms of income tax, and I grouped these factors into several categories. I proposed, first, factors related to the personal and professional profiles of the members of the company's management, after which I analysed factors related to corporate governance, but also to geographical and institutional characteristics. The list of determinants can be continued with factors related to the ownerships structure and the listing of companies on a stock market, as well as with influences of all kinds of crisis (financial, pandemic, at regional or global level). At the same time, I considered elements of a reputational nature that influence the tax avoidance practices of companies, as well as technological developments, company strategies, life cycle phase.
Keywords: *corporate income tax; tax avoidance proxies; tax avoidance determinants.*
JEL Classification: H26, M40.

1. INTRODUCTION

Corporate income tax (CIT) is important in the tax system, both in terms of its contribution to PUBLIC revenue and in terms of what it signals: the taxation of wealth created in a year by firms in a country. The corporate tax is also spectacular in the possibilities for firms to reduce their tax burden using various methods of tax optimisation/planning and even tax evasion/fraud. Sometimes the corporate tax contribution to public expenditure can be an important communication argument in companies' reporting on social responsibility (Istrate, 2023).

The orientation of some companies - especially multinationals - to pay as little tax as possible, especially in high-tax territories, is well documented. Corporation tax has been, and still is, one of the most appropriate taxes in terms of the possibilities of reducing the amounts paid, of reporting figures that are meaningless to those less initiated in sophisticated financial reporting

techniques. Otherwise, we would not be witnessing a series of international, regional and national regulations attempting to limit the proportions of profit transfers from countries where profits are made to countries/territories with limited tax claims. Let us recall the ATAD directive (Anti-Tax Avoidance Directive), which appeared in 2016 and whose full title refers explicitly to "laying down rules against tax avoidance practices that directly affect the functioning of the internal market". The Directive covers taxpayers subject to CIT in one or more Member States and contains rules which seek to limit profit shifting from one Member State to another: transactions such as intra-group loans (interest deductibility is limited), transfers of assets (tax is calculated on the market value less the tax-deductible value of the assets concerned), artificial transactions (transactions with no commercial purpose are not taken into account for tax purposes but are carried out for the purpose of reducing the tax burden), taxation of profits of foreign controlled companies according to the rules of the country if their profits have been exempted, tax treatment of hybrid items. This directive complemented the tax legislation of each Member State, which had to transpose it by the end of 2018. The Romanian tax code was amended accordingly, including rules on all the elements set out in the ATAD Directive, with national customisations where appropriate. We also recall Directive 2021/2101 of the European Parliament and of the Council on the submission by certain undertakings and branches of information on income taxes (the latter introduced in OMFP 1802/2014 and applicable in Romania from 2023).

However consistent the regulation, it cannot cover all situations arising from the practical activities of taxpayers. For example, Simser (2008) notes that the 10,000 pages of US tax rules are clear evidence that tax collection faces loopholes and tax uncertainty is unavoidable.

The definition of tax evasion (TE) is not uniform in the regulations or in the literature. We can consider that the English terms (*tax avoidance* and *tax evasion*) are somewhat more precise and have only been translated into Romanian as *tax evasion*, which is slightly simplistic. Even though Romania has a law (241/2005) to prevent and combat tax evasion, it does not provide a definition of tax evasion, but only a very long list of actions that can be considered tax evasion and are punishable by imprisonment: according to this law, by tax evasion we mean, in fact, illegal actions, which we can qualify, according to the terms in the literature, as *tax evasion* and not tax avoidance.

I next aim to identify, in the literature, the main determinants of deviant tax behaviour of tax avoiders. The structure of the study continues with a listing of the main variables we have identified in the literature as proxies for tax avoidance (section 2). In section 3, I group the influencing factors on TA proxies into several categories, after which I present conclusions and references.

2. PROXIES FOR TAX AVOIDANCE

We could find, in the literature, several variables that approximate levels of tax avoidance. Very briefly, starting from the list proposed by Hanlon and Heitzman (2010) and adding other tools found in the literature (centralized by Istrate, 2023), I list:

- effective tax rates (ETR), established as the ratio between explicitly reported corporate tax on the one hand and gross profit on the other; we can have GAAP ETR (in which the numerator is the total corporate tax expense, current and deferred), current ETR (current tax at the numerator) or cash ETR (tax actually paid, at the numerator);
- the difference between the ETR (in any of its forms) and the statutory tax rate or between the statutory rate and the actual rate;
- the difference between the accounting income and the reconstructed tax income (BTD - book tax differences - or BTG - book tax gap -), possibly with separate recognition of what comes from accounting accruals;
- gross profit x statutory rate minus current tax expense;
- the residual from the regression correlating BTD with accruals;
- tax paid to total assets ratio;
- indicators specific to the shadow economy;
- tax adjustments to be made as a result of tax audits or financial audits;
- tax sheltering variables and scores;
- individual elements of reconciliation between accounting and tax incomes;
- tax expense divided by operational cash flow;
- cash ETR volatility;
- proxies for income shifting, which take into account the difference between the tax rates in the country of the parent company and the rates in the countries where the subsidiaries are located;
- variables from reports and other documents from international bodies such as the World Bank and variation in fees paid to tax consultants;
- location of subsidiaries in tax havens, their share of total subsidiaries or of group business;
- the aggressiveness of the use of transfer pricing;
- involvement of the firm in tax litigation.

3. FACTORS INFLUENCING THE CORPORATE INCOME TAX EVASION/AVOIDANCE/AGRESIVENESS

Hanlon and Heitzman (2010) identify several correlations where tax avoidance (TA) may be involved; these include firm characteristics, ownership structure, firm control and management structure, management compensation, and specific agency theory issues. The same authors review in the literature the main reasons for entering tax avoidance: tax rates, probability of detecting the

avoidance, severity of penalties for tax evasion and professionalism of control bodies, political will to reduce evasion, risk aversion, tax awareness.

The simplest analysis of the impact on TA concerns the link between TA and the main characteristics of the firm, as they can be identified from the accounting data they provide through financial statements: size (total assets or turnover), leverage, asset structure, income and returns, location of business, number of subsidiaries, type of activity. Olhoft Rego (2003) analyses US firms, comparing multinationals with domestic firms, and finds confirmation that larger firms have higher effective tax rates (ETRs), consistent with political cost theory; also, higher gross profits seem to lead to lower ETRs and multinational business expansion leads to lower ETRs. Firm size may be accompanied by firm dominance in the market, characterised by the ability to impose price, quality level or nature of products on the market, but also by the risk of being imitated by other firms. Kubick *et al.* (2015) find a positive link between market dominance and propensity to TA, and an attempt by competitors to replicate including tax behaviour.

From the analysis of the nearly 80 articles in which I found determinants of TA (and sometimes, TE), several groups of such factors emerged:

a) the profiles of the members of the management of firms and the compensation they receive;
b) some corporate governance variables;
c) geographical, institutional and regulatory characteristics;
d) shareholder structure and the public or private profile of the company;
e) financial, medical, economic, local, regional or global crises and other significant events;
f) reputation of companies, of their management and of auditors;
g) other factors influencing the tax behaviour of companies.

3.1 Profiles of corporate executives and their compensation may influence proxies for tax avoidance

The position (power and status) of the tax officer in the firm is, according to Ege *et al.* (2021), a variable with significant influence on the way the firm practices TA: the higher this position is in the firm's hierarchy (CFO, executive vice-president, senior vice-president, senior director, tax officer, director, head of tax, assistant vice-president, division director, manager, regional manager, staff, lawyers), the higher the indicators show greater TA. Feller and Schanz (2017) estimate that the authority enjoyed by the tax officer is even one of the mandatory steps for the firm to carry out TA actions.

The confidence with which CEOs and CFOs approach the firm's business is measured by Hsieh et al. (2018) by their position as a net buyer of the firm's stock or a holder of the firm's stock for at least 50% of the period analysed; Hsieh *et al.* (2018) results show that overconfidence of CEOs and CFOs at the

same time leads to higher TA compared to other CEO/CFO behaviour combinations.

CEO behavioural traits can influence firms' tax behaviour. Araújo *et al.* (2021) find a positive link between CEO narcissism and tax avoidance. Chyz *et al.* (2019) find that CEOs' overconfidence in their own strengths and their behaviour towards increasing TA are strongly and positively correlated. Also, although managers do not necessarily have tax or accounting expertise in developing and implementing firm tax strategies for tax planning purposes, they can affect these activities through the signal they give from the top down. Na and Yan (2022) and Dyreng *et al*. (2010) find a significant influence of individual persons in the firm's executive (CEO, CFO, vice president) on the level of TA practiced by the firm, in addition to the influence generated by firm characteristics.

Li *et al.* (2022) examines the situation of managers at risk of dismissal with restrictions on employment at other similar firms: these managers may be tempted to engage in more TA; if, on the contrary, leaving one firm is not accompanied by restrictions on employment or use of data at the next firm, then these employees engage less in TA. Managers' prior experiences are not limited to the businesses they have been involved in or to their accounting/taxation training or various MBAs completed: Law and Mills (2017) show that some boards prefer managers with military experience because they are less involved in tax planning, i.e. they adopt and implement less aggressive tax strategies, and are able to provide savings on other types of costs that the firm incurs.

The personal tax behaviour of a firm's executives can influence the level of TA of that firm. Hjelström *et al.* (2020) analyse the situation of Swedish firms and observe a strong link between the tax behaviour of executives and their personal preferences regarding risk, ethics and financial incentives; also, the personal tax behaviour of the CEO and CFO is significantly related to the TA of the firms they manage.

Incentives of the firm's management or of some individuals in the management team (e.g. CEO, CFO or tax officer) may influence the level of some indicators measuring tax aggressiveness, although Chi *et al*. (2017) state that it is still very unclear why some CEOs engage more aggressively in tax planning than others. Gaertner (2014) analyses how CEO bonuses are set and finds that higher TA (as measured by GAAP ETR) is associated with setting bonuses based on the firm's reported net income, i.e., after-tax profit.

Armstrong *et al.* (2012) examine the link between tax officer compensation and cash ETR plus other indicators of tax aggressiveness, and they confirm this link, finding that risk-taking for better remuneration is directly proportional to TA. Halioui *et al.* (2016) identify a significant and negative link between overall CEO remuneration and TA, as measured by ETR.

Analyses of managerial behaviour in terms of involvement in tax planning, earnings management or other types of activities refer to their age, education, previous work experience, gender, length of tenure, etc. Na and Yan (2022) also dwell on the native language of firm heads and its impact on tax aggressiveness, finding that languages that differ in terms of marking the future may lead to different levels of TA. A distinction is made between two broad categories of languages: languages with strong future tense reference (English, French, where speakers must clearly separate the future tense verb form from the present tense form), on the one hand, and those with weak future tense reference (German, Finnish, Chinese - where it appears that speakers may omit the future tense form), on the other hand: countries or regions where languages in the first category are spoken make more use of tax avoidance than those in the second category. Moreover, CEOs of American companies but born in the first category of countries are more inclined to evade tax than those born in countries in the second category. Regarding the CFO, whose role can be determinant in designing the firm's tax strategies, Campa *et al.* (2022) analyse the extent to which a CFO co-opted by the CEO during his or her tenure influences the firm's TA under pressure from that CEO. The results reported by Campa et al. (2022) confirm that a CFO brought in by and under the influence of the CEO will pursue riskier and less public interest oriented fiscal policies.

For Desai and Dharmapala (2006), firm management compensation, including incentives of all kinds, is a significant determinant of TA activity, in the sense that large incentives lead to lower levels of tax sheltering, with different intensities depending on how corporate governance mechanisms are implemented and operate. Benefits promised by the firm to directors, but which become payable after they leave the firm, may make the directors involved more prudent, including in terms of tax aggressiveness: using a tax sheltering score, Chi *et al.* (2017) demonstrate this hypothesis on a sample of US firms.

The profiles of company directors and their impact on tax evasion are also analysed in terms of their professional training. Chen *et al*. (2021) shows that, for Chinese firms with more executives returning from studying abroad, TA tends to increase when it was below average and decrease if it was above average: the relationship is stronger for state-owned firms, but also for executives with an MBA degree with a background in accounting/auditing.

3.2 Impact of corporate governance variables on tax avoidance/evasion

Governance can influence the level of TA through 7 mechanisms (Koverman and Velte, 2019): alignment of incentives between shareholders and management, board composition, shareholder structure, capital market pressures, audit, enforcement of laws and government relations, pressure from other stakeholders. The overall quality of a firm's corporate governance can positively influence the relationship between TA and shareholder wealth growth. Jimenez-

Angueira (2018) calculates a governance score considering variables like those above: CEO-chair duality, independence of directors, their seniority and experience or their ownership of significant blocks of shares, audit committee attributes (size, independence and expertise), a shareholder protection index, presence of institutional investors. Results reported by Jimenez-Angueira (2018) show that the significant strengthening of external monitoring of US firms (by tax and financial authorities) after the scandals of the early 2000s led to lower levels of TA being calculated for firms with weaker corporate governance in the period after the introduction of those regulations. Increased public and regulatory attention has also reduced opportunities for managers to use TA instruments to ensure better short-term returns.

The composition of a company's board, as an important element of corporate governance, can have an impact on how the company approaches taxes. Halioui *et al.* (2016) show that board size is negatively associated with TA, but that CEO-chairman duality is positively correlated with TA. Richardson *et al.* (2016a) find that the presence of more than one woman on the board reduces the likelihood of engaging in tax aggressiveness, for a range of Australian firms. The presence of women on the board has significant effects on the relationship between profitability and TA: Alkurdi *et al.* (2023) find a negative relationship between profitability and ETR for a sample of Jordanian firms, but the presence of women on the board changes the sign of this relationship, demonstrating the hypothesis that women play a critical role in promoting initiatives to mitigate financial risks.

Doo and Yoon (2020), on a sample of Korean firms, find that the board structure does not discourage profit-shifting activities, unless there are accounting and finance experts on the board. CEO duality (CEO also serving as a board director) is an important feature of governance arrangements and can influence how the firm approaches taxes. Kolias and Koumanakos (2022), for a significant sample of private firms in Greece, find a negative relationship between CEO duality and TA, explaining this result by the agency theory, according to which CEO/COB power encourages managerial risk aversion and thus limits tax avoidance.

Explaining tax aggressiveness may also come from the heterogeneity of firm management: Wahab *et al.* (2018) find, overall, that management heterogeneity significantly influences BTD, but that the relationships are more visible in the case of age and tenure (negative relationship with BTD), education level positively influences tax aggressiveness, and gender has little influence.

A firm's internal organisation can have an important effect on how it implements AT strategies: Gallemore and Labro (2015) find evidence that a high level of internal control quality is associated with higher AT, with an even stronger correlation for firms that need significant coordination due to geographical dispersion of business or due to greater uncertainty.

The financial auditor's role is to check how the financial statements comply with the accounting and financial reporting rules. In doing so, the financial auditor may identify some nonconformities, including in tax matters. Chan *et al.* (2016) shows that a high-quality audit can help limit corporate tax noncompliance, regardless of whether the auditor also provides tax services to the client, especially as accounting is disconnected from taxation.

The way in which corporate governance mechanisms are applied can influence TA. Chang *et al.* (2020) finds a non-linear relationship between internal control weaknesses and TA: good internal control may lead to more avoidance, as taxes represent a significant cost to the firm; on the other hand, weak internal control may allow managers to extract rents by adopting aggressive tax positions. The quality of the shareholder is also sometimes seen as a factor explaining the level of tax avoidance.

Armstrong *et al.* (2015) find that board sophistication positively affects TA, while board member independence decreases it.

3.3 Geographical, institutional and regulatory features in explaining tax avoidance

The geographical location of firms and/or their activities may explain, through different regulatory contexts and different developments in corporate tax rules, different trends in the evolution of some indicators measuring TA. Thomsen and Watrin (2018) find strikingly different developments for US firms compared to some European countries. The decrease in ETR in almost all OECD countries hides, in fact, despite the similarities between the US and two large European countries, i.e. France and Germany, slightly contrasting evolutions of the difference between the statutory tax rate (STR) and ETR: higher for the US and increasingly lower, for some EU countries. Benkraiem *et al.* (2021) find in the literature the idea that the institutional environment in each country is one of the most important explanatory factors of the level of tax compliance. The geographical location of the firm's operational headquarters and the effect of local culture on the intensity with which TA strategies are used is analysed by Hasan *et al.* (2017a); these authors use the variable social capital, i.e. the set of values and beliefs that help cooperation, with civic norms and social networks as constituents.

The literature Hasan *et al.* (2017a) mobilize helps them construct a proxy for social capital that considers participation in elections, participation in censuses and questionnaires asked by statistical authorities, total number of non-profit organizations, number of social organizations, by type (religious, civic, sports, employers, business, political, professional, unions, for physical culture, bowling clubs, golf clubs). Hasan *et al.* (2017a) find that "firms headquartered in U.S. counties with higher levels of social capital, as captured by strong civic norms and dense social networks, have higher tax rates and lower discretionary

permanent book-tax differences". The specificities of individual countries or groups of countries may explain the way firms approach AT. Pulungan *et al.* (2023) identify divergent results in the literature reviewed on economic and other factors affecting AT, indicating that each region may have distinct characteristics from this perspective. Kimea *et al.* (2023) propose an analysis of how socio-cultural and institutional factors (management quality, regulatory quality, audit quality, culture and ethics) influence AT practices and find evidence demonstrating such influence, for 8 sub-Saharan countries. For South Asia, Pulungan *et al.* (2023) identify firm size, profitability and degree of economic freedom as determinants of ETR.

The way taxpayers perceive the spending of public money by authorities can influence the propensity to evade taxes. Apostol and Pop (2019) conclude, for the situation of Romania - as an emerging country - that corruption, state capture and suffocating bureaucracy generate resistance to the dissemination of neoliberal logic, but do not contribute to raising the ethical level of the approach to dealing with taxes.

Some studies on TA also consider regulatory developments that are, of course, aimed at decrease avoidance, but which act on some of its determinants. Barrios *et al.* (2020) suggest that a change in the rules towards a common tax base in the EU could lead to a decrease in tax compliance costs and thus a decrease in TA. The rules that can be analysed in relation to tax avoidance are not limited to tax rules; we can ask, for example, what effects radical changes in financial reporting rules have on the indicators that measure TA. Braga (2017), for example, finds that the mandatory application of IFRS has led to an increase in the extent to which firms engage in TA, both using techniques involving accruals and through the use of other types of strategies.

The presence in tax havens may be a sign that the group has tax avoidance tendencies. Richardson and Taylor (2015) show that a group's degree of multi-nationality, aggressive transfer pricing, low capitalisation and high proportion of intangible assets are variables positively associated with presence in tax havens. Platikanova (2017) uses this indicator in determining the influence of tax avoidance on debt maturity.

In an approach that considers macroeconomic variables, TA can be approximated by the shadow economy ratio, as proposed in studies or reports by international institutions. Benkraiem *et al.* (2021) find a significant influence of ethical behaviour on the reduction of tax avoidance, an influence greater than the strength of auditing standards. Kim *et al.* (2022) considers a macroeconomic variable - analysts' estimates of GDP growth - and find that firms' investment in tax planning increases as analysts optimistically forecast economic growth.

The links that the members of a company's board have with outsiders and their influence on the company's tax behaviour can be analysed on the premise that tax avoidance is also linked to the social structure in which it occurs. Brown

and Drake (2014) analyse such a situation and find that TA is associated with close links between the benchmark firm and other low tax paying firms, confirming a hypothesis that networks of individuals/partners (including using the same auditor) can contribute to lower taxes paid.

3.4 Ownership structure and the public/private position of companies can influence tax avoidance

Most studies analyse the link between tax avoidance - measured by various proxies - and several other micro or macroeconomic variables, considering data from listed firms. These firms are more visible and more exposed and are the main source of data for a large part of the financial and accounting literature. However, avoidance also occurs in the case of private/unlisted firms, regardless of their size. Sanchez-Ballesta and Yague (2021) identify a behaviour of SMEs in the sense of their involvement in earnings management in the sense of reducing their earnings with the reduction of taxable earnings. However, Sanchez-Ballesta and Yague (2021) find that SMEs are less tax aggressive, even if they engage in upward earnings management, meaning that incentives related to reporting higher earnings outweigh the interest in engaging in tax avoidance.

Even if it is more related to corporate governance, we can separate and present in this sub-section something about the influence of the nature and structure of shareholding on TA. For example, listed family firms (owned or managed by members of the same family) behave differently from other listed firms: Lee and Bose (2021) establish that family firms engage less in TA, but that an increase in corporate opacity makes these firms increasingly engage in tax avoidance practices. Chen *et al.* (2010) compares the level of tax aggressiveness of family-owned firms with those that do not fit the family model; they find that for firms that fit the family model, a lower level of tax aggressiveness is identified, explained mainly by the nontax costs that tax aggressiveness would entail. Also, Chen *et al.* (2010) find evidence that family firms use less tax sheltering. For the special context of China, Cao *et al.* (2023) find lower TA involvement for family firms whose boards are chaired by a family member compared to other family firms. In contrast, Koverman and Wendt (2019), on a sample of unlisted German firms, conclude that family firms practice TA more than non-family firms, that TA increases with increasing percentage of family ownership, and that TA is generally a function of the number of shareholders/partners. Similarly, Gaaya *et al.* (2017) find a positive correlation between family ownership and tax avoidance, on the example of listed Tunisian firms, but that this correlation decreases, over time, and is attenuated by audit quality.

Li *et al.* (2021) finds that a decrease in attention paid to firms by institutional investors immediately leads to an increase in avoidance (TA); Hasan *et al.* (2022) identify a significant TA-decreasing effect of having foreign

institutional shareholders and that this relationship is consistent with institutional distance theory.

Richardson *et al.* (2016) analyse the situation of Chinese listed firms and highlight a non-linear relationship between ownership concentration and tax avoidance: at low levels of ownership concentration, ownership is positively associated with TA, while after the effective control threshold is exceeded, the association is negative. Khan *et al.* (2017) finds a positive and significant relationship between institutional ownership and corporate income tax avoidance.

Differences between the voting and financial rights of managers of some firms may have effects on the level of tax planning: McGuire *et al.* (2014) find that such a difference is associated with higher ETRs, suggesting that managers in this situation engage much less in TA.

Ying *et al.* (2017), find that the existence of the state as a shareholder and state control have a positive influence on fiscal aggressiveness, while the intervention of institutional shareholders leads to lower fiscal aggressiveness. Government ownership of firms can lead to a dual role for the government as tax collector and recipient of profit distributions from those firms. In the case of some Chinese firms, Tang *et al.* (2017) finds that sometimes firms controlled in this way also engage in TA, which can lead to the claim that the public authorities controlling them are both tax collectors and tax avoiders.

3.5 Crises and similar situations

Important moments in raising awareness of the implications of TA and in tracking the actors involved in these practices are economic, financial, health, etc. crises (Anesa *et al.,* 2019) during which and after which governments need a lot of money to cope with financial difficulties and to help citizens and firms overcome such difficulties. TA is therefore also analysed in terms of exceptional events such as pandemics. Even if they do not consider covid-19, Zhu *et al.* (2023) have enough data to identify the effects of some pandemics/epidemics (SARS, H1N1, MERS, Ebola, Zika) on firms' tax behaviour; the results reported by Zhu *et al.* (2023) show us that firms engage more strongly in TA practices during pandemic periods. Ariff *et al.* (2023) introduces the covid-19 pandemic into the analysis, showing that its sudden onset has left firms in financial distress and fewer opportunities to engage in TA strategies, as financial distress itself - independent of the pandemic - is negatively correlated with TA.

3.6 Tax avoidance and reputation

Tax avoidance (TA) can affect a firm's reputation and the question arises to what extent this can impact on firms' CSR policies. A review of the literature on this issue is provided by Krieg and Li (2021) who examine three aspects of the relationship between CSR and TA: whether TA is a CSR issue, whether

stakeholders view TA as socially irresponsible or whether fear of the reputational consequences of TA leads to changes in firms' tax behaviour. In a survey-based research, Graham *et al.* (2014) confirm that firm executives consider reputation as very important in tax strategy decisions, including the possibility of negative media stories. At the same time, Graham *et al.* (2014) identifies significant concerns among interviewees about the effects that tax strategies may have on some financial indicators (earnings per share).

Reputational risks to the firm arising from the discovery of its involvement in financial arrangements revealed by press investigations (Panama papers, Bahamas papers, etc.) may influence the behaviour of these firms. Schmal *et al.* (2021), find that such firms report higher corporate tax expenses (higher ETR) after such an event, which would suggest that managers act to diminish the public perception of them as aggressive tax evaders: however, despite increases is GAAP ETR, cash ETR remaining at similar levels. Coverage by various media outlets of events concerning listed companies is in the attention of the management of those companies, but also in the attention of stakeholders. Involvement in tax avoidance resulting in ETRs lower than the statutory tax rate may generate negative press articles. S. Chen *et al*. (2019) identify an increase in articles with a negative tone against firms whose ETR is lower than STR, but that the effects of these articles are not reflected in an eventual reduction in ETR by the firms involved. Lee *et al.* (2021) finds a decrease in the reputation of managers and the firm in the eyes of employees because of firm involvement in evasion reflected in mass-media. In contrast, Gallemore *et al.* (2014) find no evidence showing significant effects of tax sheltering on the reputation of the firm or its managers, except for a temporary decrease in the share price around the time of the revelation of the involvement, which is reversed in less than 30 days.

3.7 Other determinants of tax avoidance

Technological developments in accounting, financial, non-financial and tax reporting make it easier for various stakeholders to access information about companies. The implementation of XBRL and similar tools – started in the US but also taken up in the EU – can contribute to easier access to data to identify tax avoidance, even though it increases the cost of reporting for companies. J. Z. Chen (2021) finds confirmation that XBRL reporting in the US has lowered tax authorities' control costs and led to a significant decrease in tax evasion.

On the other hand, moving some businesses online has also had effects on TA: Argiles-Bosch *et al.* (2020) find convincing empirical evidence that e-commerce leads to increased tax avoidance in Europe. In analysing TA and its effects, whistle-blower signals can also be considered. Wilde (2017) finds that the presence of such whistle-blowers has a significant deterrent effect on tax aggressiveness and financial misreporting. Delgado *et al.* (2023) find a non-

linear relationship between TA and earnings management; moreover, Delgado *et al.* (2023) conclude that earnings management does not lead to increased TA, but that firms in the five European countries analysed do not practice much TA, are less tax aggressive when they have high debt, and that TA seems to be higher when the proportion of tangible fixed assets increases. Also, TA seems to increase with increasing profits.

In identifying levels of tax avoidance, the field of activity of the various firms must also be taken into account; Wang *et al.* (2022) identify lower levels of TA for firms in the area of products harmful to health (e.g. alcohol, tobacco, gambling and firearms), explaining this situation by the public exposure that these firms have and, therefore, the political costs they have to bear as a result.

Amiram *et al.* (2019) study the influence of the manner of corporate tax recognition incurred by the firm on how taxes are calculated by shareholders who received dividends from the firm. Thus, under the imputations system, firms pay corporate income tax, but this becomes a kind of tax credit that reduces the dividend tax borne by the shareholders who received those dividends. The theoretical aim is to avoid double taxation. However, this system can create difficulties, which is why many countries have abandoned it and switched to a non-imputation system, i.e. taxing company profits with either dividend tax relief or a significantly lower dividend tax rate. Under these circumstances, the list of determinants of tax avoidance and its evolution is supplemented by the company's dividend policy, which is closely linked to dividend taxation. The elimination of the imputation system has led, according to the results of Amiram *et al.* (2019), to an increase in corporate tax avoidance.

The market reaction to the firm's actions can also be analysed in relation to TA. Y. Chen *et al.* (2019) find that for firms with high stock liquidity, engaging in extreme tax planning is less likely. Firm policies regarding financial risks and speculative profit-taking can influence tax behaviour. Donohoe (2015) identifies a significant reduction in cash ETR over a three-year period for firms using derivatives. Oktavia *et al.* (2020) finds a positive and significant link between the use of derivatives and the level of tax avoidance for listed firms in the ASEAN region.

Considering all observations with available data (i.e. leaving loss-making firms in the sample), on average, firms are rather tax disadvantaged, in the sense that the TA indicator decreases significantly, which is different from the results obtained by considering only profit-making firms. The type of investment strategy followed by the firm is measured by Hasan *et al.* (2022) by the firm's ability to sell fixed assets (asset redeploy ability); finding that firms that can sell their fixed assets faster are less subject to financial constraints and liquidity crises, Hasan *et al.* (2021) find a significant negative correlation between TA and the ability to sell fixed assets.

Khurana *et al.* (2018) find support for the hypothesis that TA is more than a simple transfer of resources from the state to shareholders: TA can only create benefits for shareholders if there is significant managerial skill and/or good governance. Klassen *et al.* (2016) analyse the influence on tax aggressiveness that the way the firm prepares its tax returns might have: if this is done by an employee of the firm or by an external consultant who is not an auditor, it seems that tax aggressiveness becomes more pronounced; conversely, the preparation of returns by a consultant who also does auditing (especially if it belongs to the Big4) is associated with less tax aggressiveness. Tax services provided by auditors are also analysed by Hogan and Noga (2015), who find that, in the long run, lower levels of fees paid to audit firms are associated with higher amounts paid as corporate tax. Atwood *et al.* (2012) find that TA is greater, on average, when the distance between accounting and taxation is greater, when the overall profit is taxed and when tax enforcement is perceived as weak.

The language used in reporting by firms with financial difficulties may also be relevant from the perspective of companies' involvement in TA. Law and Mills (2015) identifies several negative words in the annual reports of firms with difficulties and finds that they report lower ETRs, they use tax havens more to carry out their activities and are more exposed to the restatement generated by tax controls. Product and business life cycle phases can influence TA: Hasan *et al.* (2017b) identifies a positive and significant association between TA and the introductory and declining phases of the life cycle, while for growth and maturation phases the relationship is negative.

4. CONCLUSIONS

The relevant literature on corporate tax avoidance is very extensive and we can analyse it by grouping studies into several large categories: identifying proxies for tax avoidance measurement, highlighting the determinants of tax avoidance and, finally, influences of tax avoidance on financial or other variables. Previous lists a list of proxies for TA, explaining their content, the reasons why some authors use them and the context of their use. We found, thus, indicators of the most diverse, which try to characterize the increasingly sophisticated tax behaviour of taxpayers interested in paying as little tax as possible. An idea that can characterize this context very well is that tax montages involve hiring the company in numerous transactions proposed by very smart people that absent tax considerations. A summary list of factors influencing the level of TA, directly or indirectly related to the management of the firms, may include:

1) factors relating to the profiles of the members of management: power in the firm of the tax officer, authority of the tax officer, level of confidence of the CEO and CFO in approaching business, narcissism of the CEO or CFO, tax and financial competencies of the CEO, risk of being fired or likelihood of otherwise

leaving the firm (including benefits promised to management members after leaving the firm), military experience of the CEO, personal tax behaviour of senior management, incentives received by senior management as a whole or by the tax officer, age, gender, length of tenure of senior management, mother tongue of CEO, timing of co-optation of a CFO, before or after the CEO takes office, initial professional training of CEO (studies pursued, prestige of university, studies at home or abroad);

2) governance factors: board size, CEO duality, independence of board members, their seniority and experience, presence of women on the board, expertise of board members, shareholder structure, quality of financial audit, financial market pressure from other stakeholders, share ownership by board members, attributes of the audit committee, presence of institutional investors, monitoring by external bodies (stock exchange, tax authorities, financial authorities), age of board members and length of their mandates, quality of internal control;

3) geographical, institutional and regulatory factors: geographical location of the operational headquarters, geographical dispersion of business (including presence in tax havens), national or regional institutional environment, cultural and educational issues, regulatory quality, enforcement of law, degree of economic freedom, corruption, taxpayers' perception of how public money is spent, evolution of tax, financial reporting, governance and audit regulations, at national, regional and global level, share of informal economy, degree of economic growth achieved or expected, mimetic isomorphism effect;

4) shareholder structure and listing on the stock exchange: size of the company, family nature of the company, number of shareholders/associates, presence of domestic or foreign institutional shareholders, presence of the state as sole or majority shareholder;

5) crises: financial, medical, global economic crises and the authorities' response to their effects;

6) reputational factors: CSR policies, likelihood of occurrence or actual occurrence of negative signals in the press, appearance of the company or its managers on lists of alleged tax evaders published following press investigations, calculation of (much) lower ETRs than STRs;

7) other factors: technological developments in reporting and control, e-commerce, use of cryptocurrencies, implementation of online reporting obligations, existence and signals sent by whistle-blowers, identification of earnings management practices, scope of business, weighting of certain assets, how dividends are taxed and the firm's dividend policy, liquidity of shares, use of financial instruments, existence of financial difficulties of the firm (equity decreases, reporting of losses, high leverage), strategies of the firm with regard to investments, outsourcing of some fiscal activities, language used in public reporting, phases in the life cycle of the products/firm.

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QUALITATIVE ANALYSIS OF THE RELATIONSHIP BETWEEN MATHEMATICAL THINKING AND COMPUTATIONAL THINKING FROM THE PERSPECTIVE OF SOFTWARE ENGINEERING LECTURERS AND STUDENTS

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Abstract
In education, computational thinking—which is characterized as a style of thinking applicable to various professions needing problem-solving abilities—has grown in popularity. Future specialists must be prepared for the sophisticated thinking skills required to solve social and business challenges, necessitating a combination of mathematical thinking and computational thinking. Since the field of computer science was derived from mathematics, the connection between these two fields is obvious. Moreover, there is a correlation between ability in specific mathematical and computational fields; the question is which precise fields are correlated?
To derive a more precise hypothesis about the relationship among abilities in specific mathematical and computational fields, we adopted a novel approach – examining the relationship among local metalanguages of various fields in mathematics and computer science. The hypothesis of this research posits that if any mathematical and computational fields have similar metalanguages, then a correlation exists between ability in these fields. This information can aid in formulating content that is less comprehensible to students into a more accessible format.
In the first research stage, data mining techniques were employed. As a result, we identified clusters of similar fields in mathematics and computer science, based on similarity between metalanguages. Upon formulating the hypothesis, we verify it using both quantitative and qualitative research involving students' participation. This paper presents the results of qualitative content analysis of interviews with software engineering students and lecturers.
Keywords: *mathematical thinking; computational thinking; undergraduate students; education skills; metalanguage.*
JEL Classification: C6, A22.

1. INTRODUCTION

Computers and programming have revolutionized the world and have promoted technology literacy as a crucial skill to achieve academic and career success in the digital 21st century (Shute, Sun and Asbell-Clarke, 2017).

Consequently, computational thinking (CT), which can be defined as a way of thinking that can be applied to various fields requiring problem-solving skills, has become popular in education.

There is a need to prepare students, future specialists, for a complex thinking competence necessary for solving business and societal problems, for which a combination of mathematical thinking (MT) and computational thinking (CT) is required.

A key challenge is determining how to test thinking. We propose considering the linguistic dimension, acknowledging that thought occurs within a language framework (De Saussure, 1916; Heidegger, 1927). According to Noam Chomsky, "the father of modern linguistics," there is a strong relationship between language and thinking (Chomsky, 2006).

Given that mathematics and computer science are governed by explicit languages, and individuals employ metalanguage in their thought processes, we can explore the interconnections between various metalanguages to assess the nature of thinking. According to Alfred Tarski, metalanguage is the language in which linguistic forms, the meaning of expressions and sentences, the use of language, as well as the admissibility of formations, and the truth of statements are discussed (Tarski, 1944; Gruber, 2016). In other words, a metalanguage is a language used to describe another language. It consists of terms, specific syntax construction of sentences, a specific order of words in any sentence.

To receive a more explicit hypothesis regarding the relationship among abilities in specific mathematical and computational fields, a new approach was applied – comparing the metalanguages of different fields in Mathematics and Computer Science separately. In this Data mining stage (Cheng, 2017; Hand, 2007), we compared many text files from different fields in mathematics and computer science.

The following fields in mathematics were investigated: linear algebra, abstract algebra, combinatorics and probability, mathematical analysis, set theory, and logic. In computer science, the fields that were investigated include functional programming, imperative programming, object-oriented programming, data structures and algorithms, automata and formal languages, and operating systems. These are the basic fields that are included in most learning programs for students of computer science engineering.

The steps applied were:

- Using the FastText model for text classification and converting to vectors.
- Calculating the distance between vectors (Cohen *et al.,* 2009; Van Dongen and Enright, 2012).
- Applying clustering algorithms (Broder *et al.,*1997).

As a result, groups of fields in mathematics and computer science with closed metalanguages were received.

This paper presents the results of a qualitative content analysis conducted to verify the hypothesis that fields with closed metalanguages must provide the same understanding of their content.

2. METHODS

The primary aim of the interviews was to evaluate the central hypothesis of this research which suggests that students are likely to achieve the similar levels of success across various computer science and mathematical disciplines that have closed metalanguages. Given that individuals often gravitate towards areas where they experience success, the interviews also seek to determine whether there is an interest in fields with closed metalanguages.

Another objective was to gather insights on individuals' perspectives concerning the relationship between mathematical and computational thinking, as well as the potential for enhancing these cognitive processes to achieve greater success in related fields.

2.1 Participants profile

The research participants were 10 students studying software engineering at a college of engineering. These students were chosen in their final academic year of studies, so they had already studied the courses taken as representative fields in mathematics and computer science. They also bring a varied background level in mathematics and computer science from school education.

Additionally, the research includes a contingent of 10 lecturers from the college of engineering who instruct courses in both mathematics and computer science fields. These lecturers also have IT applied experience.

Participants received comprehensive information about the research's purpose, and they were informed that their participation was voluntary and that their anonymity would be maintained. Additionally, the research was conducted with the approval of the college ethics committee.

2.2 Interview Guide

I designed the interview questions to address all the research questions and gather people's opinions regarding the relationship between the two types of thinking. Before distributing an interview guide, it underwent expert validation. The guide, initially designed as semi-structured, underwent adjustments during the expert validation phase and interviews. These modifications were prompted by the interviewees' responses, even though most of the questions retained their original structured format.

The interview method was chosen for this research because it allows for an in-depth exploration of the perspectives and experiences of participants. Specifically, interviews provide rich qualitative data that can capture the complex and subjective aspects of how individuals perceive and relate to these

forms of thinking. This method is particularly effective in educational research where the goal is to understand not just the outcomes but also the processes and cognitive frameworks that underpin learning and problem-solving in fields like mathematics and computer science.

Interviews enable researchers to probe deeper into the thought processes of students and lecturers, allowing for a comprehensive understanding of how mathematical and computational thinking are interrelated and how they influence each other in educational settings. By engaging participants directly, the research can uncover insights that might not be evident through quantitative methods alone, such as standardized tests or surveys. Additionally, the use of interviews supports the exploration of hypotheses related to the use of metalanguages in these disciplines, as participants can articulate their experiences and reasoning in a way that reveals underlying cognitive processes.

References to the benefits and applications of qualitative interviews in educational research can be found in works by O'Connor and Gibson (2003), who discuss the value of qualitative data in providing context and depth to research findings, and Mayring (2004), who outlines the systematic approach to qualitative content analysis that ensures the reliability and validity of the insights gained from interviews.

The interview guide is outlined in Table 1.

Table 1. The interview questions

For lecturers only	Gender
	Educational Background
	Teaching experience
	IT applied experience
For students only	Gender
	Level and quality of prior mathematical knowledge at school
	Level and quality of prior computer science knowledge at school
	At what age have you been exposed in programming?
	Assess your interest in mathematics and computer science before beginning your college studies, and re-evaluate it as you approach the end of your studies in college
From the following list of courses, which ones did you include in your specialization? If you must divide them into exactly two categories, which courses would you place in each of the two categories? Are there any courses that seem “similar” to you? Please explicitly state why you consider them to be similar. The list is: linear algebra, calculus 1, combinatorics and probability, logic, discrete mathematics 1, abstract algebra, introduction to system programming, data structures and algorithms, java programming, automata and computation theory, operation systems,	

programming Languages.
If you can divide all the courses from the list into categories of "similar courses" (not necessarily only two categories), is the division different from the previous question? By what criteria did you divide? Could it be related to their metalanguages?
Suppose there were two courses (not necessarily from the given list), you are interested in while studying these courses. What do you think about the differences and similarities of these courses?
How would you explain to someone mathematical thinking, what is specific to this type of thinking? Computational thinking?
What do you think are the unique properties of mathematical thinking and computational thinking that differentiate them/that make them similar?
Would you rather have a description of the task to be performed - as a list of requirements or in pseudo code? What is the reason?
Would you rather have the proof of a theorem in mathematics - as a formal proof or a textual explanation? What is the reason?
How does the development of mathematical thinking help develop computational thinking? How does the development of computational thinking help develop mathematical thinking? What age is appropriate to begin teaching these two types of thinking?
Does our college's software engineering curriculum follow the proper sequence for the subjects of computer science and mathematics? If not, what can be improved to help students get the tools required to develop mathematical and computer science thinking?

2.3 Summary of the Content Analysis

The primary steps involved in content analysis draw inspiration from known sources, including works by Berelson (1952), O'Connor and Gibson (2003), Mayring (2004), Zhang and Wildemuth (2009) and LibGuides N.C.U. (2022).

Here are the main steps involved in conducting qualitative content analysis:

1. define the units and categories of coding.
2. develop a coding scheme.
3. code the content.
4. analyse the results.

In the upcoming section, the results of a content analysis will be found. This analysis led to the identification of various categories and themes. Additionally, the connections between these selected categories, relevant quotes, themes, and their meaning will be presented.

3. RESULTS

After conducting the content analysis, codes were generated. Afterward, seven major categories were associated with these codes:

1. Socio-demographics
2. Similarities and differences between studied courses
3. The properties and definition of computational thinking
4. The properties and definition of mathematical thinking
5. Computational thinking skills
6. Mathematical thinking skills
7. The relationship between two types of thinking

After analyzing the interview content, the following themes emerged:

- Students and lecturers categorize courses for different reasons, with students emphasizing practicality.
- Both students and lecturers divide courses into groups close to clustering division based on metalanguages similarity, but they do not think this is a reason for their division.
- The most important components of computational thinking are engineering thinking and algorithmic thinking for finding solutions. Mathematical thinking requires precision and is more about formulating problems than solving them.
- Computational thinking ability cannot exist without mathematical thinking ability, but it is possible that due to excessive interest in computer science courses, interest in mathematics decreases, leading to academic failures.
- Children should be introduced to programming from a young age. For students who have been exposed to it early on, their interest and success tend to increase throughout their studies.

The following table (Table 2) presents categories, themes, selected quotes and their relations.

Table 2. Themes and their relations to categories and selected quotes

Theme 1: Students and lecturers categorize courses for different reasons, with students emphasizing practicality.
Relation to categories:
Socio-demographics. Similarities and differences between studied courses.
Selected quotes:
Students: “I will divide the courses according to what is useful for work and less useful for work.” “Courses that are more theoretical and I didn’t get to meet them at work.” “I combine the Logic course with computer science courses because it develops the type of thinking I require for my work.” **Lecturers:** “The third group includes courses that can be taught both mathematically and in the

computer science style. For instance, a logic course." "These are fewer engineering courses, more mathematical" "All the courses in this group are actually from the field of discrete mathematics"
Theme 2: Both students and lecturers divide courses into groups close to clustering division based on metalanguages similarity, but they don't think this is a reason for division,
Relation to categories:
Similarities and differences between studied courses
Selected quotes:
"I don't think the courses I was interested in have a similar structure of their text" "Courses I put in this group differ in the structure of the proofs."
Theme 3: The most important components of computational thinking are engineering thinking and algorithmic thinking for finding solutions. Mathematical thinking requires precision and is more about formulating problems than their solving.
Relation to categories:
The properties and definition of computational thinking The properties and definition of mathematical thinking
Selected quotes:
Students: "Computational thinking is the ability to solve problems by, sometimes, using mathematical tools." "Mathematical thinking involves the ability to translate a problem from one's mind into formal, precise form." **Lecturers:** "Mathematicians formulate problems" "Computational thinking is the solution of precisely formulated problems. And this is an engineering approach." **"**Mathematical thinking is characterized by a set of well-defined rules and definitions." "Computational thinking involves analytical calculations and the development of algorithms. It is also akin to engineering thinking."
Theme 4: Computational thinking ability cannot exist without mathematical thinking ability, but it is possible that due to excessive interest in computer science courses, interest in mathematics decreases, leading to academic failures.
Relation to categories:
Computational thinking skills. Mathematical thinking skills. The relationship between two types of thinking.
Selected quotes:
Students: "I'm fine with math; I just didn't have time to invest in it during my degree." "I feel that a solid mathematical foundation significantly has helped me to succeed in

computer science courses” “Because I was deeply immersed in computer science, I ended up neglecting math.” **Lecturers:** “Based on my more than 20 years of experience as a lecturer, I’ve observed that students who excel in computer science tend to have mathematical thinking ability.” “Computer science field is derived from mathematics, and it’s inconceivable that successful computer science students lack mathematical thinking.”
Theme 5: Children should be introduced to programming from a young age. For students who have been exposed to it early on, their interest and success tend to increase throughout their studies.
Relation to categories:
Socio-demographics. Computational thinking skills.
Selected quotes:
Students: “I was introduced to programming at age 7, and my interest grew during my studies.” “I was introduced to programming during my school years. In college, I was able to tackle complex subjects that had previously sparked questions in my mind.” **Lecturers:** “Computational thinking should be cultivated from an early age, beginning in school. This approach shaped my educational journey, and by the time I pursued my degree, I had a clear understanding of my academic interests.” “My son, who is seven years old, is enrolled in enrichment classes focused on computational thinking at school. I observe that these classes are contributing positively to his development.”

4. DISCUSSION

In this section, the insights discovered from the themes, their meaning, and the conclusions will be presented. Several insights can be drawn from the content analysis presented above.

First, students and lecturers divide courses into groups for different reasons, with students emphasizing practicality. Students and lecturers received a list of courses in the field of computer science and in the field of mathematics. They were asked to divide these courses into groups. When the request was to divide into two groups, all lecturers referred to courses by content (selected quotes of lecturers in Theme 1, Table2), while students categorized courses in mathematical field as useful or non-useful (selected quotes of students in Theme 1, Table2). When the request was to be divided into more groups, both lecturers and students split them into three groups, following a similar approach but with different explanations. This observation highlights that since experienced lecturers who teach courses in both fields can naturally discern the content of

various courses based on their subject matter, software engineering students highly tend to prioritize computer science-related courses, considering mathematical courses only as auxiliary tools for developing skills in computer science field.

Second, both students and lecturers categorize courses close to clustering division based on metalanguages similarity, but they do not think this is a reason for division. This is relatively logical because a human being is incapable of comparing metalanguages within their mind. Instead, technological tools, such as those demonstrated in this article or any neural network, are necessary for comparison. The aim was to explore if people can recognize similarities between the courses when it is known that they have similar metalanguages.

Third, the most important components of computational thinking are engineering thinking and algorithmic thinking for finding solutions. Mathematical thinking requires precision and is more about formulating problems than solving them.

The conclusion reached is supported by literature (Kaufmann and Stenseth, 2020; Rambally, 2016; Wing, 2006). To discuss the relationship between computational thinking and mathematical thinking, it is crucial to comprehend the distinct characteristics of each. It is noteworthy that distinguishing between computational and mathematical thinking was challenging for interview participants due to many shared properties.

Computational thinking ability cannot exist without mathematical thinking ability, but it is possible that due to excessive interest in computer science courses, interest in and dealing with mathematics decreases, leading to academic failures.

Both lecturers and students agree that a mathematical foundation is essential for success in computer science courses. However, some students excel in computer science courses while struggling with mathematics. According to student responses, they do not perceive the importance of delving deeper into mathematical courses, which may contribute to their difficulties. The issue may stem not from a lack of ability but rather from inadequate investment.

Children should be introduced to programming from a young age. For students who have been exposed to it early on, their interest and success tend to increase throughout their studies.

Students who were introduced to computer science at a young age reported that their interest in the field grew even more during their degree. While they concentrated on subjects they could not study earlier, the foundation of interest had already been established in their minds. According to their professional experience, lecturers also believe that early exposure to computer science is beneficial for students.

5. CONCLUSION

One of the interview conclusions is that students highly tend to prioritize computer science courses over mathematical courses. Additionally, the data gathered through the interviews suggest that a mathematical foundation is crucial for excelling in computer science courses. Therefore, it is important to foster an interest in mathematics among students. The key challenge lies in encouraging them to view mathematics not merely as a tool for computational thinking but as a subject with its own intrinsic value. One possibility is to rephrase mathematical course contents as a computer science course with a metalanguage accessible to students. For instance, if a student is familiar with the metalanguage of algorithms field but not combinatorics field, we can formulate the combinatorics course contents by an algorithms course metalanguage form. Today, there are AI tools that allow formulation in any style.

Our ongoing research determined if an experiment to formulating by different metalanguage will improve student succeeding in areas where they are less proficient.

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PUBLIC HOUSING IN ISRAEL: ADVANTAGES CHALLENGES AND LIMITATIONS

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Abstract
"Public housing" provides decent and safe rental housing for eligible low-income families, older people, and persons with disabilities. Public housing is a central component of Israel's protective net for the weak in society. It seeks to protect vulnerable populations, allowing affordable housing for a public that cannot do so in the free market. This review paper aims to portray and evaluate public housing in Israel. It depicts the objectives, background, trends, challenges, problems, and prospects for the future. The right to housing is a basic right in Israel. Therefore, the state has a limited supply of apartments rented through government companies at a subsidized price to residents who meet the eligibility criteria. Israeli law granted tenants purchase rights after a period of 5 years, thereby preserving the right of public housing residents to live with dignity and shelter. It enables an escape from the cycle of poverty and a better future. It is a means of reducing gaps and providing a social safety net for disadvantaged populations.
Keywords: *public housing; Israel; supply and demand; eligibility; shortage.* **JEL Classification:** M0.

1. INTRODUCTION

The right to housing is primary in Israeli society. Public housing is one of the oldest policy tools for increasing the supply of affordable housing. Hence, public housing is a central component of Israel's protective net for the weak in society. The state has a supply of apartments rented at a subsidized price to residents who meet the eligibility conditions. It seeks to protect vulnerable populations, allowing affordable housing for a populace that cannot do so in the free market. Criteria of income, family size, age, and disability determine eligibility for public housing. In addition, new immigrants have the right to public housing for 10-15 years after immigrating to Israel (Hananel, 2019; Zamir, Ezra and Kahalyi, 2019). This review paper evaluates public housing in Israel to illustrate the background, challenges, and prospects for the future. It depicts public housing objectives, history, trends, problems, and possible solutions. The paper aims to portray public

housing in Israel to improve comprehension, illustrate damaging causes, and introduce potential resolutions.

The eligibility period and criteria for public housing relate to before and after receiving the unit. Before receipt of the apartment, applicants must meet rigorous standards, somewhat because of the small supply. Potential occupants must register and have their eligibility examined by officials from the Ministry of Construction and Housing, additional ministries (e.g., Ministry of Immigration and Integration, Ministry of Labor, Social Affairs and Social Services), and a detective agency. Eligibility is repeatedly checked and is limited to individuals who have never owned a house and whose income is below a certain level. Applicants must also meet other criteria, such as marital status, family size, children's ages, and health status (Hananel, 2020). After receiving the apartment, the tenant's financial situation is not examined unless they want to buy the house or request a rental discount. Namely, once the eligible tenants have received a unit, they do not lose the right to live in it, even if they no longer meet the eligibility conditions. However, their share of the rent will possibly increase (Hananel, 2017).

In capitalist countries, the primary justification for public housing has been the market's failure to construct quality residences at affordable prices. Developing public housing in Israel has resulted from severe housing shortages due to wars, immense immigration, urban renewal, job creation during an economic depression, control of social unrest owing to severe housing shortages, modernization and urbanization, and benefit special target groups (Werczberger, 1995). Thus, public housing has social, economic, and national-territorial implications. It can generate jobs, boost the economy, and serve to take control of a territory by shifting citizens (Hananel, 2020). This paper is based on a systematic literature review, and focuses on the aims, advantages, challenges, and limitations of public housing in Israel.

2. LITERATURE REVIEW

The initial aim of public housing in Israel was to supply permanent shelter for immigrants. However, along the years, the objective has changed to provide affordable housing to low-income households and temporary rentals to target groups (Werczberger, 1995). Israel's history, governmental structures, laws, and policies affect the scope and supply of public housing. Since its establishment in 1948, Israel has implemented profound changes in its public housing policies. As a social democratic state with a progressive welfare policy, Israel viewed public housing as an essential policy tool. Public housing comprised 60% of the country's total housing stock, for which most of the population was eligible (Hananel, 2020).

In the 1950s-1960s, Israel tripled its population due to increased waves of immigration. The country presumed a culture of building public housing to accommodate the population growth. It established a government company named Amidar to find housing solutions for the many immigrants. However, Amidar failed to meet the urgent needs; Mainly due to lack of financial budget and suitable

personnel. hence, its role was reduced to occupying and maintaining buildings owned by the state. Therefore, the legal structure of public housing in Israel is as follows: The state has land ownership, and the leasing companies (e.g., Amidar, Amigour, Halamish, Shikmona, and Heled) manage and maintain the buildings. After the existing public housing stock in Israel dwindled, the state established housing for immigrants. At the end of the 1960s, public housing received an additional objective, which later became the primary goal of providing housing solutions for the elderly and weak population (Gildin, 2018).

Nevertheless, when Israel transformed from a democratic welfare state to a globalized capitalist neoliberal state, the share of total housing stock dwindled to only 1.9% of the population and for the weakest in society (Hananel, 2020; Nardy, 2023). From the 1990s till 2011, governmental actions led to a decrease in the public housing stock. The state ceased the construction of public housing. Thus, since 1992, almost no public apartments have been built in Israel (Hananel, 2020).

Additionally, Israel attempts to sell the dwellings to the occupants. Enacting the Public Housing Purchase Rights Law in 1998 (Israeli legislator, 1998) reduced the supply of public housing apartments since beneficiaries received purchase rights. The money from the sale was supposed to replenish public housing stock. However, the government carried out four different sales operations in public housing, which resulted in a reduction in apartments. Thus, at the end of 2012, only 63,500 public apartments were left in Israel, some of which were unfit. Between 2014 and 2020, the country sold 10,984 houses to people entitled to public housing. Yet, it purchased only 2,796 apartments. Hence, for every four apartments sold, Israel bought one apartment. The inventory of apartments for public housing decreases annually by 2% on average - while the demand only increases. Within five years, the number of people waiting for their first apartment in public housing increased by 63%. If the situation remains, soon, public housing will make up less than 1% of all apartments in Israel, exacerbating the gap between supply and demand (Gildin, 2018; Zamir, Ezra and Kahalyi, 2019; Shahak, 2021).

In the last fifty years, the rate of public apartments from the overall apartment market in Israel has decreased from 23% in 1970 to about 2.5% in 2018. This ratio of public housing situates Israel at the bottom of the scale among the OECD countries, as the average rate in these countries is about 10% of public accommodation from all available apartments. Therefore, in a global comparison, Israel is among the nations where public housing constitutes only a marginal fraction of the housing solutions (Shahak, 2021).

At the end of 2020, the public housing stock included approximately 53,000 apartments in 185 cities. Of these, 785 uninhabited apartments await renovation, and 1,549 are rented to public entities. About 6,844 Ministry of Construction and Housing beneficiaries were waiting for public housing, of which 4,322 were waiting for their first apartment in public housing, and 2,522 public housing tenants were waiting for a change of apartment (Shahak, 2021). Thus, there are

about 50,000 apartments, whereas 42,000 tenants are legally entitled to buy their homes at a significant discount.

Public housing is not limited to residential problems. It holds societal and financial repercussions. Regarding social and economic equality, most public housing construction in Israel is in development towns and peripheral areas. Thus, public housing may generate and reproduce class structure and widen economic disparities in Israeli society by creating slums and concentrations of poverty (Hananel, 2017). Public housing can also broaden ethnic gaps since Israel's public housing policy differentiates between ethnic groups, whereas there is a negligible percentage of national minorities among public housing tenants (Hananel, 2020).

Furthermore, Israel lacks systematic legislation regarding public housing. The field of public housing has numerous and complex procedures and regulations. There is no uniform and exhaustive definition for affordable housing, only a vague description reflected in various laws and regulations. Hence, statutory and institutional gaps, along with the shortage in public housing, affect the weakest in society (Zamir, Ezra and Kahalyi, 2019). Specifically, the countless procedures and regulations result in a shortage of public housing apartments and the absence of primary policy regulating the field. Most public housing arrangements appear in internal guidelines or uniform contracts (Gildin, 2018). Hence, the lack of a clear strategy impairs the understanding of the state's obligations, the rights of the tenants, and the definition of those entitled to public housing. For example, the Public Housing and Purchase Rights Law (Israeli legislator, 1998) ensures the right of public housing tenants to a dignified existence, a roof over their heads, and an ability to escape the cycle of poverty and improve their future. It is a tool for reducing disparities and providing a social safety net for disadvantaged populations. Yet, most tenants do not exercise their right to do so.

Public housing in Israel suffers from shortage, neglect, inconsistent policies, and lack of systematic legislation. Nevertheless, it is still a significant tool for honest living and a protective net for vulnerable populations. The following section discusses the alternatives to publicly owned housing.

3. DISCUSSION

Public housing problems in Israel stem from a lack of apartments, poorquality dwellings, insufficient government investment in flats' construction and maintenance, and the remote geographical location of most compounds, resulting in unequal employment opportunities, education, and culture. Israel's public housing policy intensifies class-sectarian separation and enhances socioeconomic disparities (Gaf, 2020).

Nevertheless, publicly owned housing is not the only, most effective, or equitable way to assist the weak in society. Numerous alternatives exist, like housing allowances, land subsidies, urban renewal projects, and low-interest loans to developers or buyers (Werczberger, 1995). For decades, Israeli governments have neglected the housing sector, and the public housing stock has deteriorated

to a point where it is no longer a significant factor in the market. The global economic crisis, the rise in housing prices, and social protests forced governments to find a solution. For example, the Israeli government's main housing expenditure is rent subsidization due to the lack of new construction and inadequate investment in the upkeep of existing apartments. The subsidy amount varies and depends upon various parameters, such as eligibility criteria (e.g., elderly, immigrant, disabled, on income support, etc.), age, number of household members, and residency area. The allocation of rent subsidies is a significant budget component of the Ministry of Construction and Housing. However, a considerable gap prevails between the rent charged on the open market and the rent subsidy. Thus, contrary to the public housing model, which guarantees some certainty, those eligible for rent subsidization need to fund the high cost of rent from their limited resources and are at the mercy of the market (Swirski and Hoffmann-Dishonthe, 2017; Gaf, 2020).

Hence, the limited solutions implemented so far have not led to a significant change, and the number of households that meet the burden of housing expenses continues to grow. Israel is at a crossroads, and the state's failure in dealing with the crisis arises from the government's underutilization of its total power to build public housing on a large scale.

Scholars try to solve the housing problem by encompassing the three tiers of the housing market - ownership, rental, and public housing. For instance, Swirski and Hoffmann-Dishonthe (2017) suggest that Israel can address the unaffordable and unattainable housing crisis by creating a public option, namely, promoting government construction of long-term rental housing at affordable prices for all population strata. The government construction of long-term rental housing will be publicly owned and leased below market prices.

In contrast, Meir and Sorotskin (2019) believe that granting long-term public housing is an ineffective way to advance an adequate standard of living for low-income families. They claim that financial aid is a better solution for the state and the tenant. Meir and Sorotskin (2019) propose to provide almost all rent assistance to eligible people while reserving the tool of public housing for a few thousand households for whom rent aid may not provide an adequate response. They also argue that a period of acute hardship, which justifies the provision of an apartment, is often transient. Therefore, the right to a public apartment should be limited to about seven years.

Hananel (2020) mentioned the option of urban renewal development, nationally and locally, and giving developers the right to build on publicly owned lands to lower the price of housing units. According to this line of thought, public housing stock will increase through urban renewal projects funded by private-sector investment, not state investment.

In summary, public housing in Israel is at a turning point and necessitates a solution. Public housing is a focal element of Israel's protective net for the weak in society. However, currently, the country neglects the vulnerable. Israel must find

an efficient way to balance profitability and well-being, regulations, and social protection to pave a path toward affordable and attainable housing.

4. CONCLUSION

This review paper presents the strengths and weaknesses of public housing in Israel. It exhibits the history, evolution, eligibility, problems, limitations, and possible solutions.

Shortages of affordable housing are a long-lasting challenge in Israel. Low inventory, inadequate apartments, substandard housing, and scarce government investment in construction and maintenance contribute to this problem. Expanding the housing supply is a single approach to tackle shortages and provide more affordable options. Other efforts, like urban renewal development, financial aid, and long-term rental housing, can also increase public housing opportunities.

Public housing in Israel is at a defining moment that demands a resolution. The state must not disregard the weak and should be committed to realizing a competent equilibrium between supply and demand, lucrativeness and social security, and rules and welfare.

This background constitutes a base for research on a Ph.D. entitled "Consumer Behavior and Marketing of Public Housing in Israel," hoping to embody a stepping stone to achieve the research aims.

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AN ANALYSIS OF THE RELATIONSHIP BETWEEN AUDIT COMMITTEE CHARACTERISTICS AND THE LEVEL OF ASSURANCE OF THE SUSTAINABILITY REPORT. CASE STUDY FOR COMPANIES LISTED ON THE BUCHAREST STOCK EXCHANGE

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Abstract
Our study aims to examine the effects of audit committee characteristics on the voluntary external assurance (SRA) of sustainability reports or annual activity reports for 59 companies listed on the Regulated market of the Bucharest Stock Exchange (BSE), in the Premium, Standard, and Int'l categories, between 2018 and 2022. Using regression analysis, we found that audit committee independence and financial expertise are inversely related to the level of SRA, and the size and frequency of audit committee meetings significantly and positively influence SRA. Based on these findings, we believe that an increase in companies' focus on improving audit committee characteristics would have a positive effect on the quality and credibility of sustainability reporting. Note that our study is for the first time investigating the potential links between the quality of the audit committee and the voluntary external assurance of sustainability reports in the case of Romanian companies.
Keywords: *audit committee; sustainability report; assurance.*
JEL Classification: M420, M410, M400.

1. INTRODUCTION

Business development strategies have diversified due to society's increasing awareness of environmental and social issues, climate change, natural disasters, limitation of natural resource (Seuring and Müller, 2008; Kolk and Tulder, 2010; Junior *et al.,* 2014). Considering this situation, sustainability reporting becomes a vital instrument for organisations to provide transparent communication with investors, especially about social and environmental

performance (Junior *et al.*, 2014). Some researchers (Barrett, 2005; Seuring and Müller, 2008) argue that sustainability reporting has influenced the decision-making process of investors concerned not only about economic issues, but also about environmental and social issues.

However, various researchers (Lyon and Maxwell, 2006; Hahn and Lülfs, 2014) believe that the credibility of reports is often questionable, because in some cases, companies only publish reports for social and environmental advertisement purposes. Farooq and Villiers (2017) argue that external assurance would be the solution to build trust in sustainability reporting. This study investigates the link between audit committees and sustainability reporting assurance, considering that an additional impact can be made by audit committee characteristics – as opposed to the board of directors and the existence of sustainability committees – in the voluntary assurance of sustainability.

While companies initially focused only on profit maximisation, nowadays they focus on economic, social, and environmental issues, also known as the Triple Bottom Line (TBL) (Baroroh *et al.,* 2022). Some researchers (Alsayegh *et al.*, 2020; Vieira and Radonjič, 2020) believe that companies' participation in sustainability and non-financial reporting activities is geared towards advertising themselves on the market, building reputation and legitimacy, enhancing competitiveness, and incentivising employees. Sustainability reporting becomes a means to disclose transparent information about how the company is effectively managing its business.

Sustainability reporting is also an important communication tool used to demonstrate transparency, accountability, and effective corporate management, being specifically intended for investors (Subramaniam *et al.,* 2006; Amran *et al.*, 2014; Chen *et al.,* 2016; Romero *et al.*, 2019; DeSimone *et al.*, 2021). Sustainability reporting is committed to supporting investor decision-making by interpreting environmental as well as economic and social information (Clarkson *et al*., 2008).

The quality of sustainability reporting is generally not highly valued (Kolk, 2008), as it is believed to support company management rather than investor interests (Belal, 2002). Managers are suspected of withholding information to hinder the market's ability to monitor their performance (Karamanou and Vafeas, 2005), leading to low trust in organisations in relation to their responsibilities to society and the environment (Amran *et al.*, 2014). Thus, in this context, the need for credible sustainability reporting is evident (Sawani *et al.,* 2010). In principle, companies' sustainability reporting should prove ethical behaviour through the sustainability practices they implemented (Amran *et al.*, 2014) and transparency, reducing opportunistic behaviours (Martínez-Ferrero *et al.*, 2015) and the unethical manipulation of earnings (Rezaee and Tuo, 2019).

Managers face the challenge of enhancing credibility and increasing the quality of sustainability reporting to address growing investor concerns (Cohen

and Simnett, 2015). Chih *et al.* (2008) and Bozzolan *et al.* (2015) argue that organizations that are geared towards sustainability practices are more concerned with creating value for investors by providing transparent and reliable financial information.

Al-Shaer and Zaman (2018) and Junior *et al*. (2014) argue that, in order to appease the concerns of investors and regulators, there has been growing interest in reporting sustainability matters and the external assurance thereof, which leads to increased credibility of reports. Although there is an increasing demand for external assurance of sustainability reporting (DeSimone *et al.,* 2021), this process is still in its infancy. Kiesnere and Baumgartner (2019) find that sustainability assurance intensifies the sustainability management and reporting system and the internal audit function brings value to the company by improving risk management.

Our study provides empirical evidence on the relationship between audit committee characteristics and sustainability reporting assurance building on cross-sectional research conducted by Al-Shaer and Zaman (2018). The objective of the study is to assess the impact of the audit committee on sustainability reporting assurance in relation to the board of directors' characteristics of 59 companies listed on the BSE Regulated Market during 2018-2022. We believe it is important to investigate the role of audit committees in influencing corporate decisions concerning the external assurance of sustainability reporting. The results of the study highlight that both the independence (ACIND) and financial expertise (ACEXP) of the audit committee negatively and significantly influence the external assurance of sustainability reporting (SRA) ($p < 0.01$). In contrast, the frequency of meetings (ACMEET) and the size (ACSIZE) of the audit committee positively and significantly influence the level of assurance of sustainability reporting ($p < 0.1$).

Our paper is structured in five sections. The following section provides a brief literature review and outlines the research hypothesis. Section 3 presents the companies included in the sample and the research methodology. Section 4 contains the results of the study and section 5 presents the conclusions and limitations of the study.

2. LITERATURE

2.1 Current state of research on sustainability reporting and audit

Sustainability has become a means to increase returns for investors and improve business performance. This paper focuses on the importance of the audit committee and capturing its role in increasing the credibility of the sustainability report by means of an analysis on companies listed on the Bucharest Stock Exchange (BSE). In the literature, we identify concerns about the analysis of the relationship between the quality of sustainability reporting and the quality of post-audit financial reporting (Al-Shaer, 2020), between the

quality of the audit committee and the quality of the sustainability report (Buallay and AlDhaen, 2018; Kuzey *et al.*, 2023, Meutia *et al.*, 2023), the importance of external assurance of sustainability reporting (Simnett *et al.,* 2009; Junior *et al.,* 2014; Al-Shaer and Zaman, 2018; Zaman *et al.*, 2021).

Al-Shaer (2020) investigates whether the relation between sustainability reporting quality and post-audit financial reporting quality is contingent upon the audit activity. The study suggests that, in fact, the quality of sustainability reporting is dependent on the factors considered by auditors in their audit risk assessment practices. Companies that put considerable effort and resources into producing high quality sustainability reports demonstrate a consistent attitude towards quality, leading to less effort for auditors in verifying financial reports, while also reducing business risks. Kuzey *et al.* (2023) find that the independence and expertise of the audit committee reinforce the relevance of the value of the sustainability report, and investors take into account the quality of the audit committee. Thus, the structure of the audit function plays an important assurance role in the value relevance of sustainability reports. Researchers argue that the quality of the audit committee build confidence in sustainability reporting, extending audit responsibility beyond financial reporting.

Junior *et al.* (2014) argue that voluntary external assurance can enhance the credibility of sustainability reports. Along the same lines, Al-Shaer and Zaman (2018) and Zaman *et al.* (2021) demonstrated the importance of the audit committee, arguing that assurance increases the credibility of sustainability reports. Researchers believe that audit committee characteristics have an additional impact compared to those of the board of directors and the existence of sustainability committees in voluntary sustainability assurance. Erin *et al.* (2022) argue that the quality of both the board of directors and the audit committee significantly influences the quality of sustainability reporting, and that external assurance contributes to the quality of reporting of companies listed on the Nigerian Stock Exchange.

Perego and Kolk (2012) demonstrate that audit practices become important considering external institutional pressures as well as companies' internal resources and capabilities. The evidence provided also suggests that many national companies project a symbolic image of accountability through assurance, undermining the credibility of these practices. In contrast, Simnett *et al.* (2009) argue that voluntary external assurance of sustainability reporting is a function of company, industry or country factors. Zuñiga-Pérez *et al.* (2020) demonstrate that sustainability reporting has a positive effect on the liquidity of companies in the Chilean market, and that auditing these reports does not influence liquidity.

Trotman and Trotman (2015) note the audit committees' concern with sustainability-related processes and the accuracy of sustainability reporting, and

Baroroh et al. (2022) argue that an increase in the frequency of audit committee meetings leads to an increase in the quality of sustainability reporting.

The study by Meutia *et al.* (2023) demonstrates that audit committee independence positively influences sustainability reporting, while the financial expertise of the committee negatively and significantly influences sustainability reporting of commercial banks in Indonesia. Amoako *et al.* (2023) also argue the importance of the audit committee in drafting a quality sustainability report. The researchers' study shows that internal audit effectiveness, risk management process and sustainability responsiveness have a positive relationship with sustainability audits. Researchers Buallay and AlDhaen (2018) conducted a study examining the relationship between audit committee characteristics and the sustainability reporting levels of 59 banks in the Gulf countries during 2013-2017. They demonstrated that the size, independence, and number of audit committee meetings have a significant and positive impact on the level of sustainability reporting, whereas the financial expertise of the audit committee significantly and negatively influences the sustainability report.

We note a great deal of interest in the literature regarding the analysis of the relationship between auditing and sustainability, with researchers' debates mainly focusing on the relationship between audit committee quality and sustainability reporting quality. This study provides an opinion on the role of the audit committee in the external assurance of sustainability reporting, in order to assess the credibility of sustainability reporting in Romania between 2018-2022.

2.2 Hypothesis

Although the role of audit committees in relation to external assurance reporting has been the subject of many articles (Simnett *et al.,* 2009; Junior *et al.,* 2014; Al-Shaer and Zaman, 2018), in Romania this topic has not yet been discussed. It was noted that there is a positive relationship between audit committees and financial and audit reporting, and that the external assurance of sustainability reporting helps to protect the reputation of the audit committee. In order to moderate the demands of investors and reporting institutions, companies are increasingly revealing their sustainability concerns and turning to the external assurance of these reports (Junior *et al.,* 2014; Al-Shaer and Zaman, 2018, Zaman *et al.,* 2021; Erin *et al.,* 2022).

Our study measures the credibility of sustainability reports by assessing the impact of audit committee on the assurance of sustainability reporting in relation to the characteristics of the board of directors of 59 companies listed on the BSE Regulated Market in the Premium, Standard and Int'l categories during 2018-2022. To achieve the objective of the study, we analysed the activity reports and sustainability reports published by the companies included in the study either on their own websites or on the BSE website, accessed on 20.03.2024, over the 2018-2022 period.

The quality characteristics of audit committees with respect to qualification, expertise, diligence, independence, size and number of meetings can be deemed important resources in increasing the value of sustainability reports (Buallay and AlDhaen, 2018; Kuzey *et al.,* 2023, Meutia *et al.,* 2023). Researchers Bédard and Gendron (2010) and Turley and Zaman (2004) argue that the expertise, independence, and size of the audit company are characteristics in exercising authority within the company. The expertise of the audit committee is seen as a characteristic designed to influence the quality of the assessment of sustainability matters, but also to increase the quality of information on results (Abbott *et al.*, 2004; Bédard and Gendron, 2010). The Governance Code of BSE, Romania, recommends that, in the case of Premium Category companies, the audit committee must consist of at least three members and the majority of audit committee members have to be independent. Various researchers (Abbott *et al.,* 2004; Turley and Zaman, 2004; Meutia *et al.*, 2023) believe that audit committees comprised of non-executive and independent persons are more likely to exercise control over company management for quality and transparent reporting. Previous research (Beasley *et al.*, 2009, Zaman *et al.,* 2011) has demonstrated the importance of audit committees in monitoring the financial reporting process, and the frequency of audit committee meetings has been associated with quality reporting.

In order to improve the quality of sustainability reporting, companies are interested in institutionalizing sustainability practices by involving the organizational structure in the reporting process (Adams, 2002; Amran *et al.,* 2014; Fernandez-Feijoo *et al*., 2018; Mio *et al.,* 2020). Al-Shaer and Zaman (2018) argue that the existence of sustainability committees and independent boards of directors influence the voluntary external assurance of sustainability reporting. In examining the voluntary external assurance of sustainability reporting, risk and corporate governance oversight and sustainability reporting are seen as interdependent. Audit committee members and independent board members work together in overseeing and monitoring reporting risks in order to protect their reputations.

Our research hypothesis is as follows:

H*$_1$: The level of assurance of sustainability reporting is positively influenced by audit committee characteristics to a greater extent than the boards', and the existence of sustainability committees*.

3. METHODOLOGY

3.1 Data and variables

To assess the relationship between audit committee characteristics and sustainability reporting assurance, we collected data from sustainability reports and annual activity reports published by the companies included in the study on their own websites and on the BSE website, www.bvb.ro accessed on

20.03.2024) over the 2018-2022 period. At the time of this study (April 2024), out of the total of 86 companies whose securities are traded on the Regulated Market of the BSE, in the Premium, Standard and Int'l sections, 27 companies were excluded from the sample, of which 3 companies were excluded because they had no reports published during the period under review, 19 companies had not established an audit committee, and 5 companies were undergoing reorganization or insolvency. Table 1 shows the grouping of the sampled companies based on their field of activity.

Table 1. Classification of the companies included in the study sample by fields of activity

No.	Field of activity	Total	Included in the study	Eliminated
1	Consumer goods industry	13	11	2
2	Oil and energy industry	26	14	12
3	Basic materials, constructions, and utilities	21	16	5
4	Services	6	5	1
5	Financial services	16	12	4
6	Technology and telecommunications	4	1	3
	Total	86	59	27

Source: own processing

All variables used in this study were selected in line with the literature, which allows us to compare the results with previous research. The dependent variable is the external assurance of the sustainability report or annual activity report (SRA). The independent variables include audit committee size (ACSIZE), audit committee independence (ACIND), financial expertise of the audit committee (ACEXP), audit committee meeting frequency (ACMEET), existence of the sustainability committee (SUSCOM), size of the board of directors (BODSIZE), board independence (BODIND) and board meeting frequency (BODMEET). The control variables used are company size (SIZE), return on assets (ROA), leverage (LEV) and industry classification (IND). Table 2 provides a summary of the variables used in the study.

Table 2. Description of the variables

Variables	Description	Literature
Dependent variable		
External assurance of the sustainability report or annual activity report (SRA)	Value is 1 if the report is externally assured, otherwise the value is 0	Simnett *et al.* (2009); *Junior et al.* (2014); Al-Shaer and Zaman (2018)

Variables	Description	Literature
Independent variables		
Size of the audit committee (ACSIZE)	Total members in the audit committee	Al-Shaer and Zaman (2018); Zaman *et al.* (2021); *Meutia et al.* (2023)
Independence of the audit committee (ACIND)	Ratio of independent members in the audit committee	Al-Shaer and Zaman (2018); Kuzey *et al.* (2023); Meutia *et al.* (2023)
Financial expertise of the audit committee (ACEXP)	Ratio of members with financial expertise in the audit committee	Al-Shaer and Zaman (2018); Kuzey *et al.* (2023); Meutia *et al.* (2023)
Audit committee meeting frequency (ACMEET)	Number of meetings over the course of a year of the audit committee	Al-Shaer and Zaman (2018); Kuzey *et al.* (2023); Meutia *et al.* (2023)
Existence of the sustainability committee (SUSCOM)	Value is 1 of there is a sustainability committee, otherwise the value is 0	Al-Shaer and Zaman (2018)
Size of the board of directors (BODSIZE)	Number of members in the board of directors	
Independence of the board of directors (BODIND)	Ratio of independent members in the board of directors	
Meeting frequency of the board of directors (BODMEET)	Number of meetings over the course of a year of the board of directors	
Control variables		
Company size (SIZE)	Natural logarithm of the total assets	Al-Shaer and Zaman (2018); Hidayah *et al.* (2019)
Return on assets (ROA)	Net result/Total assets	Al-Shaer and Zaman (2018)
Leverage (LEV)	Total debt/Total assets	
Industry classification (IND)	Categorical variable from value 1 to value 6, function of the industry type: value 1 for companies in the consumer goods industry, value 2 for companies in the oil and energy industry, value 3 for companies in the field of constructions and utilities, value 4 for companies in the service industry, value 5 for companies in the field of financial services, and value 6 for companies in the technology and telecommunications industry.	Sierra *et al.* (2013)

Source: own processing

3.2 Descriptive statistics and correlations

Table 3 calculates the mean, standard deviation, and minimum and maximum values of the independent and dependent variables for the selected population. The mean value was calculated both for the whole sample and by industry. We note that the mean value of the dependent variable, SRA, across the entire sample is 0.081, i.e. only 7 companies have externally audited their activity or sustainability report. Out of the whole sample analysed, companies in the oil and energy industry have the highest share in the total number of externally audited activity or sustainability reports (28.57%).

Regarding the audit committee variable, we note that the mean value of audit committee size is 2.92, which indicates that there are on average about 3 members in the audit committee of the companies included in the study. Although the Corporate Governance Code (BSE, 2015) recommends a minimum of 3 members in the audit committee, we note that this recommendation is not followed in the case of BSE listed companies in the Premium category. In contrast, companies in the oil and energy industry have at least 3 members in the audit committee, as do the companies that have opted for external assurance of the annual activity or sustainability report.

The ACIND variable has a mean value of 0.82, which indicates a high level of independence of the audit committee members. The mean value of the ACEXP variable is 0.82 and that of the ACMEET variable is 5.84, indicating that audit committees have members with financial expertise and the average number of meetings thereof was of 6 meetings. The mean value of the SUSCOM variable (0.112) suggests that the number of sustainability committees is very low among the companies included in the study. We note that this committee is predominantly found in companies in the oil and energy industry (0.31), but also in companies that have opted for external auditing of their activity reports or sustainability reports (0.92).

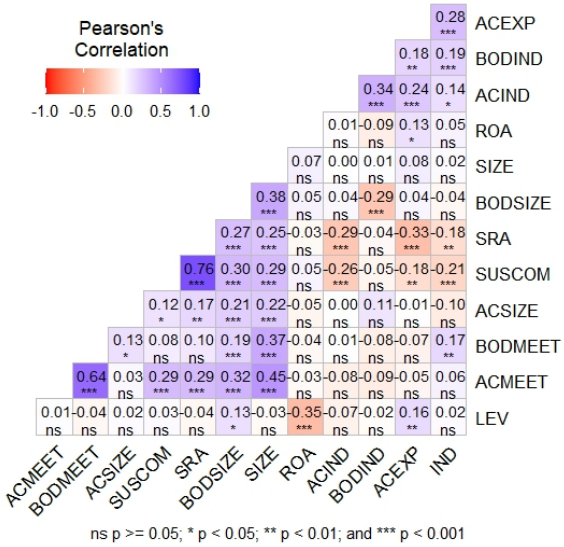
On average, the board of directors includes 5 members (BODSIZE = 5.23). Board independence (BODIND) for the companies included in the study is 0.51, which means that half of the board is independent, and the average number of annual meetings (BODMEET) is 18. We note that in companies with externally audited activity or sustainability reports, the mean value of the BODIND variable (0.47) is lower than that of unaudited ones (0.51), which means that the boards of companies with unaudited reports are more independent.

Table 3. Descriptive statistics

All companies	N	SRA	ACSIZE	ACIND	ACEXP	ACMEET	SUSCOM	BODSIZE	BODIND	BODMEET	SIZE	ROA	LEV
Mean	295	0,0810	2,915	0,824000	0,821000	5,8370	0,1120	5,227000	0,5080	17,9250	8,733	0,054	0,318
St. Dev.	295	0,2740	0,586	0,246000	0,264000	4,5320	0,3160	1,744000	0,3020	13,8240	0,949	0,085	0,302
Min	295	0,000	2,000	0,000000	0,333000	0,0000	0,0000	1,000000	0,0000	0,0000	6,213	-0,218	0,002
Max	295	1,0000	7,000	1,000000	2,000000	28,0000	1,0000	11,000000	1,0000	81,0000	11,097	0,415	2,063
Industries													
Consumer goods industry	13	0,0181	2,909	0,684847	0,772724	4,8545	0,1090	4,563636	0,4354	1,3545	8,430	0,047	0,453
Oil and energy industry	26	0,2857	3,142	0,812142	0,692380	8,2285	0,3142	6,242857	0,4447	2,33714	9,349	0,054	0,221
Constructions and utilities	21	0,0375	2,800	0,941666	0,872917	3,6625	0,0375	5,112500	0,5021	1,2350	8,286	0,057	0,263
Services	6	0,0000	2,800	0,800000	0,799995	3,1200	0,0000	4,840000	0,6857	7,4400	8,236	0,016	0,280
Financial services	16	0,0000	2,850	0,819444	0,938888	8,1666	0,0333	4,816667	0,6006	2,7050	9,290	0,074	0,348
Technology and telecommunications	4	0,0000	3,000	0,800000	1,000000	3,6000	0,0000	7,000000	0,2857	2,2000	6,346	0,039	0,864
SRA													
SRA = 0	271		2,8856	0,845079	0,846739	5,4464	0,0405	5,084871	0,5112	17,51292	8,663	0,055	0,321
SRA = 1	24		3,2500	0,583333	0,527780	10,250	0,9166	6,833333	0,4718	22,58333	9,519	0,044	0,280

Figure 1 illustrates the correlation matrix between the variables used in our study. We note that SRA is positively and significantly correlated with the

variables SUSCOM (0.76), BODSIZE (0.27), ACMEET (0.29), SIZE (0.25) and ACSIZE (0.17), and negatively and significantly correlated with the variables ACEXP (-0.33), ACIND (-0.29) and IND (-0.18). The highest correlation is between SRA and SUSCOM (076), which means that both variables show similar aspects.



Processing in Rstudio

Figure 1. Correlation analysis

3.3 Method

This subsection presents the research method. In order to test whether the contribution of audit committee in assuring the sustainability reporting is more important than the board of directors and the sustainability committee, we propose a regression analysis model based on the model provided by Al-Shaer and Zaman (2018):

$$SRA = \alpha + \beta_1 ACSIZE + \beta_2 ACIND + \beta_3 ACEXP + \beta_4 ACMEET + \beta_5 SUSCOM + \beta_6 BODSIZE + \beta_7 BODIND + \beta_8 BODMEET + \beta_9 SIZE + \beta_{10} LEV + \beta_{11} ROA + \beta_{12} IND + \varepsilon_{it} \quad (1)$$

4. RESULTS AND DISCUSSION

This section presents the results of the regression analysis. The first step entails testing the relationship between audit committee characteristics and the external assurance of the annual activity or sustainability report (Table 4), followed by an analysis of the influence of the audit committee combined with the SUSCOM variable on the SRA variable (Table 5).

Table 4 tests the influence of the audit committee on SRA. Model 4.1 tests the influence of audit committee characteristics on SRA, and Model 4.2 tests the influence of the board of directors and the sustainability committee on the SRA variable. Model 4.3 tests whether the contribution of the audit committee is additional to the contribution of the board and the sustainability committee.

Table 4. Audit committee and credibility of the sustainability report

Dependent variable:	**SRA**		
Model	(4.1)	(4.2)	(4.3)
ACSIZE	0.056**		0.030
	(0.024)		(0.018)
ACIND	-0.227***		-0.120***
	(0.059)		(0.046)
ACEXP	-0.274***		-0.203***
	(0.058)		(0.042)
ACMEET	0.012***		0.005*
	(0.003)		(0.003)
SUSCOM		0.643***	0.566***
		(0.036)	(0.037)
BODSIZE		0.011	0.015**
		(0.007)	(0.007)
BODIND		0.016	0.074*
		(0.037)	(0.039)
BODMEET		0.001	-0.001
		(0.001)	(0.001)
IND	-0.015	-0.003	0.006
	(0.010)	(0.008)	(0.008)
SIZE	0.045***	0.001	0.001
	(0.017)	(0.013)	(0.013)
ROA	0.025	-0.354***	-0.191
	(0.178)	(0.131)	(0.127)
LEV	-0.005	-0.093**	-0.061*
	(0.050)	(0.037)	(0.036)
Constant	-0.086	-0.029	0.070
	(0.151)	(0.101)	(0.108)
Observations	295	295	295
R2	0.276	0.595	0.647
Adjusted R2	0.255	0.584	0.632
Residual Std. Error	0.236 (df=286)	0.176 (df=287)	0.166 (df=282)
F Statistic	13.599*** (df=8; 286)	50.664*** (df=8; 286)	43.059*** (df=12; 282)
*p<0.1; **p<0.05; ***p<0.01			

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Model 4.1. suggests that audit committee independence (-0.227) and financial expertise (-0.274) show a significant and inverse relationship with

SRA, and audit committee size (0.056) and number of meetings (0.012) significantly and positively influence SRA. Model 4.2. shows that board characteristics do not show significant values ($p > 0.05$). Model 4.3 suggests that both independence (-0.120) and financial expertise (-0.203) of the audit committee negatively and significantly influence the SRA ($p < 0.01$). In contrast, the number of audit committee meetings (0.005) positively and significantly influences SRA ($p<0.1$). The presence of the sustainability committee (SUSCOM) shows a positive and significant influence for both models ($p < 0.01$). We note that the influence of the board of directors is positive and significant only in model 4.3 (in model 4.2, the board of directors shows no influence – $p > 0.05$), suggesting that the presence of the audit committee improves the influence of the BODSIZE (0.015) and BODIND (0.074) variables on SRA. Including the audit committee variable in the analysis improves the confidence in the regression model (R^2 becomes 0.647 in model 4.3 versus 0.595 in model 4.2 and 0.276 in model 4.1).

Overall, the results of the regression analysis partially confirm the research hypothesis that the contribution of the audit committee is additional to that of the board of directors and the sustainability committee. Although audit committee characteristics are partially positively correlated with SRA, we note that the inclusion of variables regarding audit committee characteristics boosts the influence of the board of directors and sustainability committee on SRA. We can argue that the existence of the audit committee within companies confers more credibility to the board of directors and the sustainability committee, and implicitly to the annual activity reports and sustainability reports.

Table 5. Credibility of the sustainability report

Dependent variable:	SRA
ACSIZE	0.003
	(0.014)
SUSCOM	-0.048
	(0.208)
ACIND	-0.033
	(0.035)
ACEXP	-0.018
	(0.034)
ACMEET	-0.003
	(0.003)
BODSIZE	0.011**
	(0.005)
BODIND	0.004
	(0.029)
BODMEET	0.0002
	(0.001)

Dependent variable:	SRA
SIZE	0.016*
	(0.009)
ROA	-0.049
	(0.095)
LEV	-0.022
	(0.027)
ACSIZE:SUSCOM	0.412***
	(0.051)
SUSCOM:ACIND	-0.212
	(0.147)
SUSCOM:ACEXP	-0.849***
	(0.078)
SUSCOM:ACMEET	0.012**
	(0.005)
Constant	-0.127
	(0.082)
Observations	295
R2	0.808
Adjusted R2	0.797
Residual Std. Error	0.123 (df = 279)
F Statistic	78.164*** (df = 15; 279)
*p<0.1; **p<0.05; ***p<0.01	

Processing in Rstudio

Table 5 analyses the influence of the audit committee combined with the SUSCOM variable on the SRA variable. The results of the regression analysis indicate a negative and significant influence of the ACIND (-0.212) and ACEXP (-0.849) variables and a positive and significant influence of the ACSIZE (0.412) and ACMEET (0.012) variables on SRA. By drawing a comparison to the previous results (Table 4), we note that the influence of the ACIND and ACEXP variables remains negative and significant, and the influence of the ACMEET variable remains positive and significant; conversely, the ACSIZE variable becomes positive and significant (0.412) on the SRA variable, suggesting that the presence of sustainability committee boosts the value of audit committee in companies.

Table 6. Audit committee and credibility of the sustainability report for non-financial companies

Dependent variable:	SRA		
Model	(6.1)	(6.2)	(6.3)
ACSIZE	0.057**		0.035*
	(0.028)		(0.020)

Dependent variable:	SRA		
ACIND	-0.246***		-0.127**
	(0.067)		(0.052)
ACEXP	-0.241***		-0.144***
	(0.069)		(0.049)
ACMEET	0.019***		0.004
	(0.005)		(0.005)
SUSCOM		0.671***	0.591***
		(0.038)	(0.042)
BODSIZE		0.019**	0.025***
		(0.009)	(0.009)
BODIND		0.001	0.048
		(0.040)	(0.043)
BODMEET		0.001	-0.0001
		(0.001)	(0.002)
	0.074***	0.012	0.009
SIZE	(0.023)	(0.018)	(0.018)
	-0.204	-0.713***	-0.522***
ROA	(0.249)	(0.181)	(0.180)
	0.018	-0.113**	-0.082*
LEV	(0.067)	(0.049)	(0.048)
	-0.400**	-0.143	-0.058
Constant	(0.198)	(0.142)	(0.146)
Observations	235	235	235
R2	0.339	0.649	0.683
Adjusted R2	0.319	0.638	0.667
Residual Std. Error	0.250 (df=227)	0.183 (df=227)	0.175 (df=223)
F Statistic	16.647*** (df=7; 227)	59.921*** (df=7; 227)	43.626*** (df=11; 223)
*p<0.1; **p<0.05; ***p<0.01			

Processing in Rstudio

Table 6 analyses the influence of the impact of audit committee characteristics on the SRA variable for companies in the non-financial sectors. Companies in the financial sector report sustainability and corporate governance information differently. Similarly to Table no. 4, Model 4.1, we note that in Model 6.1, audit committee independence (-0.127) and financial expertise (-0.144) characteristics show a significant and inverse relationship with SRA, and audit committee size (0.035) and number of meetings (0.004) significantly and positively influence SRA. Only the size of the board of directors (BODSIZE = 0.019) significantly and positively influences the SRA in model 6.2. The sustainability committee

shows positive and significant values in both model 6.2 and model 6.3, which means that this variable influences the SRA.

The results of the regression analysis in model 6.3 show negative and significant influences of the ACIND (-0.127) and ACEXP (-0.144) variables and positive and significant influences of the ACSIZE (0.035), SUSCOM (0.591) and BODSIZE (0.025) variables on the SRA variable. The results of the regression analysis reject the research hypothesis that the contribution of the audit committee is additional to that of the board of directors and the sustainability committee. The majority of audit committee characteristics negatively correlate with SRA for companies in non-financial sectors. These results suggest that the presence of the audit committee in companies in non-financial sectors confers more credibility to the board of directors and the sustainability committee and, implicitly, to the annual activity and sustainability reports.

Upon analysis of the results, we can argue that the research hypothesis is partially validated. According to Table 4, two out of four audit committee characteristics show significant and positive values. The negative association between audit committee independence and financial expertise and SRA suggests that the external assurance process is considered a burden for most of the companies included in the study. Compared to the contribution of the board of directors and the sustainability committee, we argue that the inclusion of the audit committee characteristics variables boosts the influence of the board of directors and the sustainability committee on voluntary SRA.

In contrast to the study by researchers Al-Shaer and Zaman (2018), who argue that in the United Kingdom audit committees have the ability to mitigate threats to the credibility of the sustainability report, in Romania audit committees are in their infancy in terms of the process of diversifying and shaping the duties related to the oversight and certification of non-financial reporting.

5. CONCLUSIONS

In Romania, of the 86 companies listed on the Regulated market of the BSE, in the Premium, Standard and Int'l categories, only 59 companies have an internal audit committee over the 2018-2022 period, which means that 31% of listed companies still do not have an audit committee. Of the 59 companies listed on the BSE, only 7 companies have externally assured their annual activity reports or sustainability reports on a voluntary basis. Although all financial statements presented during the period under review were audited by external auditors, non-financial reporting in Romania is nevertheless still not carried out in accordance with the Corporate Governance Code (BSE, 2015) and the Global Reporting Initiative Standards (GRI, 2022).

We can say that the results obtained confirm the expectations regarding the role of the audit committee as a mechanism capable of improving the credibility of the annual activity reports or sustainability reports. Two out of four audit committee characteristics (ACSIZE and ACMEET) have significant and positive values in the regression analysis performed, suggesting that, in part, audit committee characteristics, as part of governance, support the company's strategy of voluntary external assurance of annual activity or sustainability reports. The results of the study suggest that the characteristics regarding audit committee size and frequency of audit committee meetings make an important contribution to increasing the credibility of annual activity or sustainability reports.

We note that only certain industries (oil and energy industry and construction and utilities industry) in Romania tend to externally assure their activity reports or sustainability reports. However, in companies with externally assured sustainability reports or activity reports, audit committees have less financial expertise and independence than companies with unaudited reports. We believe that in order to identify the influence of external assurance of sustainability reports on auditor independence, further information is required on the relationship between the audit services market and the sustainability assurance services market. For future research we propose to conduct interviews with audit committee members in order to outline the role of audit committees in the voluntary external assurance of sustainability reports.

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THE FORM OF WILL IN THE REPUBLIC OF MOLDOVA: CONTEMPORARY HISTORY, NOTARIAL PROCEDURE AND ENFORCEMENT

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Abstract
The new version of the Civil code of the Republic of Moldova starting March 1st, 2019, traditionally has already revised the forms of will by which an individual can dispose for the cause of death. In this context, some forms of will have been maintained, some forms have been excluded, and some have changed their own legal nature, which affects their legal force. In this article we will draw attention to the changes in the form of the will in the Republic of Moldova in the contemporary period, with a special focus on the authentic and holographic forms.Consequently, special attention will be given to the authentic form of the will and the notarial procedure for assigning the legal force of public authority to a will. With reference to the holographic wills, the author will describe the procedure for obtaining their enforceability, through the point of view of his own notary practice, as well as will be elucidated some existing normative uncertanties. Although the domestic legislation does not expressly regulate the circulation of oral wills, a quasi-oral form has been introduced (which assumes that the testator's will is expressed orally, although it is to be expressed in written form in the end) and the notarial procedure with oral wills, allowed by the international treaty to which the Republic of Moldova is a party, has not been described.
Keywords: *notarial deed; notarial form; notarial document; will.*
JEL Classification: K11, K12, K15, K36.

1. CHANGE OF WILL FORM IN THE REPUBLIC OF MOLDOVA (RM)

In the present case, we will not concentrate on a detailed presentation of all the forms of will provided by law. The basic task is to elucidate the permissible forms of the will, given that it is a solemn legal act, in the light of contemporary historical developments.

In the specialized literature, there are also general rules regarding the form of the will, applicable to any will. Thus, for example, Negrila D. reports on the following requirements: a) the will must be in written form; b) the will must be drawn up by the testator individually, through a separate act; and c) to be drawn up in one of the forms expressly provided by law (Negrilă, 2013, pp. 94-98).

Another scientist, Bratu D.-D. mentions only two requirements: a) to be in written form; and b) the prohibition of mutual wills (Bratu, 2015, pp. 81-84). In a researched monographic study, in which testamentary succession in the Republic of Moldova is examined in detail, including from the perspective of comparative law, this requirement was not identified (Bănărescu, 2015, pp. 49-107).

Infra we will identify the cases where the law allows the oral form of the will. At the same time, the obligation to express a testamentary will only in a separate act goes beyond the requirements of the law. Both Moldovan and Romanian legislation prohibit two or more persons from making wills by the same will in favor of one another or in favor of a third party, although the wording of the legal provision is different. However, the same author points out that in practice there may be situations in which several wills, drawn up by different persons, without any connection between them, may be set out individually and independently on the same source (material support) and be considered perfectly valid. I consider that, in substance, this rule seeks to emphasize the unilateral and autonomous nature of the testator's will, which must not depend on the will of other persons, and, in any event, the revocability of that will must not be affected. Basically, the legal construction, when unilateral legal acts are related in a contract, which remain autonomous from the point of view of revocability, are known and permitted by law. Thus, for example, a civil partnership or partition contract may include clauses granting powers of representation (which could also be set out in a separate document - a power of attorney). The inclusion of this clause in the contract does not remove the representative's right to revoke these empowerments at any time. By analogy, I consider that the inclusion of a testamentary provision in a contract, under the current legislation, is not prohibited by law as long as the testator's free will is not affected, and if the legal effects of the contract are dependent on this testamentary provision - the revocation of the testamentary provision will dissolve legal relations created on the basis of such a contract, similar to legal acts subject under condition.

1.1 Form of the will according to the Civil Code 1964

The Civil Code of the Moldovan S.S.S.R. of 26.12.1964 (Parliament of R.S.S. Moldova, 1964), in art. 575 recognized only the authentic form of the will. At the same time, Art. 576 of the same code assimilated to notarially authenticated wills also wills drawn up in certain exceptional circumstances, such as the citizen's being found: for treatment in hospitals, in other stationary curative-prophylactic institutions, in sanatoriums or living in homes for the aged and disabled; traveling by sea vessels or domestic navigation vessels sailing under the flag of the Union of the SSR; on prospecting, optical and other similar expeditions; in places of detention, as well as of military personnel and other

persons undergoing treatment at military hospitals, sanatoriums and other military curative institutions; and soldiers, and at the deployment points of units, formations, military institutions and military educational establishments, where there are no state notary offices and other bodies, which execute notarial acts, as well as the wills of workers and servants, of their family members and of members of military families. By the Law of RM No. 1153 of 11.04.1997 on notaries (Parliament RM, 1997), wills drawn up by consuls were considered authentic, and since 17.08.2001, following the amendment by the Law of RM No. 384 of 19.07.2001 (Parliament of RM, 2001), and by the secretary of the village (commune) town hall.

The entry into force of RM Law no. 1453 of 08.11.2002 on notaries (Parliament of RM, 2002b) has not changed this situation, the competence of consuls and persons with authorized positions of responsibility of local public administration authorities to authenticate wills remained unchanged.

1.2 Form of the will according to the Civil Code 2002 in its original wording

Since 12.06.2003, the Civil Code of the RM (CC RM) of 06.06.2002 (Parliament of RM, 2002a) has broadened the form of the will allowed by law. Thus, according to art. 1458 of the Civil Code of the RM in its initial wording, the will could be drawn up only in one of the following forms:

- *holograph - written entirely personally, dated and signed by the testator;*
- *authentic - authenticated by a notary, as well as assimilated to the authenticated by a notary* (the list of those assimilated was provided in art. 1459 of the Civil Code of the RM in its original wording)*;*
- *mystic - written in its entirety, dated and signed by the testator, closed and sealed and then presented to the notary, who applies the authentication endorsement on the envelope and signs it together with the testator.*

Notarially authenticated wills authenticated by notaries, as well as by consuls and authorized persons in positions of responsibility of local public administration authorities have been recognized. The notarial practice of instrumenting the succession procedures demonstrated that the number of mystical and holographic wills was very small, mainly the authentic form was used and only in exceptional cases the person used the holographic form. Mystical wills were requested even less frequently.

Statistical information on notarial activity for the years 2002-2016 was processed by the author on the basis of statistical reports submitted by notaries and kept on paper at the Ministry of Justice of the Republic of Moldova. Further, the competence for processing statistical data was passed to the Notarial Chamber, which did not include in the statistical reports the information on the number of authenticated wills.

We note that, if in 2002, a notary authenticated on average about 70 wills, then in 2016, a notary authenticated on average about 46 wills.

The statistical data show the following (excluding localities from the left bank of the Nistru and the municipality of Bender):

Table 1. Statistics of authentic wills in RM

Year	Total number of wills	% compared to the total number of notarial acts	% compared to the total number of authenticated documents	Stable population
2002	9110	1.0508%	5.0165%	3627812
2003	9362	0.8949%	3.7116%	3618312
2004	14273	1.0193%	4.2351%	3607435
2005	14080	0.8535%	4.0308%	3600436
2006	13059	0.8067%	3.6139%	3589936
2007	14065	0.7244%	3.2584%	3581110
2008	13911	0.6372%	2.9306%	3572703
2009	14625	0.6487%	3.3436%	3567512
2010	12870	0.3999%	2.4906%	3563695
2011	13626	0.3706%	2.3146%	3560430
2012	13638	0.4719%	2.7443%	3559541
2013	14159	0.5448%	2.0791%	3559497
2014	13930	0.6433%	2.2303%	3557634
2016	13507	0.4141%	1.5331%	3553056

Source: computed by author using National Bureau of Statistics (2024)

As a result of the increase in the number of notaries, the number of notarial acts, including authentication procedures, and the decrease in the population, the number of authenticated wills has remained almost stable, ranging between 12870 and 14625 (excluding 2002 and 2003).

Using the official data of the National Bureau of Statistics (National Bureau of Statistics of the Republic of Moldova, 2024), we note that in 2014, according to the data on the stable population, on average, 1 person out of 256 made a will, and in 2016 this figure did not change significantly, being 1 person out of 264 (without the localities of the left bank of the Nistru and the municipality of Bender).

1.3 Form of the will according to the Civil Code 2002 in its current wording

As of 01.03.2019 (Parliament of RM, 2018a) the form of the will was conceptually revised.

According to Article 2222 of the Civil Code of the RM (CC RM), only two types of wills are allowed: ordinary and privileged. Ordinary wills can be holograph or authentic. The holograph will is the one drawn up personally by the testator by a written declaration signed by him (art. 2223 CC RM). At the testator's request, the holograph will must be kept by a notary (art. 2224, 2231-2233 CC RM). According to art. 2226 CC RM, the will is considered authentic if it is authenticated by a notary or by the representative of the diplomatic mission or consular office.

In contrast to ordinary wills, privileged wills can be drawn up: in special situations (art. 2227, 2228 CC RM) or in emergency situations (art. 2229 CC RM). Wills drawn up in special situations are those, which were previously assimilated to authenticated wills, as well as wills authenticated by the secretaries of local councils (art. 2227 CC RM). It should be noted that the wills authenticated by local council secretaries have been reported as privileged wills among the authentic wills, which reduces the cases of authentication, as well as their validity term.

A will made in emergency situations shall be drawn up by oral declaration by the testator in the presence of three witnesses. The formal requirement is that this must be stated in a written document, to which the legal provisions on notarial authentication apply accordingly. This form is possible only when it is not possible to draw up the will in the presence of a notary or in compliance with the requirements for a will drawn up in special circumstances (art. 2229 CC RM). It should be noted that the law does not regulate the procedure of notarial authentication of this form of will or, if this procedure is to be complied with by another person - as in the case of wills drawn up in special circumstances, nor does it specify the person who is to "replace" the notary in order to draw up a document in compliance with the authentication procedure. It is also unclear how this person will comply with the authentication procedure if he has not been previously instructed? These premises make it almost impossible to use this form or, if it is drawn up, make it easier to have it cancelled on the grounds of non-compliance with the form.

The drafting of a privileged will is permitted only if there is a fear that the testator will die before the will can be drawn up before a notary. If 3 months have passed since the will has been drawn up and the testator is still alive - it is considered that this privileged will has not been drawn up (art. 2230 CC RM).

The preservation of privileged wills falls within the competence of the notary. To this end, any privileged will is to be transmitted to the notary for safekeeping, with respect for the territorial competence (to the notary in whose

territory of activity is the registered office of the persons who have drawn up the privileged will), and the testator may at any time request that the will be transmitted to another notary (art. 2231 CC RM).

1.4 Oral will. Application of international treaties to which the Republic of Moldova is a party

In Romanian and French law, oral wills or, otherwise called – nuncupative (*nuncupatio* – declaration of will, which in private Roman law was permitted in the presence of seven witnesses) are prohibited. In Moldova, as in Austrian law, oral wills are permitted (privileged in exceptional circumstances), which are declared in the presence of three witnesses. Although art. 2229 para. (3) CC RM, requires that the fact of drawing up the oral will in this case is to be mentioned in a written document (which distorts its oral character in the RM).

As it is a requirement *ad validitatem*, failure to comply with the form required by law for a will leads to its absolute nullity. In this case, the purpose of the written form is to give the person the opportunity to clearly state his or her own will for the cause of death (when he or she will no longer be alive and it will not be possible to materialize this will), in a serious and precise manner, in order to avoid any subjective perception (sometimes wrong) of witnesses or the court or notary (who will establish his or her will to be executed) (Chirică, 2017, p. 195; Ionaș, 2020, pp. 30-31).

Failure to comply with the solemn character of the will, which requires the written form of the holograph will, does not always lead to its nullity. Thus, according to paragraph 23 of the Decision of the Plenum of the Supreme Court of Justice of the Republic of Moldova no. 13 of 03.10.2005 (Plenum of the Supreme Court of Justice of the RM, 2005), *In the event that the holograph will has been destroyed or concealed without the testator's knowledge or after his death, either by force majeure, the testamentary heir or legatee shall be able to prove by any means of proof, including by the evidence of witnesses, the existence and content of the will, the fact of destruction, loss or concealment and that this act of last will and testament meets the substantive and formal requirements of the law*.

In a similar situation, Romanian judicial practice and doctrine are based on the provisions of Art. 1037 para. (4) of the Civil Code of Romania (Parliament of Romania, 2009), which expressly allows the use of any means of evidence (Chirică, 2017, p. 196). The position recommended by the Plenum of the Supreme Court of the Republic of Moldova can be criticized, since the law expressly relates the legal effect of nullity, if the form of the will has not been respected. If the testator wished to ensure that the will was kept intact, he could send it to the notary for safekeeping. Otherwise, we have no means of protection against a fraudulent arrangement by a group of persons who, by their depositions as witnesses, will affirm the existence of a holograph will destroyed after the

death of the *de cuius*, and will declare its contents to his own liking. In order to apply the Plenum's position, it is necessary to amend the national law and to introduce this derogation from the observance of form, moreover, we are in the presence of the violation of an express rule – art. 2216 para. (1) of the RM CC, which renders such a 'will' absolutely null and void on the grounds of failure to comply.

As of 24.06.2011 in the Republic of Moldova oral wills are also recognized as valid, following the accession to the Convention on the Conflicts of Laws Relating to the Form of Testamentary dispositions, concluded in Hague on 5 October 1961 (Parliament of RM, 2011). According to this law, *in accordance with Article 10 of the Convention, the Republic of Moldova reserves the right not to recognize testamentary dispositions made orally by one of its citizens who does not possess any other nationality, except in exceptional circumstances*. Respectively, if the person who drew up an oral will holds a foreign citizenship (it does not matter whether he or she also holds the citizenship of the Republic of Moldova or not) – this will is recognized as valid in the Republic of Moldova. At the same time, "*in exceptional circumstances*", the Republic of Moldova may also recognize verbal wills drawn up by citizens of the Republic of Moldova, although the development of these provisions has not been detected in the national legislation, neither in the part related to the notarial procedure, nor in the part related to the judicial procedure. From the procedural point of view, the author considers that only the court is competent to specify the will, as well as to attribute the validity of an oral will, drawn up in compliance with the international treaty mentioned, and the notary only to execute it.

2. AUTHENTIC FORM OF WILL

Searching the wide spectrum of the varieties of the forms of wills known in the world, we observe the existence of oral wills (nuncupative), holograph wills, mystical wills, authentic wills, privileged wills, simplified wills concerning the amounts of money, values or securities deposited in specialized institutions (existing in Romania and in the Republic of Moldova until 06.06.2003 as regards deposits of money), electronic wills (currently 16 states in the USA (Uniform Law Commission, 2019) allow the drawing up of electronic wills), international wills (the international will is considered, drawn up in accordance with the Washington Convention of 29.10.1973 on the Uniform Law on the Form of International Wills), etc.

In contrast to other forms of wills, the authentic will requires the participation of a specialist in the field - a notary (abroad the will can be authenticated by the representative of the diplomatic mission or consular office), who can help to translate the testator's real will into the written form in a correct legal language.

2.1 Procedure for authenticating a will

The competence of the notary to authenticate is general and does not require a notary in a particular territory to be addressed. The notary cannot authenticate a will ex officio, but only at the testator's request, which may be either oral or written.

Being part of the notarial authentication procedure, the drawing up of the will by the notary includes the same basic obligations: Establishing the identity of the testator on the basis of the identity document; verifying the testator's capacity and discernment; providing the necessary notarial advice; drafting the text of the will; reading the text of the will and giving the testator the opportunity to read it before it is signed; verifying whether the content of the will represents the testator's true will (will check consent); observing the procedure for the testator to sign the will and, where appropriate, ensuring the participation of third persons (Pistriuga, 2020, pp. 536-545).

Taking into account the solemnity of the will, some procedures are regulated in a different way from other authentication procedures. Thus, e.g. in the reading procedure, unlike other acts, in the case of the first will, the notary reads the will and then the testator reads it. Likewise, there are stricter rules on the participation of witnesses and the signatory if the testator has a disability (hearing, speech, sight, etc.). Similarly, in the drafting procedure it is expressly specified that the testator may submit the text of the will to the notary in writing or dictate the testamentary provisions orally, and the notary is responsible for explaining the legality and legal effects of the will, for drafting the will in legal language appropriate to the testator's requests, and - if the testator insists on using his own drafting - for warning the testator that in this case the notary will not be responsible for the wording of the testamentary provisions.

The notary is obliged to register the authentic will in the register of succession files and wills kept in electronic format. The notary does not verify the ownership of rights, including property, which may be indicated in the contents of the will. This provision is based on the "*mortis causa*" nature of the will, which means that until the will comes into force, the composition of the testator's estate may be altered, including by acts concluded by the testator. The legal framework that regulates the notarial authentication procedure is art. 44 and 45 of RM Law no. 246 of 15.11.2018 (Parliament of RM, 2018b).

2.2 Role of the notary in authenticating wills

As a legal specialist and, at the same time, an impartial and independent representative of the state authority, the notary is the competent person to:

- to provide the notarial advice necessary to understand the legal effects of the will drawn up, as well as to organize a correct estate planning, by understanding the real will of the applicant;
- to draw attention to certain legal rules for the interpretation of

testamentary provisions, as well as to the legal provisions which will apply if the will does not contain a special solution;
- □ to draw attention to the limits of testamentary dispositions (in particular, the effects of violating the reserved portion, the donation ratio);
- □ to ensure that the testator's true will is explicitly expressed in clear and correct wording, using legal terms;
- □ ensure the legality of testamentary dispositions expressed;
- □ to ensure that the will is drawn up by a person with the necessary capacity, with discernment and without defects of consent;
- □ to attribute to the will the legal force of an act of public authority;
- □ to ensure the preservation of the will, which allows the will to be restored (duplicated or reconstituted) in the event of its loss by the testator (authentic wills are preserved for 75 years);
- □ to ensure publicity of the existence of the will, by introducing the information in the register of succession files and wills kept in electronic format.

The notary's list of duties can be extended and detailed. The advantages of drawing up an authentic will are obvious: it is accessible to any person, even the physically disabled, and the result of the notarial authentication procedure ensures a presumption of legality of the will and compliance with the substantive and formal conditions of the will against any challenge. Drawing up a will without the notary's participation is possible and sometimes advantageous: it is more operational (no need to be present in front of the notary) and cheaper (no additional costs for authentication by a notary), although it is not accessible to all persons (it can only be drawn up by a scholarly person). At the same time, drawing up a will in a form other than an authentic will reduces the guarantees that the will will be found (the fact of its existence is known), will be correctly set out (the testator's real will is clear as it is set out in the will), will be enforceable (testamentary dispositions are legal and enforceable); and, finally, before execution, the holograph will has to be endorsed for non-modification and validated, i.e. additional special notarial procedures need to be applied after the death of the testator, which cost more than the authentication of the will.

The use of traditional testamentary provisions is not recommended, as the legal situation of the testator may not be appropriate in cases where it would be appropriate to apply these formulations of the will. Unlike in countries with the Anglo-Saxon system (based on Common Law, such as England, Australia, USA), where wills are usually drawn up upon reaching the age of adulthood or in a short period after it (in the first part of life), in Moldova, similarly as in the Russian Federation (Bevzenco *et al.,* 2018, p. 123), the drawing up of the provision for the cause of death is left to the second part of life, after the wealth has been agonized, sometimes even in the short period before death, as a rule in old age (the man is "ripe" for drawing up a will late or too late, when legal

requirements require the notary to refuse in the authentication of the will). For this reason, in the majority of cases in which a will is contested, it is alleged that the testator's consent is vitiated by a reduction in his intellectual and volitional capacity (if the notary nevertheless authenticates the will).

3. CONDITIONS FOR THE EXECUTION OF A HOLOGRAPH WILL

In substance, although the holographic will was introduced since 12.06.2003, the conditions for the execution of the holographic will were introduced by the legal framework only beginning with 01.03.2019. Until that date, in order to execute a holographic will it was sufficient to comply with the conditions of its validity, without the need to apply additional procedures. At present, the procedures introduced aim to check the validity and effectiveness of the will after it has been drawn up (after the death of the person who drew it up), so that all the substantive and formal conditions of the will are respected before it is executed.

The legal relationships are regulated by art. 2225 CC RM and art. 75-78 of Law No. 246/2018 RM. The solutions offered by these normative acts are different, as is the terminology used. Thus, the RM CC stipulates that the holograph will (and not the envelope with the holograph will) is opened and its endorsement for non-modification is required. This Code does not lay down rules describing the opening procedure, but only refers to a special law. At the same time, RM Law No. 246/2018, being a special law, provides that before being executed, the holographic will must be endorsed for non- modification and validated, and the procedure for opening the holographic will is not mentioned either, only the procedure for opening the envelope with the holographic will is regulated, if it is kept in an envelope and presented to the notary in this way.

This procedure does not apply to oral wills. At the same time, if the holograph will has not been kept on paper, the notarial procedure cannot be applied either, but only the judicial procedure. Below, we will try to determine the cases and the general manner of fulfillment of these procedures, based on the premise that the rules of the Law No. 246/2018 of the Republic of Moldova prevail, being a special law for these legal relations.

3.1 Notarial procedure for opening the holograph will envelope

This procedure only applies if the holograph will is kept by the notary. If we exclude authentic wills (which are not kept in envelopes), the following can be kept by the notary: mystical wills (drawn up between 12.06.2003-28.02.2019), holograph wills (drawn up between 12.06.2003-present), privileged wills (drawn up between 01.03.2019-present). The legislation does not contain an obligation to keep holograph wills, with the exception of privileged wills.

The competence to open the envelope belongs to the notary to whom the holograph will has been transmitted for safekeeping. The envelope is opened

only after the death of the testator, within 30 working days from the date of the request. At the same time, if the will has been kept for 20 years, the notary is obliged to order, ex officio, investigations to establish whether the testator is still alive (art. 2238 CC RM). If the result of these investigations does not show that the testator is still alive, the notary shall proceed to open the will.

A minutes shall be drawn up on the opening of the envelope, in the compulsory presence of two witnesses and, where appropriate, of the legal heirs of the class to be called to the succession in the absence of this will, as well as of the persons justifying his legitimate interest. It is, after all, complicated to comply with this procedure without carrying out the investigation with a view to establishing the circle of heirs called to the succession. Respectively, for this purpose, the notary shall verify the fact of opening the succession procedure after the death of the testator, as well as the fact of the testator's death, and in case the succession procedure is not opened - to propose the opening of the succession procedure in order to minimize the expenses for the probate of the succession rights and to simplify the subsequent procedures of the endorsement for non-modification and validation of the holograph will. Taking into account the provisions of art. 70 para. (4) of RM Law no. 246/2018, the notary is entitled to open the probate proceedings also ex officio, if: he will ascertain the death of the testator and the absence of an opened notarial probate proceedings.

The law does not specify the content of the minutes, i.e. I consider that the minutes should describe the process of opening the envelopes and ascertaining their material state, as well as the contents of the envelopes. After the envelope has been opened, a copy of the record together with the envelopes and the holograph will (the contents of the envelopes) is kept by the notary.

At the same time, Art. (5) of RM Law no. 246 of 15.11.2018, provides that *A copy of the minutes, a certified copy of the holograph will and the authentication stamp affixed on the envelope, after the endorsement for non-modification, shall be issued on their own expense to the interested parties*. It should be noted that neither the procedure for submitting the holographic will for safekeeping nor the procedure for opening the envelope requires the application of the authentication stamp on the envelope. The application of the authentication endorsement on the envelope was provided by law for the mystical will, according to art. 1458 of the CC RM in its initial wording.

As a result of this procedure, the contents of the envelope (and of the will, if it will be kept in this envelope) and, where applicable, the details of the heirs and other persons indicated in the will found in the envelope (legatees, executors, etc.) become known.

3.2 The notarial procedure of endorsement for non-modification of holograph wills

The first mandatory requirement for executing a holograph will is the endorsement for non-modification procedure. In this case, the competence of endorsement for non-modification goes to the first notified notary, even if the succession procedure is opened by another notary. As a result, there are two distinct situations:

a) when the holograph will has been kept by the notary who opened the envelope following the previous procedure - then the endorsement for non-modification procedure can only be carried out by him;

b) when the holograph will has not been ikept by the notary - then the procedure of endorsement for non-modification may be carried out by the first notary notified by the person who has presented this will and requested this procedure.

The procedure may be brought by any person, even if he or she is a stranger (a neighbor, friend, executor, etc.) and is not a successor by operation of law or will, including this holograph will. In order to ensure that this procedure is carried out correctly, the notary must first familiarize himself with the contents of the will. On the basis of the contents of the will, the notary will be able to identify the persons to be summoned for the drawing up of the minutes, including, if necessary, the translator, or will propose to the heir that he should arrange for the presence of the translator authorized for the language in which the holograph will was drawn up. The endorsement for non-modification is recorded in a minutes (this is called either "on endorsement for non-modification" or "statement of the material status of the will" - the law does not use a single terminology in this respect), in the mandatory presence of two witnesses and, where appropriate, the heirs and persons justifying his legitimate interest. There is no specification as to which "heirs" are meant: either heirs under this will, or successors under the law who are removed by this will, or both these categories. As with the procedure for opening the envelope, there is difficulty in determining the circle of heirs called upon to notify/summon them.

The law shall provide the data to be compulsorily described in the minutes: the identification data of those present, the particularities of the material on which the will is written, the number of pages of the will, the writing instrument, the color of the pen, etc. If the holograph will is drawn up in a foreign language, then the translation into Romanian shall be transcribed in the minutes. One copy of the minutes together with the holograph will: i) shall be filed in the succession file (if the succession proceedings are opened with the same notary); ii) shall be transmitted to the notary who is conducting the succession proceedings (if the succession proceedings are opened with a different notary); or iii) shall be kept in the archives of the notary who endorsed for non-modification (if the

succession proceedings have not been opened until the opening of these proceedings).

The purpose of this procedure is to ascertain the material state of the contents of the holograph will in order to avoid disputes related to the existence/absence of this document, as well as to ensure the publicity of the existence of the will. However, endorsement for non-modification may be carried out by any notary, including a notary who is not involved in the probate procedure in question. The details of the holograph will endorsed for non-modification are recorded in the register of succession files and wills. This step does not give additional legal force to the will, but publicizes the existence of a will, which will be taken into account when the probate of the estate is being debated (even if this will is not subsequently validated).

Notarial practice has not revealed any legislative gaps for this procedure. Although the law prohibits the legalization of a copy of a document issued by a natural person (Art. 46 para. (2) of RM Law no. 246/2018), however, taking into account express provisions, a copy of a holograph will can be notarized only after endorsement for non-modification.

The law does not stipulate a time limit for the fulfillment of this procedure, but taking into account the obligation to notify the participants, we consider that the time limit applied by the notary must be reasonable. At the same time, the time difference between the date of submission of the holograph will for endorsement for non-modification and the date of the minutes creates additional risks of deterioration of this will: either for the applicant (if the notary does not demand its surrender or the applicant refuses to surrender it, as the law does not provide for this obligation) or for the notary (if the notary does not want to take this risk and does not take over the will). In this case, it would be more relevant to split this procedure in two, similar as in Romania.

Under Romanian law (Parliament of Romania, 1995) there are two separate procedures:

❖ procedure of endorsement for non-modification – the purpose of which is to ascertain the existence in itself of a will ad instrumentum and the form in which it is displayed. This procedure takes the form of an endorsed for non-modification and the notary's signature and seal. No minutes is drawn up, since it is basically a similar procedure to the appointment of a date. As a result of this procedure, the will does not become effective, but it becomes public (the existence of a will is certain and its content becomes known) and any interested person can obtain a certified copy of it from the notary. If the will is drawn up in a foreign language, it must be translated into Romanian at this stage. Even if, at this stage, the notary will notice that the will does not correspond to the conditions of substance or form of the holograph will - there is no ground for refusal in the fulfillment of this procedure, although the notary will notify the successor about the fact detected and possible legal effects, in particular the

subsequent refusal to validate this will (Negrilă, 2013, pp. 120-128);

❖ the ascertainment of the material state of the holograph will - the purpose of which is to provide a detailed description of the material state of the will, including the reproduction of the text of the will. As a rule, this is carried out immediately after endorsement for non-modification (if it is carried out at the notary who is competent to open the succession proceedings), in the presence of the person who has submitted the will. This procedure is carried out by the notary who is in charge of the succession proceedings, which is why, before drawing up a minutes, the notary must check whether succession proceedings have been opened and, if not, whether to open them on the basis of the application of the person entitled. In practice, the notary may draw up a minutes on the material state of the holograph will on the day of endorsement for non-modification (thus, the will will be described in the state in which it was found and endorsed for non-modification, without there being a time gap between finding the will and ascertaining its state, which may constitute some possible assumptions of possible modification of its contents by the applicant or the notary, as well as will exclude a possible deterioration or loss/destruction of the will). At the same time, there is no mistake, if the notary will postpone this procedure, notifying the heirs and other interested persons, thus ensuring their possibility to be present at the drawing up of the minutes in question. Even in this case, if the notary will notice that the will does not comply with the substantive and/or formal conditions of validity, he may proceed similarly as in the case of endorsement for non-modification (Negrilă, 2013, pp. 128-136).

In conclusion, we note that in Romania, where the authors of these amendments were inspired by, the law is clearer and more detailed, unlike the legal framework in Moldova, which needs to exclude contradictions and uncertainties, as well as to remove the gaps that currently exist.

3.3 Notarial procedure for validation of holograph wills

After endorsement for non-modification, before being executed, the holograph will shall be validated under the conditions of Article 78 of the Law of RM no. 246/2018. The purpose of the probate procedure is to check that the conditions of substantive and formal form required by law for a holograph will are met.

Unlike the procedures described above, the validation procedure falls within the competence of the notary, who is in charge of the succession proceedings. In other words, if the will has been endorsed for non-modification by another notary, it must be forwarded to the competent notary in order to complete this procedure. The law does not contain a special transmission procedure, i.e. the fact of transmission can be confirmed by a deed of handing over and receipt, and the relevant documents (minutes of endorsement for non-modification, etc.) are also transmitted, without the notary having to draw up any notarial deeds. In the

absence of an express provision, we note that this procedure may be requested by any person presenting a holograph will (if this document is not in the possession of the notary requested).

In view of the absence of a specific time limit, as in the case of endorsement for non-modification, the validation procedure must be carried out within a reasonable time limit, calculated taking into account the need to summons the person concerned.

The validation procedure is carried out without the compulsory presence of witnesses. However, it is not clear from the legal framework who is to be invited and how often. Thus, first of all, the law obliges the notary to notify the legal heirs of the class called to the succession (since it is not validated, the holograph will remains an ineffective legal act).

Although the next action of the notary is described in case these heirs do not appear (the notary orders a handwriting expert's report), nevertheless, in case of the absence of the called heirs or their non-appearance, the law relates the obligation to notify the legal heirs of the class called to the succession in the established order (i.e. next class), and in their absence - the competent territorial tax authority (which has the capacity both as legal heir and as collector of the vacant estate), at the request of the heirs designated by this holograph will. It follows from this provision that, in addition to the legal heirs nominated, the heirs indicated in the holograph will must also be called upon from the outset.

If all the cited heirs appear at the validation procedure and recognize that the will is written, dated and signed by the testator - the notary will draw up a minutes of validation of the holograph will. In practice, the representative of the State Tax Service does not know the testator's handwriting, which is why he can never confirm the handwriting on the will, which does not allow the holograph will to be validated. In the same way, if there are legal heirs - there has not been a single case when the legal heirs have recognized the testator's handwriting (either it does not belong to the testator or they do not know the handwriting). In any other situation (someone did not show up, someone did not know the handwriting or challenges the handwriting, or there are no legal heirs), the notary is obliged to appoint a graphoscopic expertise. In order to appoint an expertise, the notary has to be presented proof of the handwriting. Respectively, if the testamentary heir is a stranger (not a relative or spouse) - then this person has no legal powers to gather evidence of handwriting. The notary is also not empowered to demand samples of the testator's handwriting (affixed to official documents) from competent authorities.

This can lead to the following situations:

a) no sample of the testator's handwriting is presented – the succession proceedings are suspended and the parties are referred to the court. *De jure*, the law does not provide for the suspension of succession proceedings (as this may affect the rights of other persons), i.e. the notary will only issue the conclusion

suspending the issuance of the certificate of heir, pursuant to art. 73 of RM Law No 246/2018;

b) writing samples are submitted in the wrong format. Sometimes the notary is presented with copies (instead of originals) – which does not allow the expert to carry out the expertise. In this case, I consider that the notary should proceed similarly to the situation described in a). At the heir's insistence, the notary can appoint an expertise, explaining the consequences – he will incur expenses for the expertise, the expertise report will not be drawn up and it will take time for all these procedures;

c) samples of writing on unofficial documents are presented.

And if the heir brings certain documents claimed to have been made by the testator - the notary has no possibility to confirm that these private documents were made by the testator and not by another person, which could include the person who made this will in order to forge it. In the latter case, the expert will say that the will was drawn up by the testator (because the same person wrote the will), even though this is not the truth. To avoid any risks for the notary, we can highlight two situations:

c1) when all persons recognize that the informal (private) act was drawn up by the testator.

The only effective way to do this is for all the persons involved to recognize this writing as a true sample for expertise – which again creates difficulties (or perhaps the problem that prompted the need for the expertise was that the writing was not known). If the person declares that he or she does not know the handwriting on the will, then it is not possible for that person to recognize that handwriting on any other document. As a result, the notary has to take the risk of presenting false documents with the private signature of the testator (not being able to verify this handwriting).

c2) when at least one person challenges or does not recognize that the unofficial act was drawn up by the testator.

The question arises in the present case – who is competent to establish a definite sample for comparison when appointing expertise? The notary has no special training in this part. As a consequence, if there is no certain handwriting sample admitted/recognized by all persons involved, then the notary can follow the way described in a) or, if the heirs insist on an expertise – he can appoint the expertise explaining all possible consequences, and after receiving the expertise report he will settle the question of the relevance and admissibility of the presented evidence (samples) when continuing the validation procedure.

d) samples of writing on official documents are presented.

In this case the appointment of expertise does not create difficulties.

It should be noted that we are in the technological century, when most of the processes do not require the use of holographic writing (using the means of technography), as well as without the application of the holographic signature

(using electronic signature, applying the scanned image of the holographic signature, applying the signature with the use of special devices). These processes diminish the possibility to identify true personal records of the testator for effective appointment of expertise.

If the heir disagrees with the results of the expertise – a repeat expertise can be requested.

If at least one heir or legatee disagrees with the results of the repeated expertise, the issuance of the certificate of inheritance is suspended and the parties are referred to court. At the same time, in parallel with this legal provision, there is another solution offered by the law – the notary will validate the will on the basis of the graphoscopic expertise report confirming the testator's handwriting in the presence of the testamentary heir only.

The law does not regulate the judicial procedure applicable to this case – is it a special procedure or a contentious procedure? In view of the purpose of this procedure (verification of compliance with the substantive and formal conditions of the holograph will), we are in the presence of a special procedure. However, the civil procedure has not undergone any changes for this purpose, which is why these disputes are examined in contentious proceedings, which are regarded as a dispute between heirs concerning the distribution (partition) of the estate.

In a case from the author's practice (succession case no. 653545/137/2020), the testamentary heir filed an application for validation of the holograph will in court and died (the succession proceedings were not opened by his heirs). The court returned the submitted application (Chisinau District Court, 2022), considering that in this case there is a legal dispute because the parties do not have a single position on the validity of the holographic will. In order to legalize the succession rights, being unable to apply the special procedure, the legal heirs had to file an action against the deceased testamentary heir and the notary who is conducting the succession proceedings, requesting the declaration of nullity of the holograph will (although this will is an ineffective act because it was not validated). The civil suit is not finalized (Chisinau District Court, 2024). Not having no interest, the notary will lose this lawsuit, which will unreasonably base the legal costs on the party who lost the lawsuit, i.e. the notary.

In another succession proceedings (succession file no. 719287/72/2023), no legal heirs were identified at the validation and the State Tax Service was invited. Graphoscopic expertise was called. However, the law does not provide for the State Tax Service to be summoned in order to inform it of the results of the expertise, nor does it provide for the right of this body to challenge (or disagree with) the results of the expertise. As a consequence, the logic of inviting the public authority at the initial stage and not notifying it of the results of the expertise in order to be in a position to influence the final solution in the validation process is not clear?

After all, the entire validation procedure described does not result in invalidation, but only in suspension of the issue of the certificate of inheritance. In this respect, it is not clear procedurally with which notarial act this procedure is to end in the event of a negative or impossible result? Is a minutes of invalidation to be drawn up (similar to the legal framework in Romania), or is a decision refusing validation to be issued, or is a court ruling on the validity of the holograph will sufficient? This issue is to be reflected in the legal rules, and until these solutions are introduced, I consider that the notary cannot draw up a notarial act in addition to this procedure, apart from the conclusion suspending the issue of the certificate of inheritance.

The biggest legislative gaps and contradictory rules have been found in the procedure for validating holograph wills, which in most cases leads the parties to go to court to settle the fate of the estate. The validation procedure in Romania is similar to the one in Moldova, although it is more detailed and clearer in the solutions offered to the notary.

4. CONCLUSIONS

Every development is normal, but not every change brings benefits. In this context, the permanent review of the forms of wills in the Republic of Moldova (and the form is in this case the condition *ad solemnitatem*), on the one hand, provides more options for the person to have the possibility to dispose *mortis causa*, and, on the other hand, creates more difficulties in establishing the legality, validity and execution of such testamentary dispositions. Notarial practice shows that the legal framework governing the enforcement of holographic wills contains several contradictions and gaps, being at the same time incoherent and inconsistent. The extrajudicial preventive procedure, in which the notary is involved, becomes ineffective and the heirs are referred to the courts to settle the fate of the holograph will and, ultimately, of the estate.

The existence of the permission to set out the will for the cause of death in an oral form, provided by international treaties, has not found express regulation in procedural legislation. If a holograph will has to be endorsed for non-modification and validated by a notary in order to be executed, then the law does not contain any additional procedures for attributing legal force to an oral will. Likewise, the law does not contain any express provisions, which would set out form requirements for such a will, in order to identify the cases in which this form is applicable and produces legal effects, as well as in order to exclude/minimize cases of forgery of such wills.

All the aforementioned factors, when considered cumulatively, destabilize the security of civil transactions. At any time during the prescription period, it becomes possible to cancel the certificate of inheritance issued by the notary based on a will or by law (without knowing the existence of a privileged or oral

will) and to dispossess the heir, as well as, subsequently, the acquirer of a property from the inheritance estate.

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THE FORMS OF EXPRESSING THE INDIVIDUAL'S LAST CONSENT IN THE REPUBLIC OF MOLDOVA

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Abstract
The new version of the Civil code of the Republic of Moldova starting March 1st, 2019, in the part of inheritance denotes a complete revision of the transfer of rights of the natural person for the cause of death. At the same time, prima facie the legislators in the part related to wills intervention is not so obvious. In this research, it will be analyzed the forms by which a human being can dispose mortis causa of his partimony, as well as the correlation of the institution of inheritance with some new legal institutions that appeared in the Civil code (eg. fiducia). It will be analyzed the role of the will for contemporary civil society, in the light of the recent challenges faced by the Republic of Moldova as well as the effectiveness of using this legal instrument to achieve the scope pursued by a person. Finally, after a comparison with legal framwork from other states from which the authors of the „modernized" civil code were inspired, the author will try to come up with solutions that could facilitate the achievement of the aims pursued by the society, also will be tried to debureaucratize the existing notary procedure.
Keywords: *notarial form; legal act; will; joint will; agreement as to succession.*
JEL Classification: K11, K12, K15, K36.

1. EVOLUTION OF THE CONCEPT OF WILL IN THE REPUBLIC OF MOLDOVA (RM)

A simple glance at Roman private law reveals the importance of the testator's will. Being derived from family relationships, inheritance relationships were intended to identify a person who would replace de cuius in relations with the family, the state, society, etc., and continue his role. With the introducing of the will, the State gave the testator the possibility of identifying a person other than the one expressly provided for by law (at the beginning, the testator was given the right to nominate as heir only one of his descendants), who would be his successor. The will was not regarded as an act of alienation of property by reason of death, but of designation of another person who would carry out the testator's duties after his death. The will was treated as a lawful fixation of the person's intention, drawn up in solemn form with a purpose to grant power after his death. The designation of the heir was the essential testamentary provision

without which the will was not valid. In this context, we note the *ad instrumentum* character of the will (Dojdev, 2000, pp. 646-647).

In ancient Romanian law, a person's will for the cause of death could be expressed in two forms of manifestation: the death language and the diata. In the form of death language, the will was verbally expounded by the testator in front of a person belonging to the clergy - an "ecclesiastical face" - whose task was to preserve the testator's will and to make this will known to the heirs (Negrilă, 2013, pp. 19-21). Probably, the name of the death language came about because the testator communicated his last will on the last communion and the celebration of the sacrament of the Holy Mass (Vasilescu, 2016, p. 77). Unlike the death language, the will in the form of diata was to be drawn up in written form, dated and signed (or the testator's handprint applied) in the presence of several witnesses. Although we now know of holographic wills, unlike the last mentioned, to be valid the will could have been written not only by the testator but also by another person. To protect against future litigations, usually the relatives disinherited by this will were called as witnesses (Negrilă, 2013, pp. 19-21).

In the history of Russia, information about the will ("official soulful act" - "duhovnaia gramota", although at the beginning it was called "official spiritual act" - "dushevnaia gramota") was known already in the 10th century. The purpose of this act was to fulfill a moral obligation - before death to take care of one's own soul, liquidating all earthly affairs. Throughout history, the content of wills has varied, and we are mostly familiar with wills which, in addition to designating the heir, had a political content of guidance for the successors in the political sphere (various indications on the completion of political affairs in relation to other states, begun by the testator), the administration of property, relations with partners (instructions to delegate powers of attorney to certain persons for unfinished actions), etc., which were drawn up by high-ranking dignitaries. In view of the legal limits on the possibility of owning property, wills mainly contained provisions that were not directly related to the transfer of property but contained non-patrimonial advice. The form likewise was a solemn one, being drawn up in the presence of witnesses by state or ecclesiastical officials, with the application of their seal (Levushkin, 2018, pp. 9-14).

Although the will is an old legal institution that has been used for hundreds of years, in recent years this institution has undergone some adjustments in the Moldovan legislation.

1.1 Will according to the Civil Code 1964

According to Article 568 of the Civil Code of the Moldovian S.S.S.R. of 26.12.1964 (Parliament R.S.S. Moldavian, 1964), *any citizen may bequeath all or part of his or her property (including ordinary household furnishings and household goods) to one or more persons, both to those who are part of the*

circle of legal heirs and to those who are not, as well as to the State or to various state, cooperative and public organizations.

From this it follows that the will was used as a legal instrument to transmit only the estate of a natural person by cause of death, being an alternative to legal succession (*ab intestat*). At the same time, the will was regarded as an act, the subject of which was not only the estate, but also certain assets falling within that estate. Therefore, any testamentary provision, whereby the will left only a certain asset out of the entire patrimony, was interpreted as designating the heir to the inheritance share equal to the value of that asset.

If a testamentary disposition was drawn up, in the notarial succession procedure to legalize the succession rights, there was no need to calculate the express size of the heir's share of the entire inheritance, which made this procedure less bureaucratic and reduced the costs for notarial registration. Other legal acts of disposition *mortis causa* were not permitted by law.

1.2 Will according to the Civil Code 2002 in the original version

On 12.06.2003 the Civil Code of the Republic of Moldova (CC RM) no. 1107 of 06.06.2002 (Parliament RM, 2002) entered into force. According to Art. 1449 of the Civil Code (in its original wording), *a will is a solemn, unilateral, revocable and personal legal act by which the testator disposes of all or part of his property free of charge, for the moment of his death*.

In fact, no radical reforms have been observed in the legal nature of wills, although the regulation has become much more detailed in this area. At the same time, a difference between the heir and the legatee has been uncertainly outlined. Thus, in contrast to the previous legal framework, according to art. 1486 of the Civil Code of the Republic of Moldova (in its original wording), *the testator may grant by will to a person patrimonial advantages (legatee) without designating him as heir*, and one of the objects of these patrimonial advantages in art. 1487 also related to the transfer of a property from the estate of the heir to the legatee.

Given the lack of express clarity, notarial and judicial practice in the interpretation of wills has not changed. Thus, the testation of an asset of the estate has been and still is qualified as the designation of the heir with the inheritance share in the amount constituting the value of the property tested.

At the same time, there was a change in the legislator's approach to the role of the will - the regulation of testamentary succession was placed before the rules on legal succession, unlike in previous legislation. With this step, the Parliament emphasized the priority of testamentary provisions over the provisions of legal succession in matters of inheritance. The will was regarded as a civil legal act in the sense of *negocium*, and the legal framework governing unilateral civil legal acts was developed and detailed at the same time as the legal framework in the field of inheritance.

At the same time, without expressly affecting the field of inheritance, the regulation of other institutions related to wills has undergone changes. In this context, the scope of the donation (which, in fact, does not contain an express rule that it applies only inter vivos with immediate execution, the promise of donation being also introduced) has been broadened. A little earlier, the Family Code of the RM provided for the possibility to conclude marriage contracts, the content of which, with the entry into force of the CC of the RM in its original wording, became less limited.

1.3 Will according to the Civil Code 2002 in its current wording

By Law No. 133/2018 (Parliament RM, 2018), the inheritance regulation in the Civil Code of the Republic of Moldova was replaced by a different concept. It should be noted that, similar as in the Soviet period, testamentary inheritance was again placed after legal inheritance, decreasing the role of the will in the distribution of the estate after the death of the testator. In its current wording, art. 2191 of the Civil Code of the Republic of Moldova states that *a will is a unilateral, personal and revocable act by which a person, called testator, disposes, in one of the forms required by law, for the time when he will no longer be alive*.

Ab initio, some of the legal characteristics of the will expressly indicated in its definition have been modified, namely:

- solemn nature – whereas the form requirement was maintained, under penalty of nullity - art. 2216 of the Civil Code of the RM, although the number of varieties of this form was increased;
- free of charge – given the fact that the possibility of drawing up conditional wills was introduced, where the condition may also be constituted in favor of the testator (art. 2205-2207 of the Civil Code of the RM). The widest spectrum of application of conditions (either under suspensive or resolutory condition) was allowed. At the same time, the law does not limit the circle of persons who may be beneficiaries of the conditional testamentary disposition, for which reason, we can deduce that this quality may be attributed to a third party as well as to the testator. In this connection, it should be noted that a testamentary disposition (including the testator's designation) may be made subject to a suspensive condition in favor of the testator (e.g., to make a payment to the testator, to provide for the testator's maintenance). Such an approach creates uncertainty in the correct legal characterization of legal transactions expressly named by law. Thus, e.g., if a contract for the sale of immovable property will condition the acquisition of ownership of the property by the buyer after full payment of the price during the seller's lifetime and at the time of the seller's death - then is this contract to be regarded as a sale or a testamentary disposition? Basically, the law allows both operations to be regulated in such a way, except for one fact - a will is a unilateral act, while sale-purchase is a

bilateral legal act (contract). In the specialized literature we observe a diversified attitude towards the institution of conditional wills, whether to be allowed by law, having its origin in Roman private law (Mihailova, 2016, pp. 37-44; Mitrofanova, 2019, pp. 103-108), or that it is to be expressly prohibited by law, because it entails the restriction of fundamental human rights (Ataev, 2013, pp. 20-22). Testamentary provisions subject to conditions are provided for in the legislation of other countries, such as France, Estonia, Ukraine, Spain, but their scope of application is expressly limited by law, which is not observed in the legislation of the Republic of Moldova, with some insignificant exceptions;

- limitation to goods – respectively, it may also contain any other clauses (e.g. advice, recommendations, secrets, curse, declarations);
- nature of legal act – being a simple declaration (deed) made by the testator (although, if it contains a statement of a legal act, it must comply with the conditions of validity).

In Romanian law (Parliament Romanian, 2009), which was inspired by French law, the will is regarded only as a support for patrimonial dispositions (legatee) and non-patrimonial dispositions. The legatee, being of a patrimonial nature, can be universal (designating the heir to the entire estate), with universal title (designating the heir to part of the estate), or singular naming (the legatee to a property) (Ionaș, 2020, pp. 77-79). The current definition of will in art. 1034 of the Civil Code of Romania (as being the *unilateral, personal and revocable act, by which a person, called testator, disposes, in one of the forms required by law, for the time when he will no longer be alive*) has excluded any doubts in delimiting the will from the legatee, recognizing that the legatee contained in the will represents a liberality, and the will is considered as a complex act, which may contain both legatees and any other testamentary provisions, which may be subject to different legal regimes, depending on the specifics of each provision (Negrilă, 2013, pp. 26-28).

Although the definition of the will in the CC of the RM was taken from the Romanian legislation, the detailed regulation of the will, as well as of the related legal institutions (such as liberalities, including donations) did not follow the Romanian law, being inspired by the German legislation (although the provisions of the legislation of the Canadian province of Quebec were also taken), which is based on another concept of legal acts *mortis causa*, which can be included not only in unilateral legal acts, but also in contracts and joint wills. Possibly, the desire to omit the reference to other legal institutions that can ground the succession vocation led the Moldovan legislator to take over only the definition of will from the Romanian legislation. This position destroys, as we will see *infra*, the classical system of legal acts used in the codified law.

As a consequence, the will change its role from *negocium* to *instrumentum*. For this reason, it has become only a support for the conclusion of provisions of a patrimonial nature (in which it acquires the legal nature of a civil legal act), as

well as for the expression of recommendations (opinions, thoughts, etc.) of a non-patrimonial nature (which no longer represent a civil legal act *stricto sensu*). According to some scholars, the will is always to be considered as a complex legal act (i.e., being considered both in the sense of *negocium* and in the sense of *instrumentum*), which includes both patrimonial and non-patrimonial testamentary provisions, i.e., it contains several provisions of different legal nature, independently examined in terms of legal regime and legal effects produced (Ionaș, 2020, pp. 24-26).

The change in the concept of will allows us to conclude that the support for testamentary dispositions may constitute not only a will, but also another legal act, since the RM Civil Code does not contain the limitations, which are contained in the Civil Code of Romania (art. 984 para. (2), etc.) In this way, we come to the above-mentioned statement that a provision for the cause of death may be inserted in any legal act, including a contract, if there is no express rule prohibiting such provision or when this *mortis causa* condition is foreign to the legal nature of this type of legal act.

2. LEGAL ACT OF DISPOSITION *MORTIS CAUSA* IN THE REPUBLIC OF MOLDOVA

Prima facie, the modification of the concept of the will and of the forms permitted by law in which this legal act may be concluded did not introduce any changes of concept in the part relating to the instruments given to a person to dispose of the cause of death. At the same time, no special regulations (of legal qualification) were introduced in other norms, which would expressly allow the drawing up of legal acts of disposition with conditional effects from the moment of the death of the disposer.

At the same time, a system analysis presented below allows us to reach some unexpected results and, possibly, which were not even promoted by the legislator, considering that they were not described in the informative note to the draft Law of the Republic of Moldova no. 133/2018 (Parliament of RM, 2018).

2.1 Condition *mortis causa* affecting the effectiveness of the civil legal act

Starting with 01.03.2019, in the Republic of Moldova was introduced the institution of effectiveness of the legal act, which encompassed legal acts affected by modalities (condition, term), as well as a part of legal acts that were previously null. Although no legal definition of an effective legal act has been introduced, art. 357 para. (1) of the CC RM we find a specification, which allows us to identify the ineffective legal act, namely: *if, according to the law, the legal act, without being null or voidable, does not produce, in whole or in part, its legal effects, it is, in this part, ineffective.*

We will not outline all the cases when this institution intervenes, especially since the law is also contradictory in some places, only the qualification of the

will as an ineffective legal act, the effectiveness of which occurs with the death of the testator, deserves special attention. Death is treated differently in legal literature. Thus, some scholars consider that death belongs to the category of suspensive conditions, while others assign death to the category of terms, because it is known with certainty that man does not live forever, i.e. it is certain that he will die, although it is not known when (the uncertain nature of the realization is not enough to be considered a condition). After all, both in one hypothesis (as a suspensive condition) and in the other hypothesis (suspensive term) we are in the presence of an ineffective act (until the ground of ineffectiveness - the testator's life) is removed.

The effectiveness of legal acts *mortis causa* originates from an assumed presumption that the testator's consent exposed during his lifetime will remain the same after his death (Dojdev, 2000, p. 167). Consequently, the will is a validly concluded legal act (the requirements as to its form and other conditions for its validity will be verified on the day of its preparation), although its legal effects will be operative upon the death of the testator. In the opinion of József Kocsis, considering that it does not produce legal effects until the death of the author of the will, the will is to be regarded as a completed fact, not existing as an act (Vasilescu, 2016, p. 80).

According to Negrilă D. (2013, pp. 40-41), the *mortis causa* character of the will does not allow the testator to condition the person's call to testamentary inheritance to the performance of certain actions until the testator's death and in his favor. This situation is described by the author as an agreement relating to an inheritance not yet opened, in which one party promises to transfer his rights (by cause of death) in exchange for a consideration, which the legatee is to realize during the testator's lifetime. Taking into account the fact that since March 1, 2019 in Moldova it is allowed to draw up conditional wills, I consider that there is no impediment to include a similar condition in the content of the will. Taking into consideration the revocable and unilateral nature of the will, to provide more guarantees for the beneficiary-successor it would be more appropriate to use the form of a contract.

2.2 Conditional property (under condition of *mortis causa*)

Another new legal institution implemented since March 01, 2019 is conditional property or the conditional right of the acquirer (not only the acquisition of property rights can be made conditional, but also any other right).

On the one hand, art. 512 CC RM only tells us about suspensive conditions that may affect the acquisition of property rights. On the other hand, where the right is subject to registration in a public register, article 443 of the RM CC regulates the manner of cancellation of a right acquired under both suspensive and resolutive conditions. The possibility of making a right subject to a suspensive or resolutory condition is also supported by the provisions of article

432 of the RM CC, which, *inter alia*, states that the acquisition of a right subject to a suspensive or resolutory condition is subject to provisional registration.

In specialized literature, conditional property is described as a way of private property right, which consists in the exercise of the attributes of this right by two persons, simultaneously and, at the same time, differentiated (Stoica, 2017, p. 273). In the given case, each of these persons has a right: for one of them this right is a legal reality, which is not a complete one; and for the other - it is a virtuality, which can become a legal reality in certain circumstances (and not a mere unfounded hope). After all, being the holder of the right, each of these persons may conclude legal acts in respect of the right held, which will preserve its legal nature. In this case, the rules of an ineffective legal act are applied, based on the principle nominalized in art. 358 para. (1) CC RM*: No one may transfer or constitute more rights than he has himself*. (Latin - *nemo plus iuris ad allium transfere potest, quam ipse habet*). Even art. 433 CC RM regulates the manner of registration of such deeds, concluded by any of the registered holders. Conditional property can be resolvable (under suspensive or resolutory condition) or cancelable (affected by a ground of relative nullity) (Stoica, 2017, pp. 273-276; Jora, 2019p, p. 167-173).

It does not matter which of the holders of the right concludes the legal act, because he passes on the right as he holds it. For this reason, the subject-matter of this legal act will be an uncertain right and dependent on the same affectation, and the dissolution of the right of the holder will dissolve all legal acts concluded by him subsequently. An example regulated in detail is the sale-purchase with reservation of ownership (art. art. 1191-1194 CC RM) - a legal construction, where the contract itself is an effective legal act (because it produces legal effects from the moment of conclusion) and only the moment of acquisition of the property right is conditional on the full payment of the price, in other words, there is a time difference between the moment of handing over the property and the moment of acquiring the property right over this property (Lanina, 2014, pp. 55-74).

If we attribute death to a condition, and a will to a legal act placed under that condition, we observe that the heir or legatee designated by the will acquires a right conditioned by the fact of the testator's death. Applying the provisions on conditional property, we may conclude that the heir or legatee may in fact dispose of the right to which he is entitled under the will. *De jure*, art. 1006 CC RM (Pistriuga, 2016, pp. 45-46) strikes with absolute nullity any contract regarding the inheritance of a living person, except for the one, concluded between the future legal heirs on the legal share-share. As a result, neither the testamentary heir nor the legatee may conclude legal acts the subject matter of which is an unopened inheritance.

The RM CC does not attribute to the will the character of a single act that can be concluded under *mortis causa*. Therefore, we do not identify any legal

prohibition to a legal construction, which, based on the principle of freedom of contract and the general rules on conditional legal acts, will not be able to condition the acquisition/loss of a right on condition of the death of the transferor or another person. Of course, only the rules specific to a named contract (an expressly regulated legal construction) can limit the inclusion of such a condition. The right of ownership, being a type of subjective right, may also be subject to a suspensive or resolutory condition linked to the death of the disposing party in any legal act of disposition.

2.3 Approach to transmission of *mortis causa*

Traditionally, from a property law perspective, a property right can be acquired and can be lost. At the same time, from the perspective of the law of obligations, a right in rem is transferred from one person to another person.

Without going into details, we can distinguish 2 situations:

a) the right arising for the acquirer previously belonged to another person (the alienor) and passes upon the occurrence of the condition; and

b) the acquisition of the right in the acquirer is not subject to any condition, but the exercise of the attributes is limited by the existence of rights in the alienor, which cease upon the death of the alienor.

This approach, together with the principle of freedom of contract, allows us to use legal constructions that establish a person's right to both a legal act that transfers rights and a legal act that is based on the loss/termination of a right.

In this case, the will is a legal act through which the successor's right to accept the inheritance arises, subject to the testator's death, and the above-mentioned processes are based on situation a). Now, upon the death of the alien (testator), on the basis of his disposition (one consent) together with the acceptance of the inheritance by the successor (second consent) in connection with the occurrence of the condition that makes the will effective (the testator's death), the transfer of the testator's rights and obligations (the estate) to his heirs takes place, on the date of the opening of the inheritance.

At the same time, the right of ownership may be acquired not only at the time of the conclusion of the legal act, but also at a future time - upon fulfillment of a condition, the expiry of a term, etc. In this case, we can see that the legal construction is basically allowed, according to which the right of the acquirer arises during the lifetime of the alienator, and the alienator reserves a conditional right, which ceases upon the death of the latter and does not pass through inheritance. As a consequence, in this case we are not dealing with a traditional legal act mortis causa (giving rise to a right), since it is not dependent on the time of the alienator's death - and the legal act itself is effective from the outset; but in the presence of a right dependent on the time of the death of the transferor - thus, those restrictions which condition the acquirer's right of ownership cease

with the death of the transferor (death in this case leads to the loss of a personal right by the transferor, which excludes that right from the estate).

Prima facie, any possible legal construction used for the purpose of overcoming the mandatory legal provisions concerning wills can be characterized as an abuse of rights or a legal act in breach of morality or public order. However, the introduction of the trust into the national legal framework allows it to be used in the manner described – or, the property right of the trust founder over the transferred asset can be terminated on the date of his death, and the beneficiary of the trust may acquire this right on the occurrence of the condition (death of the trust founder). At the same time, the institution of the revocable donation in the case of the donee's death was expressly introduced (in more detail - *infra)*.

Respectively, if we have at least these two examples that allow this legal construction, we can say that other legal constructions can also use similar mechanisms of transmission (loss to the alienator of the right of ownership during life with reservation of another right and certain acquisition [justification of the condition] to the acquirer of the right of ownership upon death, when the right reserved by the alienator ceases) of the right to a property, if the law does not expressly prohibit this legal act.

2.4 Legal acts of disposition having the effect of loss of the right to the property (patrimony) and its acquisition by another person

In support of the above approach, we note that a legal act may be concluded subject to a condition and/or a right may be placed subject to a condition. Thus, if the legal act is subject to a condition, then it does not produce legal effects (it is ineffective), and the occurrence of this condition will give rise to a legal relationship between the parties. At the same time, if only a right is conditional and the legal act is effective, then the legal relationship already exists but is awaiting the occurrence of this condition to resolve the uncertainty as to the existence of the right. The condition "occurrence of death" may affect both a legal act and a right. This condition may be both suspensive and resolutive. This condition affects a legal act, e.g. in the case of a will - it gives rise to the right of the persons named in the will to claim the execution of the will (by accepting its effects). At the same time, this condition may also affect a property right. E.g., in the case of a contract of alienation of property subject to the condition of lifetime maintenance, the death of the beneficiary of the maintenance ceases to prohibit and encumber the property.

Without going into details on the legal institutions existing in the legislation of the Republic of Moldova, as well as without claiming the exhaustiveness of these institutions, we can point out that, in connection with the modification of the concept of some related legal institutions (ineffective legal act, conditional property, etc.), the approach to their legal nature requires a revision.

Within the annuity contract (art. 1222 CC RM) for life annuity for valuable consideration, including the contract of alienation of the property with the condition of lifetime maintenance, we note the following. These contracts are unconditional legal acts, since they give rise to rights and obligations from the moment of conclusion. However, the lender and the beneficiary of maintenance are limited (art. 1227 CC RM and art. 1217 CC RM, respectively) in the full exercise of the property right under the condition of the death of the lender (the law allows another condition – art. 1223 CC RM) or the beneficiary of maintenance. Therefore, we note that the condition "*mortis causa*" exists in these contracts, but these contracts are not attributed to the category of testamentary dispositions (although they affect the composition of the person's estate after his death).

The law contains an express prohibition in the contract of donation (art. 1198 CC RM), stating clearly that *the contract which provides for the handing over of the property after the death of the donor is null and void*. *About the will expressed by the donor, the legal provisions on wills apply*. At the same time, we note that the law allows for the separate contractual regulation of the relationship between the handing over of property and the handing over of a right in that property. According to art. 511 para. (1) CC RM, *handing over of the property means the delivery of the property to the acquirer, as well as to the carrier or post office for shipment, if it is alienated without the obligation to be transported*; and according to art. 510 para. (1) CC RM, *the right of ownership is transferred to the acquirer at the time of delivery of the movable property unless otherwise provided by law or contract*. From these provisions we can deduce the following possible types of donations:

- where the death of the alienator is a suspensive condition (Copîlov, 2019, pp. 45-49) – when the handing over of the property to the donee is made at the time of the conclusion of the contract or during the lifetime of the donor, but the ownership of the property passes to the donee upon the death of the donor. In this case, the regulations on conditional property (Art. 513 CC RM) can be applied, according to which the donee will hold a property right under the suspensive condition – the death of the donor. In Roman private law, *donatio mortis causa* has been used in cases when the donor is in a life-threatening condition, expecting death within a short period of time. Respectively, if the death did not occur within a short period, the donor retained the right to revoke the donated property, since the logic of such a donation was to appoint the donee as heir/ legatee and not to pass the property to him during his lifetime (Dojdev, 2000, p. 681);
- where the death of the alienor is a resolutory condition (Copîlov, 2019, pp. 39-45) –- is expressly permitted by art. 1207 para. (2) CC RM: *In particular, the contract may provide for the right of revocation, either where the donee would predecease the donor, or where both the donee and his descendants*

would predecease the donor. In other words, the death of the donee will dissolve the legal relationship of donation.

In the matrimonial contract (art. 27 of the Family Code of the Republic of Moldova) the parties may stipulate the clauses that will regulate the property relations both during their marriage and in the event of its dissolution. Of course, the death of one of the parties does not lead to the dissolution of the marriage, but to its termination, which does not fall within the legal definition. However, under article 29 para. (4) of the Family Code of the RM (Parliament RM, 2000), the spouses are entitled to stipulate in the matrimonial contract the property to be transferred to each of the spouses in the event of partition. The same article allows the rights and obligations of the spouses to be made dependent on a certain condition. Partition may take place either during the lifetime of the parties (during or outside the marriage), or after the death of one or both parties, being prior to the partition of the estate (art. 2498 para. (7) of the CC RM). Therefore, the contractual clause, which would result in the acquisition of a right upon the death of the other contracting party, in other words, the introduction of property subject to the suspensive condition of the death of the other spouse, is not expressly prohibited. Being a conclusion, which radically changes the conceptual view, in the specialized literature we find the approach prior to the implementation of the Law no. 133/2018 (Parliament RM, 2018), which considers null and void any condition that links the acquisition of the right to a property to the death of one of the spouses, any provision for the case of death is null and void (Cebotari, 2021, p. 157). However, no legal norm, which would support this position is not brought.

Since March 1, 2019, the institution of trust has been regulated in a particular and very detailed manner. From the outset, the legislator has tried to avoid the possibility of setting up a trust for an unlimited term, a maximum term of 30 years (with some exceptions), which can be extended by the parties. At the same time, there are 2 distinct situations:

a) trust created upon the death of the trust founder. In this case, we are in the presence of a legal act *mortis causa*, which is ineffective being affected by the suspensive condition. This provision of the trust founder will be valid only if it has been included in a testamentary disposition (art. 2077 para. (1) CC RM);

b) a trust created during the lifetime of the trust founder, but the beneficiary acquires the right upon the founder's death. In this case, the trust deed itself is valid and effective from the moment of its conclusion, and the moment of acquisition of the property right of the beneficiary of the trust is dependent on the death of the settlor (alienator). We expressly note this possibility in art. 2085 lit. d) of the CC RM. In this case the rules on wills do not apply.

Summing up all these examples, we deduce that the Moldovan legislation distinguishes between a civil legal act under condition *mortis causa* of the

alienator and an effective legal act containing a right to be acquired/losst upon the occurrence of the condition, among which the alienator's death may be stipulated. Finally, we note the absence of a regulated delimitation of the situation when the institution of inheritance must be applied from the situation when the rules of inheritance law do not apply to these relationships, the provisions governing contractual obligations being sufficient.

2.5 Society's appreciation of the role of wills. Alternatives used in practice and inherent risks

From the perspective of history, we note that at the time of the appearance of the will as a form of expressing the will to dispose of one's property upon death, this act was a symbol of the author's maturity, which emphasized a high level of responsibility towards one's own estate (implicitly demonstrating that the person owns the property), towards one's own family and towards the state.

Heritage has become an indispensable part of national culture. Each state has preserved this traditional culture – which is also reflected in the acts of the European Union. For instance, according to point (20) of the Preamble to Regulation (EU) No 650/2012 (EU, 2012), the *different systems of approach to succession applied in the Member States are to be respected*.

During the Soviet period, the state paid special attention to inheritance, although there were many restrictions on property ownership. At the same time, the classes of legal heirs were determined based on promoted traditions. Both these premises were the grounds for exceptional cases of making wills, and the very fact of drawing up this act is a sign of the occurrence of problems in the testator's family. Consequently, making a will in the Soviet period was not widespread. The situation did not change suddenly with independence, as the culture remained unchanged, and morals retained the same values about property, family, economy and finances. For most citizens, the distribution of inheritance among relatives according to the rules of legal inheritance remained a correct view (in accordance with their will).

Even today, during succession proceedings, most heirs relate the reason for not making a will to either the fact that they died suddenly and failed (i.e., irresponsibility regarding the legal fate of the estate or agreement with the distribution among heirs according to the classes of legal heirs) or that they want everything to be according to the law. Ordinarily, anything that does not comply with the law is regarded as a violation. Consequently, if there is legal heirship, then any action against the application of legal heirship can be construed as a desire to violate the law. However, the purpose pursued by the legislator was to provide an alternative to legal inheritance – the freedom of the person to plan how to distribute the estate remaining after his death in a unipersonal manner. In other words, the antipode to legal inheritance is testamentary inheritance, which is also perfectly in accordance with the law. The level of legal culture does not

always allow for a correct awareness of these issues, which makes it difficult to plan an inheritance by drawing up a will or other legal documents.

The clarity of the testators will as expressed in the will is based on the legal culture of the person who drafted the will and, where appropriate, on the advice of the notary who authenticated the will. The problem with wills drawn up without the assistance of a notary lies in identifying the clear will of the testator. One mechanism for identifying the testator's will is the interpretation of the will (since the will comes into force after the testator's death - it is impossible to appeal to the testator to clarify this will). The rules of interpretation can be found in the law, in the CC RM.

A small foray into the provisions of the CC RM reveals that since 01.03.2019 the concept of inheritance has been substantially changed. This has affected both the classes of legal heirs (which already no longer correspond to the national traditions, the concept being taken over from the German legislation) and the devolution of inheritance. As regards devolution, the German concept implemented in the Republic of Moldova is based on the presumption of acceptance of the inheritance by any heir who has not renounced the inheritance within 3 months. Here it should be noted that, according to the data of the National Bureau of Statistics, the level of migration from the Republic of Moldova is constantly increasing, most citizens of which leave for work. Drawing up a act of renunciation of inheritance abroad involves expenditure of time and money, which does not offer any advantages in return. Previously, the obligation to prepare the declaration was put on the persons who wished to accept inheritance, and the concept of non-acceptance of inheritance was applied to persons who did not accept inheritance within 6 months. Finally, given the large number of people who have gone abroad and the fact that it costs money and time to draw up the act, heirs from abroad are reluctant to renounce their inheritance within the deadline, which generates the obligation of the notary to apply the procedure of restoration or setting a new deadline for renouncing the inheritance, or to apply the legal presumption of implicit acceptance of the inheritance. At the same time, in the event of renunciation of the inheritance, the representative of the succession (except for the spouse) applies. In this way, the share of the inheritance does not go to the other heirs called to inherit but calls to inherit the descendants of the successor to the will. In this way, the costs of legalizing inheritance rights increase. The other route - accepting the inheritance and disposing of the share of the estate - also generates additional costs. And if the alienation goes beyond first-degree relatives (parents-children), there is also the obligation to pay tax - an additional expense for the heir alienator plus the obligation to file a tax return.

A solution in this situation would have been the will, but the way the inheritance reserve is regulated does not allow the full use of the will. According to art. 2530 para. (2) from the CC RM, reserved heirs are the legal heirs of the

first class, the parents of the deceased, as well as the surviving spouse if, on the date of the opening of the inheritance, the deceased had a direct maintenance obligation towards the respective heir according to the Family Code. Under these conditions, objectively identifying by the notary whether the person has the capacity of a reserver or not - is not possible and requires a common understanding of the heir and some potential reservers.

Notarial inheritance procedures conducted by the author in the period 2019-2024 (approx. 800 files) demonstrated the sudden increase in the society's expenses (as a result of drawing up additional documents required by law), as well as the delay of these procedures (in case the heirs are abroad and do not want to draw up the necessary documents or their place is unknown, which makes it impossible to issue the certificate of heirship due to the impossibility to establish the circle of heirs). Obviously, this has led to dissatisfaction and the search for alternative succession procedures.

Both types of contracts result in the person losing ownership of the property while still alive, which causes subsequent risks in relations between the contracting parties. The situation worsens if the acquirer dies before the alienator, in which case the legal relationship may arise not between relatives, but with third persons or kin. The greatest risk here is the simplified impossibility of revocation of this contract (which exists in the case of wills), which is possible only in certain cases in the case of donation (inter alia, the donation contract may also provide for the donor's right to revoke the donation in the event of the predecease of the donee) and is not possible in the case of a contract for the alienation of property subject to lifetime maintenance. As a result of these contracts, the person loses the right of ownership, cannot freely dispose of the property and, at the same time, loses several social rights that the state grants to socially vulnerable persons who own a home (to compensate for payments for communal services, etc.).

In conclusion, in the author's notarial practice today, there is a noticeable increase in the number of cases of concluding a donation contract with reservation of the right of inhabitation and, less frequently, of contracts of alienation of property subject to the condition of lifetime maintenance to avoid inheritance. If the state will not intervene in this development of facts, then society, represented by everyone, will continue the gradual replacement of the way of disposing of the wealth owned after his death, avoiding the inheritance route.

3. LEGAL INSTITUTIONS REQUIRED BY SOCIETY BUT NOT IMPLEMENTED IN THE REPUBLIC OF MOLDOVA

Traditionally, wills are regarded as the only legal means of transmitting property, including the patrimonial rights that make it up, by reason of death.

Other legal instruments known in different countries have not been expressly permitted in the Republic of Moldova.

An attempt to bring to the attention of the legislator such expectations have been made earlier (Semionova and Pistriuga, 2016, pp. 59-62), as well as the first problems identified in the part of the new regulations in the field of inheritance at the draft stage (Pistriuga, 2016, pp. 44-47), and after implementation (Pistriuga, 2020, pp. 536-545).

3.1 Joint will (common)

In Moldova (Art. 2192 para. (2) of CC RM provides: *Two or more persons may not testate by the same will, one in favor of the other or in favor of a third party)*, similarly as in Romania (art. 1036 of the Romanian CC stipulates*: under penalty of absolute nullity of the will, two or more persons may not dispose, by the same will, one in favor of the other or in favor of a third party)* inspired by French law, joint wills, including joint (reciprocal) ones, are prohibited. In Regulation no. 650/2012 (EU, 2012) *joint will mean a will drawn up in one instrument by two or more persons* (art. 3).

The purpose of such a prohibition is to preserve both the good faith and the revocability of the will. Thus, for example, if one of the testators should die, what happens to the last will expressed by the second testator? If the law allows it to be revoked - then the principle of good faith has been violated, because the other testator has formulated this will with the surviving testator's will in mind. If revocation is prohibited – the nature of the will is changed, and it will no longer be a last will. However, in some countries (e.g., Germany, Norway) the law allows in a restricted way (between spouses) the right to make joint wills. The problem described is solved as follows: if the surviving testator revokes his testamentary disposition after the death of the first testator, then the whole will is canceled (considered revoked), including that the heir's certificates are annulled. The making of two separate wills does not contain this connection, and the introduction of a condition in the will – related to its validity in case another will made by the heir will remain in force – contradicts the legal nature of the will and is not possible.

Statistics show that, in Germany, out of the total number of legal acts for the cause of death, 5% are inheritance contracts and 57% are joint wills, which confirms that citizens prefer these forms of legal acts, considering them convenient, practical and effective (Gongalo *et al*, 2015, p. 61).

Traditionally, in the Republic of Moldova, children wait for both parents to die, after which they share the remaining inheritance. Quite often, if succession proceedings are opened after the death of one spouse (parent), all children renounce their inheritance (applies until 28.02.2019) or donate their shares of the estate to the second spouse (parent) (starting from 01.03.2019). In these circumstances, even if there was an agreement between the parents while they

were alive, after the death of the first parent, the second parent is entitled not to follow this agreement (which only gave rise to a natural obligation) and is entitled to revoke the will drawn up according to this agreement and to draw up another will.

As the legal framework in the field of inheritance has been largely taken over from German law, the introduction of this institution could provide a solution to these requests and additional guarantees for testators and heirs.

3.2 The agreement as to succession

In Regulation 650/2012 (EU, 2012), agreement as to succession is referred to as ”agreement as to succession” *means an agreement, including an agreement resulting from mutual wills, which, with or without consideration, creates, modifies or terminates rights to the future estate or estates of one or more persons party to the agreement*.

At present, neither the laws of the Republic of Moldova nor those of Romania contain any express provision that would allow the right to inherit based on a contract. While in Romania this question is clearly settled by the provisions of Article 962 of the Civil Code, which recognizes two calls to inheritance: law and will, in Moldova there is no express rule in this respect. However, Article 1005 of the RM CC declares null and void *a contract by which a party undertakes to transfer his future estate or a part of that estate or to encumber it with usufruct*, which prohibits the conclusion of an agreement as to succession with a traditional object (the estate or a fraction thereof). In contrast to joint wills, more countries have introduced agreement as to succession. These are known under the laws of Austria, Germany, Hungary, Latvia, Switzerland, Austria, Hungary, Latvia.

The Civil Code of Ukraine (Verkhovna Rada of Ukraine, 2003) contains the regulation of the agreement as to succession, defined in Art. 1302 (*agreement as to succession- an agreement, according to which one party (acquirer) assumes the obligation to fulfill the provisions of the second party (the alienor) and, in case of the alienor's death, acquires the right of ownership of the alienor's property*), which goes beyond the traditional subject of the agreement as to succession and more closely resembles an annuity contract, with one difference - the transfer of ownership occurs not at the conclusion of the agreement (*inter vivos*), but at the time of death (*mortis causa*).

This type of contract was introduced into the Civil Code of the Russian Federation in 2018 (State Duma of Russian Federation, 1994). According to its Article 1140.1, *the agreement as to succession is that contract, the terms of which determine the circle of heirs and the manner of transmission of the right to the estate of the person who has left the inheritance after his death to the parties to the contract who survived him or to third persons who survived him, who may be called to the inheritance*.

Even if the Moldovan legislation allows the conclusion of property transfer contracts with special guarantees for the transferor (such as annuity, alienation of the property subject to lifetime maintenance, etc.), or allows the conclusion of other contracts with reservation of limited in rem rights (such as donation with reservation of the right of inhabitation or the right of usufruct), the property right in these cases is still transferred inter vivos, although the real wish of the transferor is usually to lose the property right upon death. Notwithstanding the notary's detailed explanations, sometimes the disposing party is left with the perception of reservation of ownership on the grounds that he retains the right to use the property disposed of until death.

4. CONCLUSIONS

Summing up the problems stated in this paper, without repeating them, we can certainly state that the experiment in Moldova with chaotic taking over of legal norms from different countries, without having a certain idea of a legal system to be built, even in a separate branch, does not bring benefits, but creates uncertainty in the field of realization of rights and their stable civil circulation.

Essentially, at the conceptual level, in the case of a right arising from a legal act *mortis causa*, the cases in which the institution of inheritance is to intervene and the cases in which the rules governing the contract are to be applied must be precisely stipulated, so that the subject-matter of this legal act is excluded from the estate. In the absence of a register, is it not clear how the publicity of *a mortis causa* disposition provided for in a contract will be ensured? Notaries can therefore record in the register of succession files and wills provisions made in contracts of donation and other contracts, if they identify provisions which may affect the devolution of the estate.

Unintentionally and without special attention in the informative note to the CC of the RM, including publicly declared, the regulation of other legal institutions has also affected the possibility of *mortis causa* contractual conclusion. This makes it necessary to review the concept of inheritance in the current Moldovan legislation.

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LEGAL ADAPTATION STRATEGIES FOR UNFORESEEN EVENTS IN THE CIRCULAR ECONOMY THROUGH THE INTEGRATION OF RESILIENCE AND MATERIAL REUSE

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Abstract
The circular economy is essential for sustainable development, promoting the reuse of resources and waste reduction. This article explores legal adaptation strategies to address unforeseen events in the circular economy, highlighting the importance of integrating resilience and material reuse. The purpose of this article is to analyze how current legislation at both European and national levels addresses risks and unforeseen events and to propose improvements for better integration of these concepts.
The main objectives include examining ways in which material reuse contributes to adaptability, evaluating existing contractual clauses, and proposing adaptability clauses for risk management. The case study of the "Close the Glass Loop" program in the glass industry is used to illustrate the practical application of these strategies and to demonstrate the success of a circular economy initiative in the context of disruptions caused by the COVID-19 pandemic. Expected outcomes include a better understanding of the importance of adaptability clauses in contracts and the need for flexible and innovative regulations.
Legislative improvement proposals aim to introduce adaptability clauses, promote investments in innovative technologies, and intensify public education campaigns. These measures could contribute to increased resilience and sustainability of the circular economy, providing a robust legal framework to facilitate the transition to more sustainable and efficient economic practices.
In conclusion, this article emphasizes the need to adapt legislation to address the challenges of the circular economy and proposes concrete solutions for integrating resilience and material reuse into the existing legal framework, thereby contributing to the creation of a sustainable and resilient economic model.
Keywords: *circular economy; legal adaptation; resilience; material reuse; unforeseen events.*

JEL Classification: A11, D5, K10, K12.

1. INTRODUCTION

In a world where resources are increasingly limited and the pressure on the environment is growing, the circular economy has become a key concept in the search for a sustainable economic model. Essentially, the circular economy is based on the idea of replacing the traditional "take, make, dispose" model with one where resources are used efficiently, and waste is transformed into new resources or reintegrated into the economic cycle.

However, within the circular economy, not everything always goes according to plan. Unforeseen events, such as natural disasters, sudden changes in market demand, or disruptions in supply chains, can significantly impact the functioning of the system and test its resilience.

In this context, legal adaptation plays a crucial role in ensuring that the circular economy can cope with and adapt to these challenges. This legal adaptation involves the development and implementation of policies, regulations, and legal instruments that facilitate efficient resource management and provide a flexible framework to manage risks and unforeseen events.

Moreover, it is important to analyze and understand how these principles and strategies apply at the local level, such as in the Republic of Moldova. In recent years, Moldova has made significant strides towards a more circular economy, adopting policies and programs that promote reuse, recycling, and sustainable resource management. By exploring these concrete examples of policies and legal initiatives, we can better understand how concepts of resilience and material reuse can be integrated into the existing legal framework and how new strategies can be developed to face future challenges.

In this paper, we aim to analyze and evaluate these aspects, highlighting the importance of legal adaptation in the circular economy and providing specific examples of policies and legal practices in the Republic of Moldova. These examples can serve as models and sources of inspiration for other countries and regions in their quest for a more sustainable and resilient economy, both in everyday life and in emergency situations.

2. DATA AND METHODOLOGY

This article employs a mixed methodological approach to explore legal adaptation strategies in the circular economy and their impact on managing unforeseen events. The analysis is based on updated legislation, programs implemented at the European and national levels, as well as relevant case studies. Updated legislation and implemented projects were analyzed: at the European level, essential regulations such as the Circular Economy Package and the Waste Framework Directive were examined. These documents establish the legal framework for waste reduction and the promotion of material reuse. At the

national level, the legislation of the Republic of Moldova was studied in detail, including the Green Economy Promotion Program and the National Development Strategy "Moldova 2030". These sources reflect the country's commitment to transitioning to a circular economy.

Additionally, successful programs and initiatives implemented at both European and national levels were evaluated. A notable example is the "Close the Glass Loop" program in the glass industry, which has demonstrated efficiency in increasing the collection and recycling rate of glass. In the Republic of Moldova, various waste management and recycling initiatives were analyzed to assess their impact on sustainability and economic resilience.

The methodology used in this article refers to legislative analysis, document analysis, and case studies. Legislative documents, government reports, and case studies were collected and analyzed to understand the legal framework and its impact on the circular economy. A comparative method was also used regarding the circular economy at both national and international levels.

3. LITERATURE REVIEW

Specialized literature provides a solid foundation for understanding the circular economy, relevant legislation, and adaptation strategies in the face of unforeseen events. This section synthesizes the main contributions of existing literature and identifies future research directions. Numerous statistical studies emphasize the importance of the circular economy for sustainable development. Resource reuse and waste reduction are essential for environmental protection and economic optimization. Various initiatives and platforms like “Close the Glass Loop” highlight the need to integrate circular economy principles into national and international policies. European regulations, such as the Circular Economy Package and the Waste Framework Directive, offer a comprehensive framework for promoting circular practices. In the Republic of Moldova, recent policies and programs promoted by the Ministry of Environment demonstrate an increased commitment to implementing green and circular economies.

The literature on the circular economy and legal adaptation strategies has evolved considerably, with scholars like Kirchherr, Reike and Hekkert (2017) emphasizing the significance of well-defined legal frameworks to promote material reuse and systemic adaptability. Zamfir (2020) highlights the role of legislation in supporting technological innovations and reducing material waste, pointing to the necessity for legal instruments that foster sustainable industrial practices. Similarly, Negrei and Istudor (2018) focus on bridging theoretical approaches to the circular economy with practical, adaptable legal mechanisms. Researchers like Amarița (2006), Plotnic and Popescu (2022) further examine how force majeure clauses within contractual frameworks can mitigate risks in crisis situations, such as those posed by the COVID-19 pandemic, thereby ensuring business continuity. Case studies from Moldova’s “Moldova 2030”

strategy and the EU's "Close the Glass Loop" initiative illustrate the efficacy of public-private partnerships in advancing circular economy goals, as highlighted by Dulgheru (2023) and Plotnic and Praporscic (2023). This extensive body of literature underscores the interconnectedness of legal frameworks, sustainability policies, and economic resilience in the circular economy transition

The literature explores various legal adaptation strategies for managing unforeseen events. Force majeure clauses and adaptability are studied in the context of the COVID-19 crisis, highlighting the need for flexible regulations that allow for the renegotiation of contractual terms. This article contributes to the existing literature by providing a detailed analysis of legal adaptation strategies and proposing improvements to better integrate resilience and material reuse concepts into current legislation.

Legal frameworks are crucial in facilitating the transition to a circular economy. Kirchherr, Reike and Hekkert (2017) emphasize that clear legal definitions and regulations are necessary for promoting circular economy practices, which include the reuse of materials and resilience to disruptions. Negrei and Istudor (2018) discuss the gap between theory and practice in circular economy implementation, highlighting the need for legal mechanisms that can adapt to unforeseen events.

The concept of force majeure plays a significant role in legal adaptation strategies, especially in contracts related to the circular economy. Amarița (2006) provides an overview of the force majeure clause in comparative law, illustrating its importance in protecting parties from liabilities during unforeseen events. Plotnic and Popescu (2022) further analyze the impact of force majeure on intellectual property contracts, which is particularly relevant in the circular economy where innovation and IP rights are integral.

3.1. Resilience and material reuse

Resilience in the circular economy involves the capacity of systems to absorb disturbances and reorganize while undergoing change. The integration of resilience into legal frameworks is essential for ensuring the durability and adaptability of circular economy practices. The European Environment Agency (2024) emphasizes the need for legal structures that support resilience by allowing flexible responses to economic and environmental challenges. Material reuse is another cornerstone of the circular economy, not only it reduces waste but also builds resilience by decreasing dependency on virgin resources. The work of Kirchherr, Reike and Hekkert (2017) is critical in understanding the various strategies for material reuse and the legal frameworks needed to support these strategies. Dulgheru (2023) discusses innovative business models in the circular economy, highlighting the legal challenges and opportunities in material reuse.

3.2. Case studies and applications

The Moldovan context provides a practical example of how legal adaptation strategies are being implemented in response to unforeseen events. Akhalkatsi, Jolevski and Rovo (2021) discuss the increasing anxiety among Moldovan companies during the pandemic, emphasizing the need for legal frameworks that support resilience. The Government Decision no.12/2021, which approves the "Moldova 2030" National Development Strategy, underscores the importance of adapting legal frameworks to promote a circular economy in the face of global challenges**.**

The EU4 Environment (2024) program for promoting the green and circular economy in Moldova outlines government priorities and legal measures aimed at enhancing resilience and promoting material reuse. These initiatives are crucial for aligning Moldova's economic strategies with the principles of the circular economy.

BMW (2024) and other industry leaders are also adopting circular economy practices, with a focus on resource conservation and material reuse. These practices highlight the role of legal frameworks in supporting industry adaptation to unforeseen events.

The integration of resilience and material reuse into legal frameworks is essential for advancing the circular economy. The literature highlights the importance of force majeure clauses, adaptable legal structures, and supportive government policies in fostering a resilient circular economy. The Moldovan case provides a practical example of how legal adaptation strategies can be implemented to address unforeseen events, ensuring the sustainability and success of circular economy practices. This review underscores the need for continuous adaptation and innovation in legal frameworks to support the evolving demands of the circular economy. By doing so, societies can better manage unforeseen events and move towards a more sustainable and resilient future.

4. CIRCULAR ECONOMY: PRINCIPLES AND IMPLEMENTATION

The economy is an open system, realizing both material and energy exchanges. While material flows can be "circularized" to some extent, energy flows are unidirectional, with the law of entropy being a strict and objective natural law. From this perspective, we cannot conceptually speak of a "circular economy." However, it is essential to note that due to the persistence of mechanistic views, the concept of a "circular economy" has emerged in some works. Under this name, it refers to the cyclicality of real phenomena and processes, directly linking to the cyclicality of natural phenomena and processes. "The objective of the circular economy (...) is to reproduce the quasi-cyclic functioning of natural ecosystems" (Negrei and Istudor, 2018).

The concept of a circular economy emerged in the late 1970s in response to the aspiration for sustainable growth amidst the increasing pressure exerted by production and consumption on the planet's resources and environment. Until now, the economy has primarily operated on the "take-make-dispose" model, a linear model where each product has a limited lifespan. With the transition to a circular economy, the focus shifts to reusing, repairing, refurbishing, and recycling existing materials and products (Dulgheru, 2023).

Regarding the Republic of Moldova, although rapid steps are being taken towards developing a circular economy, the situation is not very favorable. According to statistical data reported by News Maker, Moldova generates at least 3 million cubic meters of waste annually, which is a significant amount given the population size. Of this, two-thirds is generated by the population, and the remaining third by enterprises (Gotisan, 2022). However, considering that Moldova is a developing country striving to keep up with European states and currently holds the status of an EU candidate country, significant movements are observed regarding the circular economy. This is also evident in the project promoting a green and circular economy in Moldova.

Most national economies encourage consumerism, affecting the environment and depleting natural resources. To address these issues, a transition to circular business models is necessary to reduce resource consumption and minimize environmental impact. Sustainable development has thus become a central pillar for both the European Union and international cooperation at regional and national levels. Sustainable development aims to decouple economic growth from environmental degradation and reduce social inequalities (Parliament of the Republic of Moldova, 2024).

In an era where the circular economy is becoming increasingly important for promoting sustainability and reducing environmental impact, unforeseen events pose a significant threat to these efforts. From natural disasters to public health crises and political changes, the circular economy is often tested by unpredictable situations.

One of the main aspects is the risk and impact that unforeseen events have on the supply chain and recycling processes. For example, a natural disaster can disrupt material and waste flows, causing interruptions in recycling and reuse activities. These situations can create additional pressures on resources and lead to delays in production and consumption cycles. Managing unexpected waste is another major challenge associated with unforeseen events. During crises such as pandemics or natural disasters, large quantities of waste can be generated rapidly, and the capacity to manage them may be overwhelmed. This can lead to waste accumulation and negative impacts on human health and the environment. To address these challenges, effective strategies and tools are necessary. Flexibility and adaptability in circular economy models are essential for coping with unexpected changes and responding quickly to crises.

5. ESTABLISHING THE CONCEPT OF RESILIENCE IN THE CIRCULAR ECONOMY

Resilience in the circular economy is an essential concept for the sustainable and enduring development of society. In a world where natural resources are finite and the demand for products and services continues to grow, it is crucial to adopt economic models that not only reduce waste and conserve resources but also strengthen the capacity of economic and social systems to withstand and adapt to various shocks and disruptions. Resilience thus refers to a system's ability to resist, adapt, and recover quickly from shocks and disturbances (IEACR, 2023).

In the context of the circular economy, it is important to understand that when we talk about resilience, we are also referring to the diversification of raw material sources. The circular economy promotes the use of recycled materials and renewable sources, thereby reducing dependence on finite and vulnerable natural resources, which are susceptible to price and availability fluctuations. Another important aspect of resilience is product durability. Products designed to be durable, repairable, and reusable contribute to a more robust economy that can better withstand unforeseen situations, such as supply crises or sudden increases in raw material prices. Additionally, innovation and adaptability are crucial, as the circular model encourages continuous innovation in product design and production processes, making businesses more adaptable and capable of responding quickly to market changes and new regulations.

An equally important aspect is the creation of local communities and economies. The circular economy can stimulate local economic development and create jobs through community-level reuse and recycling initiatives. This can lead to more cohesive communities that are less vulnerable to external shocks.

Therefore, the benefits of resilience in managing unforeseen events are numerous and extend to economic, social, and environmental levels. These benefits can help organizations and communities navigate crises more efficiently and recover more quickly, ensuring long-term stability and continuity (Kirchherr *et al.,* 2017).

6. THE ROLE OF MATERIAL REUSE IN PROMOTING RESILIENCE IN THE CIRCULAR ECONOMY

Regarding the reuse of materials, it is an essential pillar of the circular economy that significantly contributes to promoting economic and ecological resilience. By reducing dependence on new resources, diminishing waste, improving resource efficiency, and stimulating innovation, the reuse of materials helps create a more sustainable and adaptable economic system in the face of changes and crises. This not only supports sustainable economic development but also contributes to environmental protection and improved quality of life for

all. Below, we will outline several ways in which reuse supports resilience, also mentioning some business examples. Thus, reducing dependence on new resources, diminishing waste, improving resource efficiency, creating new economic opportunities, and increasing economic independence are just a few ways in which the reuse of materials supports resilience. It is also important to mention that there are ways through which material reuse contributes to adaptability in the face of unforeseen events, especially when such a force majeure clause is not included in contracts, which would simplify things.

Supply chains that integrate the reuse of materials are more flexible and resilient to disruptions. During a crisis, such as a pandemic or a natural disaster, the ability to use secondary materials already available locally can reduce dependence on affected international shipments. This allows companies to continue operations and fulfill their contractual obligations. In the context of unforeseen events that may increase the costs of new materials, the reuse of materials can be an economically efficient solution. The reduced costs associated with reused materials allow companies to maintain profitability even in adverse economic conditions. This ensures business continuity and economic stability, minimizing the risk of contract non-performance.

The reuse of materials encourages innovation and rapid adaptation to market changes. Businesses that specialize in reuse are often more open to technological innovations and efficient processes. In the face of an unforeseen event, these companies can quickly adjust production processes to utilize available materials, thus ensuring continuity and adaptability. Incorporating sustainability principles through material reuse not only improves resilience in the face of unforeseen events but also contributes to long-term sustainability goals. This creates a competitive advantage for companies that promote eco-friendly practices, attracting environmentally conscious consumers and business partners.

For a better understanding, we will refer to some best practices in the textile industry. Companies like Patagonia and H&M have implemented recycling and reuse programs for old clothes, thus reducing dependence on raw materials and creating more resilient supply chains. The auto industry is also making strides, with manufacturers like Toyota using recycled components in the production of new vehicles, reducing costs and vulnerability to material supply disruptions. The technology industry, which is continuously growing and developing, has introduced recycling programs for electronic components, using recovered materials in the production of new devices, helping manage fluctuations in the supply of rare metals, as exemplified by Apple.

Therefore, the reuse of materials plays a crucial role in increasing the adaptability and resilience of the circular economy in the face of unforeseen events. By reducing dependence on primary resources, flexibilizing supply chains, maintaining low costs, promoting innovation, and supporting

sustainability, companies can navigate crises more efficiently and ensure contractual continuity. We conclude that the reuse of materials becomes an essential strategy for coping with uncertainties and ensuring long-term sustainability.

7. EVALUATING LEGAL ADAPTATION STRATEGIES FOR UNFORESEEN EVENTS IN THE CIRCULAR ECONOMY

A justificatory impediment is a legal concept used to describe situations where a party to a contract cannot fulfill their obligations due to unforeseen and uncontrollable events. This is closely related to force majeure clauses in contracts, which allow for the temporary suspension of contractual obligations in cases of unforeseeable external events such as natural disasters, wars, pandemics, or other extreme circumstances (Plotnic and Popescu, 2022). On the other hand, the circular economy promotes resource reuse, waste reduction, and the creation of a sustainable economic system. In this context, the justificatory impediment plays a crucial role in ensuring the continuity of supply chains and circular economic processes in the face of unforeseen events (Jaffa, 2023).

In recent years, Moldova has made rapid strides towards becoming a greener and more environmentally friendly country, with recent legal strategies confirming this progress. The first "green" economy promotion program in Moldova was implemented from 2018-2020, supporting the implementation of green economy principles in the country and achieving notable accomplishments. However, the challenges and objectives mentioned in Government Decision no. 160/2018 remain unmet, leading to the initiation of a new program (2024-2028) with three general objectives:

- Objective 1: Strengthening the policy and institutional framework to promote green and circular economy principles.
- Objective 2: Accelerating the transition towards green and circular economic development to achieve the goals of the European Green Deal.
- Objective 3: Promoting awareness, education, and understanding in the field of green and circular economy (EU4Environment, 2024).

According to the draft National Regional Development Strategy of Moldova (SNDR) 2022-2028, the results of SNDR 2016-2020 reveal that the main shortcomings relate to the sustainability of economic development. Of the 59 projects approved for funding, including 29 in water and sanitation, 1 in solid waste management, 12 in road infrastructure, and 17 in public building energy efficiency (Popa, 2022).

A good strategy for promoting the circular economy is exemplified by BMW Moldova. On their official website, they emphasize the importance of sustainability, mentioning that resource conservation is one of their core objectives, as is the careful, frequent, and prolonged use of raw materials. They base their approach on three principles and provide some statistics: on average, a

new BMW Group car contains 60 kg of recycled plastic, accounting for at least 20%. Waste processing: BMW Group recycled 99% of the waste generated during the production of 2.3 million cars in 2022—93.4% material and 5.8% thermal. Recycling ratio: 30% of their new cars contain secondary raw materials, i.e., recycled and reused materials (BMW, 2024).

The development of the circular economy in the Republic of Moldova has made significant progress recently due to government efforts, private sector initiatives, and international support. The Green Economy Promotion Program (2018-2020), mentioned earlier, was the first policy document that supported the implementation of green economy principles in Moldova and achieved positive results (Panurco, 2021). Another important step was the adoption of the National Development Strategy "Moldova 2030", which includes objectives for sustainable development and the circular economy, emphasizing efficient resource management and reducing environmental impact, as in Government Decision no. 12/2021(Government of the Republic of Moldova, 2021). Moldova benefits from financial and technical support from the European Union and other international organizations for implementing circular economy projects. In 2022, a new legislative initiative was voted to approve the National Regional Development Strategy of the Republic of Moldova 2022-2028.

The government has begun updating regulations on waste management and recycling to align local practices with European standards. We also observe the introduction of fiscal incentives and subsidies for companies adopting circular economy practices, helping to encourage the transition to a more sustainable economic model. In conclusion, Moldova has made significant progress toward developing a circular economy, but there are still many challenges to overcome. By continuing to implement national strategies, international collaboration, and the active involvement of all stakeholders, Moldova can advance towards a more sustainable and resilient economic model. (Nuganov, 2022).

Given that the European Union strongly supports Moldova in this journey towards a green economy, it is logical that Moldova looks to the EU for guidance and draws on many projects and strategies in this regard. In recent years, there have been some progress toward circularity. For example, Europe has increased recycling rates and promoted shared economy models, such as car-sharing. With a circularity rate of 11.5% in 2022, Europe consumes a higher proportion of recycled materials than other regions of the world. However, progress in the EU has been slow, and we are still far from the ambition to double the Union's circularity rate by 2030 (European Environment Agency, 2024).

The EU has been seriously pursuing a transition to a circular economy since the launch of the first EU Circular Economy Action Plan in 2015. In March 2020, the European Commission adopted a new Circular Economy Action Plan (CEAP), one of the main pillars of the European Green Deal, Europe's new

growth agenda for sustainability. The EU's transition to a circular economy will reduce pressure on natural resources and create sustainable growth and jobs. It is also a prerequisite for achieving the EU's climate neutrality target by 2050 and stopping biodiversity loss (United Nations, 2023).

The European Union has adopted several strategies and regulations to support the transition to a circular economy. These include the Circular Economy Package, the Waste Framework Directive, and the European Strategy for Plastics, which set clear targets for waste reduction and increased recycling. Concurrently, Moldova has begun taking important steps in this direction, adopting national policies aimed at aligning the country with European standards, which makes us optimistic and hopeful for positive forecasts moving forward.

However, implementing a circular economy is not without challenges, especially in the context of unforeseen events that can affect supply chains and contractual obligations. In this regard, the glass industry in Europe offers a relevant case study. The "Close the Glass Loop" program is an example of best practices in applying circular economy principles, while the use of the force majeure clause in this industry illustrates how companies adapt to justificatory impediments in contracts. Now that we have explored the legislation and policies at both the European and national levels regarding the circular economy, I propose analyzing a case study of the glass industry, which highlights how these regulations and initiatives contribute to increased economic resilience and adaptability.

The glass industry in Europe is a remarkable example of applying circular economy principles. The "Close the Glass Loop" program is a pan-European initiative aimed at increasing the glass collection rate and ensuring efficient recycling. This program brings together local authorities, recyclers, producers, and consumers to close the glass lifecycle loop. "Close the Glass Loop" aims to raise the glass collection rate to 90% by 2030. By improving collection infrastructure, educating consumers, and optimizing recycling processes, the program contributes to reducing glass waste and reusing this valuable resource. The average collection and recycling rate of glass packaging in the EU and the UK reached a record 80.2% in 2024, maintaining the same level as the previous year, according to the latest data from the Close the Glass Loop platform (The European Container Glass Federation, 2024). In 2023, recycling glass prevented approximately 12 million tons of glass waste from being landfilled (Vetrotime, 2023).

In the context of the COVID-19 pandemic and the Russo-Ukrainian war, the glass industry, like many others, faced significant supply chain and operational disruptions. Many companies in the sector invoked the force majeure clause to justify the temporary non-performance of contractual obligations. The force majeure clause refers to unforeseeable and unavoidable events that prevent

contractual parties from fulfilling their obligations (Amarița, 2006). During the pandemic, lockdown measures, factory closures, and transport restrictions were considered force majeure events. At the pandemic's peak, many recycling and raw material supply contracts were affected. Glass recycling companies encountered difficulties in collecting used glass, and production factories had problems with a constant supply of recycled raw materials. Glass recycling contributed to reducing CO2 emissions by approximately 7 million tons in 2022, equivalent to the emissions generated by 2 million cars per year (Akhalkatsi *et al.,* 2021).

To manage risks and ensure operational continuity, companies included adaptability clauses in contracts. These clauses allowed for the renegotiation of contractual terms based on unforeseen circumstances, ensuring a certain level of flexibility and resilience. In the face of the crisis, glass industry companies intensified collaboration with local authorities and business partners. At the peak of the pandemic, the temporary closure of collection and recycling facilities led to a decrease of about 15% in the volume of glass collected in some regions. Glass industry companies invoked the force majeure clause to temporarily suspend contractual obligations, allowing for renegotiation of terms and ensuring the continuity of partnerships. About 20% of companies in the sector reported using the force majeure clause during 2020-2021.

The program supported the adoption of new technologies to optimize recycling processes. For example, the use of optical sorting technology increased recycling efficiency by 25%, reducing contamination of recycled materials (NGA, 2024). Through public-private partnerships, temporary solutions were developed for managing glass collection and recycling, ensuring the continuity of economic processes. The pandemic and the critical situation in Ukraine accelerated the adoption of innovative technologies in the glass industry. Automating recycling processes, using artificial intelligence to optimize the supply chain, and digitizing operations contributed to increased resilience and rapid adaptation to new conditions.

The case study of the "Close the Glass Loop" program and the use of the force majeure clause in the glass industry demonstrate how the circular economy can contribute to resilience and adaptability in the face of unforeseen events. By adopting flexible strategies, collaboration, and technological innovation, companies can overcome challenges and continue to promote sustainability and the circular economy. This approach not only minimizes the negative impact of crises but also creates a more robust and sustainable economic model for the future. Concrete statistical data highlight the positive impact of the initiative despite the challenges imposed by the COVID-19 pandemic. Through adaptive strategies and extended collaborations, the program continues to promote sustainability and innovation in the glass industry.

8. CONCLUSION

Circular economy represents a central pillar in sustainable development, promoting resource reuse and waste reduction, with legislation playing a crucial role by providing the necessary framework for adopting circular practices. At the European level, regulations such as the Circular Economy Package and the Waste Framework Directive set clear objectives for waste reduction and increased recycling, significantly contributing to environmental protection and economic development.

Concurrently, Moldova has adopted policies like the Green Economy Promotion Program and the National Development Strategy "Moldova 2030," supporting the transition to a circular economy, leading to notable changes both nationally and internationally over the past five years. However, recent years have witnessed numerous uncertainties, highlighting the essential role of managing risks and unforeseen events for the success of the circular economy. Events like the COVID-19 pandemic have exposed vulnerabilities in supply chains, emphasizing the need for adaptive legal strategies.

To more effectively integrate resilience and material reuse concepts into existing legislation, several improvements are necessary. Introducing adaptability clauses in contracts would enable renegotiation based on unforeseen circumstances. Policies should encourage investments in innovative technologies and promote public-private partnerships for developing common solutions. Public education campaigns on the benefits of the circular economy and the importance of recycling need intensification to support the transition to a sustainable economic model. Examples of effective policies and programs implemented in various countries demonstrate the efficacy of these measures. Germany has adopted stringent waste recycling legislation, Italy launched the "RiVetro" program to increase glass collection rates, and the Netherlands implemented a deposit system for glass and plastic packaging. These initiatives illustrate that, through flexible strategies and extensive collaboration, we can build a robust and sustainable economic model capable of adapting swiftly to future changes and crises.

A case study like the "Close the Glass Loop" program in the glass industry exemplifies how the circular economy can enhance resilience against unforeseen events. By increasing glass collection and recycling rates and adopting innovative technologies, the program maintained economic processes and underscored the importance of collaboration among local authorities, recyclers, and manufacturers. Despite pandemic challenges, the initiative succeeded in reducing waste, saving energy, and lowering CO2 emissions.

In conclusion, integrating resilience and material reuse into the circular economy is essential for addressing unforeseen events and ensuring long-term sustainability. Through the adoption of flexible strategies, support for

innovation, and expanded collaboration, we can construct a resilient economic model capable of thriving in the face of future challenges.

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SOCIALLY RESPONSIBLE USE OF ARTIFICIAL INTELLIGENCE IN SMART CITIES: AN ETHICAL IMPERATIVE

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Abstract
Currently, Artificial Intelligence (AI) is promisingly complementing the technological landscape associated with smart cities, consisting of contextual combinations of solutions based on the Internet of Things (IoT), mobile devices, mobile communications via satellites or short-range, data platforms, Virtual and Augmented Reality, etc. The benefits associated with the use of AI relate to improving services and optimizing resource utilization, with the stated aim of ensuring a better life for citizens in urban areas. The top-down approach in the design and implementation of technological solutions associated with smart cities remains dominant, as a consequence of the power and impact of major stakeholders (technology producers and policymakers), and the social sustainability of technological initiatives is not sufficiently explored. Against this background, this paper aims to analyze the ethical challenges associated with the use of AI in smart cities development projects. The "black-box" functioning of AI tools and the related privacy concerns will be discussed, with a focus on identifying sound solutions for an ethical use of AI in smart cities. Our results show that the eXplainable AI (XAI) approach enhances transparency, trust, control, efficiency, fairness, ethical compliance, accountability, bias mitigation, privacy, and security of AI in smart cities, and a responsible AI implementation implies diverse privacy techniques like encryption, differential privacy, anonymization, edge computing, multi-party computation, federated learning, machine learning, and blockchain.
Keywords: *smart cities; AI ethics; social sustainability; XAI; privacy.*
JEL Classification: O33, M15, O35.

1. INTRODUCTION

The growth of smart cities is significantly driven by technological contributions. Traditionally, a top-down approach of urban development has been used, with city administrators selecting technologies based on proposals

from influential producers. To create a more balanced development process, a bottom-up perspective has been introduced, emphasizing societal needs, equity, inclusion, and community sustainability (Monfaredzadeh and Krueger, 2015; Trivellato, 2017; Marsal-Llacuna, 2017; Rebernik *et al.,* 2020; Zavratnik *et al.,* 2020). In addition, (Hendawy and Da Silva, 2023) present an in-between perspective, in which the integration of technology is carried out in parallel with urban social needs. In the same spirit, social sustainability advocates for a combined top-down and bottom-up approach in developing contemporary cities. This view fosters four key aspects: social capital, social cohesion, social inclusion, and social equity, while also recognizing and valuing the diverse needs and desires of people in the spaces they inhabit (Hemani and Das, 2016). In a socially sustainable smart city, ICT-based solutions must be developed with and for users, in order to ensure equitable and inclusive access for all citizens to available resources.

The range of technologies currently implemented in urban environments is vast and varied. The *enfant terrible* of our times, Artificial Intelligence (AI), complements it, benefiting from the abundance of extensive data collected through Internet of Things (IoT), the increasingly significant processing capacity of computing systems, and the enhanced transmission capabilities of communication networks. AI-driven cities aim to enhance efficiency, environmental protection, and quality of life. However, they face challenges such as technological limitations, ethical concerns, and regulatory complexities (Javed *et al.,* 2023), generated by the black-box functioning of AI algorithms, the signaled biases in their use, and the unpredictability of their development (Tegmark, 2019; Bellagarda and Abu-Mahfouz, 2022; Jagatheesaperumal *et al.,* 2022). In the context of accelerating AI development, empowering citizens in their interactions with AI is needed for fostering truly sustainable and socially beneficial smart cities (Toribio-Roura, 2020; Kelleher and Kerr, 2020). The role of technology developers becomes essential in ensuring these innovations are implemented responsibly, as the integration of AI, the IoT, and other advanced systems in smart cities necessitates a thorough consideration of ethical responsibilities to safeguard the interests and rights of citizens.

2. LITERATURE REVIEW

Living in a smart city offers benefits such as a better quality of life, access to diverse services and facilities, job opportunities, and higher incomes, yet also presents challenges including busy traffic, pollution, and housing and services affordability. Besides the inhabitants, the city administrators face issues such as costly infrastructure improvements and provocative management due to the increased urban complexity. This duality extends to the technological domain, where advancements can enhance urban service efficiency but introduce issues like imperfect security and protection, data privacy concerns, deficits in

transparency of services, ethical considerations (Lytras and Visvizi, 2018), digital divide, and issues with compliance and accountability.

Currently, AI significantly contributes to progress within the realm of smart cities, driving substantial technological innovation and providing valuable data-driven insights (Dos Santos *et al.,* 2024) but, on the other side, profoundly influencing human behavior and lifestyle. Some of the AI mechanisms and technologies used in smart cities are Machine Learning (ML), defined as the development of algorithms and statistical models that enable computers to perform tasks without explicit instructions, Deep Learning (DL), a subset of ML that uses neural networks with many layers (known as deep neural networks) to model complex patterns in data, and Natural Language Processing, in which machines are able to understand, interpret, and generate human language in a meaningful way (Dos Santos *et al.,* 2024). Computer Vision technology, which enables machines to interpret and understand visual information from the world, is also used in smart cities. It has numerous applications, including critical infrastructure protection, sanitation and waste management, transportation, traffic management, pandemic control, security, smart water management, and disaster management (Ramalingam *et al.,* 2023). According to (Morel, 2021), ML and DL are prevalent in smart cities, with a recent trend towards a merging of these two AI trends known as neuro-symbolic AI. The author mentions that these connectionists AI operate without explicit rational reasoning, as demonstrated by their ability to identify objects in both static and dynamic scenes, and considers that such tools are essential in smart cities for the rapid analysis of the extensive images, videos, and other large datasets generated by sensors and various devices.

AI technologies are essential for smart city applications but also bring challenges to cities and citizens, such as the need to address risks associated with wider AI utilization and examine upcoming disruptions of AI in cities and societies (Yigitcanlar *et al.,* 2020). In a comprehensive analysis of the application and barriers of AI across various domains within smart cities (smart mobility, environmental management, governance, economic initiatives, living standards, and community empowerment), Wolniak and Stecuła address specific challenges and solutions associated with AI implementation in each dimension, emphasizing the necessity for customized approaches to ensure the responsible and equitable deployment of AI solutions in these diverse areas (Wolniak and Stecuła, 2024).

Allam and Dhunny show that the rise of smart cities, powered by IoT and massive data generation, necessitates AI-driven big data management to enhance system efficiency, while ensuring technology supports human-centric dimensions of livability, resilience, safety, and sustainability in alignment with the 11th Sustainable Development Goal introduced by United Nations in 2015,

which is to “make cities and human settlements inclusive, safe, resilient, and sustainable” (Allam and Dhunny, 2019).

3. RESEARCH METHODOLOGY

Based on the aspects above, we formulated two research questions:

RQ1. What concerns have been raised on the AI use in smart cities development?

RQ2. What solutions have been formulated to address the challenges of AI use in smart cities development?

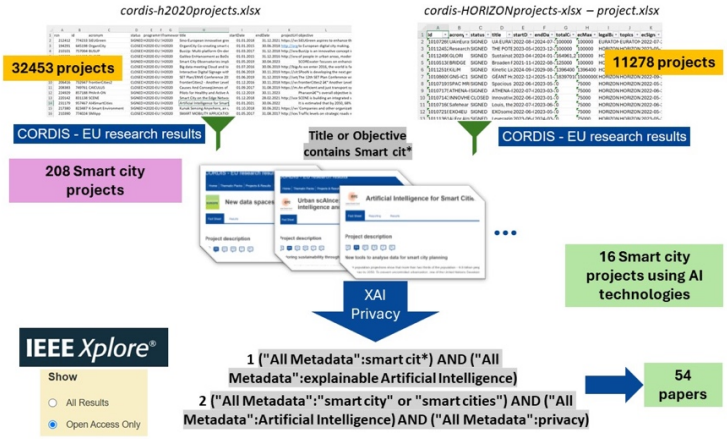

Figure 1. Research methodology

We selected as a basis for our analysis the smart cities projects funded by the European Union under the Horizon 2020, Urban Action Initiative and Horizon Europe programs. The mentioned programs were chosen because of their considerable contribution to the smart, sustainable and inclusive development of the European Union. The highly innovative initiatives funded by the programs are carried out in partnership and support the creation and dissemination of excellent knowledge and top technologies. Using CORDIS, we downloaded the data sets containing information about research projects under Horizon 2020 (2014-2020) (European Union, 2022) and Horizon Europe (2021-2027) (European Union, 2023). CORDIS, the COmmunity Research and Development Information Service, serves as the European Commission’s primary source of research results obtained in the projects funded by the European Union framework programs for research and innovation. We filtered the projects that implemented/implement smart cities initiatives and use AI-based solutions. Firstly, we extracted projects with titles and/or objectives that include the term 'smart cities' or its variations. Subsequently, we analyzed the

project fact sheets on the European Commission's website to determine whether the projects have utilized or are utilizing AI, and to identify any concerns raised regarding AI usage.

The fact sheets provide *General information* about projects and their objectives, *Results in brief*, and *Reporting and results* documents (publications obtained as outcomes of these projects). To complement our perspective on the subject, following the identification of key ethical aspects associated with AI use in smart city projects, we searched for articles on these themes in the open-access version of IEEE Xplore. This database provides "full text access to the world's highest quality technical literature in engineering and technology" (IEEE, 2024). This additional bibliographic research was necessary because most concerns regarding the responsible and ethical use of AI in smart city development have been highlighted in projects funded by Horizon Europe, which are still in early stages as the program was launched only in 2021, and few results are currently available.

4. RESULTS

4.1 Smart cities projects using AI technologies in Horizon 2020 and Horizon Europe

From the total number of 32453 projects financed in Horizon 2020, respectively 11278 projects financed by far in Horizon Europe, after filtering by the keywords "smart city" or "smart cities" in the *Title* or *Objective* fields in the above-mentioned CORDIS *xlsx* files, 208 (157+51) projects were identified. By analyzing the fact sheets of these projects on the European Commission's website, we found that 16 of them use various AI technologies in a sufficient extend to be considered in our analysis. Table 1 presents a selection of smart cities projects that use/intent to use AI technology for sustainable development, social assistance, better urban mobility management, improved environmental protection, security and privacy.

Table 1. Smart cities projects using AI technologies in Horizon 2020 and Horizon Europe

Project	Scope	AI Use
Responsible use of AI in smart cities		
Urban scAInce - Why and how cities transform through Artificial Intelligence and their associated technologies **(scAInce, CORDIS, 2024)**	Based on the presumption that more sustainable cities are smarter, the urban scAInce theory investigates how AI and its associated technologies has, can, and will alter urban systems.	Privately-driven AI solutions impact on urban sustainability will be evaluated.
Assistance		
TOTEM SPOON - Interactive Digital Signage with emotional intelligence	A screen-based avatar named SPooNy was designed for deployment in public spaces to	SPooN was designed as an enabler for the AI ecosystem in public spaces, based on an

Project	Scope	AI Use
for smart cities **(TOTEM SPOON, CORDIS, 2019)**	provide welcoming and assistance. Voice-based interaction was implemented to mitigate the digital divide.	*Ethics by Design* approach.
GAVIUS - From reactive to proactive public administrations **(Urban Innovative Actions, 2024)**	The project utilizes AI to enhance social assistance efficacy and modernize public administration. It aims to streamline citizen interactions with municipal services, support data-driven decision-making by governmental teams, and increase efficiency in managing civic procedures, serving as a model for modernization in the public sector.	Using ML methods, the system aims to achieve three main goals: streamline municipal tasks and improve interactions with citizens, empower citizens to easily access public services, and assist municipal leaders in effectively allocating resources for social services planning.
Mobility		
SPECK - Smart Pedestrian Crosswalk for Increased Traffic Safety at Uncontrolled Crossings **(SPECK, CORDIS, 2022)**	The project focuses on enhancing safety for vulnerable road users (pedestrians, cyclists, and motorcyclists) by proposing an intelligent roadside unit designed for installation at uncontrolled crossings.	Narrow AI algorithms coupled with sensor fusion techniques are used to predict and avoid situation-based traffic conflicts.
MobiSpaces - New data spaces for green mobility **(MobiSpaces, CORDIS, 2024)**	The data governance platform provided by MobiSpaces for utilizing mobility data aims to minimize the environmental impact of mobility by establishing an efficient, dependable, equitable, trustworthy, and privacy-preserving infrastructure.	eXplainable AI (XAI) techniques are to be applied at the level of data management and Machine Learning, supporting the creation of comprehensive and interpretable prediction models.
EMERALDS - Extreme-scale Urban Mobility Data Analytics as a Service - **(EMERALDS, 2024) (EMERALDS, CORDIS, 2024)**	The project proposes the creation of an urban data-oriented Mobility Analytics as a Service toolset, in order to benefit from the big data generated by the urban mobility ecosystem.	Extensive and diverse spatio-temporal data will be analyzed using real-time responsive AI/ML algorithms. Privacy preservation techniques, including Active and Federated Learning and XAI, will be implemented across all data modalities and throughout all layers of the Mobility Analytics as a Service architecture.
Environmental protection		
DIME - Distributed Inference for Energy-efficient Monitoring at the Network Edge **(DIME, CORDIS, 2024)**	The project aims to minimize the redundancy of data samples generated by the IoT sensors, redundancy that creates an "excessive and unjustified	The project proposes a general modelling framework, scheduling algorithms and sampling techniques that minimize the Total System

Project	Scope	AI Use
	carbon footprint of these systems".	Energy. Compute-intensive ML models, specifically Deep Neural Networks (DNNs), are used for providing inference.
GreenInCities **(GreenInCities, CORDIS, 2024)**	Inequities in urban areas, characterized by disparities in infrastructure and resources between neglected and affluent neighborhoods, motivate this project to prioritize societal awareness, innovate beyond traditional greening approaches, and integrate advanced technologies.	The project develops tools for collaborative urban planning in deprived areas, focusing on climate action.
Security and privacy		
AIAS - Innovative security platform against adversarial AI attacks **(AIAS, CORDIS, 2024)**	In response to the actions of attackers who target ML and DL systems, AIAS project aims to conduct research on adversarial AI to empower security teams, fortifying AI systems against potential attacks.	The developed innovative security platform for organizations will employ adversarial AI defense methods, deception mechanisms, and XAI solutions.
PrivacyForDataAI - A privacy layer to power all research and AI workflows **(PrivacyForDataAI, CORDIS, 2024)**	A privacy-preserving data solution for all research and AI projects will enable researchers and data scientists to leverage private data assets without seeing them.	The solution acts as protection layer between the data source and the scientist, guaranteeing the privacy of any AI-based computation.

4.2 Concerns on AI-use in smart cities projects

The exploration of AI in smart cities reveals both potential and challenges. Kaseens-Noor *et al.* (2022) explores the concept of scAInce in the context of smart cities, presenting both utopian and dystopian visions of their transition from "smart" to "intelligent". The paper identifies smart city megaprojects and large infrastructures as early adopters and generators of big data collections interpretable by machines. AI-driven megaprojects target significant goals such as sustainability and resilience, offering flexibility in how AI systems achieve these objectives and facilitating sustainable changes through evolving algorithms. For instance, in transportation, an AI algorithm can optimize travel times to reduce emissions, altering mobility patterns while maintaining the city's physical infrastructure. However, the black-box nature of AI poses challenges in understanding and controlling its decision-making processes. Additionally, while AI excels at analyzing historical data, it struggles with future predictions. Implementing urban AI megaprojects necessitates overcoming skepticism towards AI, particularly with autonomous vehicles due to their involvement in accidents. Moreover, technological products tested individually but operating

within ecosystems create unpredictability, especially in new and unexpected contexts. Concerns about job losses and increased dependency on technology further exacerbate these challenges. The authors propose an open science approach, where citizens and residents of smart cities actively participate in the planning, design, construction, and management of AI projects to achieve sustainability and resilience.

A review published as a result of the MobiSpaces project highlights how the black-box nature of DL algorithms impacts location privacy concerning individuals' movement data in cities and presents several technical solutions. Synthesizing trajectories through various algorithms effectively ensures the anonymization of spatial-temporal movement data of subjects, allowing for their sharing/publication without compromising privacy (Graser *et al.,* 2024). In the same project, with reference to mobility data, Makridis *et al.* (2024) propose a unified model that harmonizes various essential XAI techniques. In the EMERALDS project, Jalali *et al.* (2023) emphasize the need to ensure transparency and explainability in the field of Geospatial AI, due to the social and environmental implications that these applications can have.

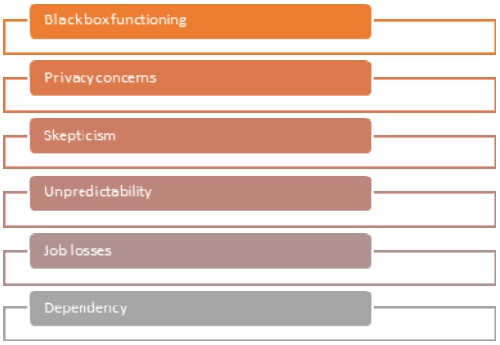

Figure 2. AI-related concerns

As illustrated in Figure 2, the primary concerns mentioned refer to the opaque functioning of AI technologies and the privacy of sensitive data regarding the identity, location, and movement of smart city inhabitants and visitors. The proposed solutions in the analyzed projects include the implementation of eXplainable AI (XAI), Federated Learning, and privacy assurance measures for sensitive data.

4.3 eXplainable AI (XAI)

Our analysis of open access IEEE eXplore papers on smart cities and eXplainable AI (XAI) revealed a diversity of perspectives on this topic, including: Cyber-Physical systems (Hoenig *et al.,* 2024), IoT (García-Magariño *et al.,* 2019; Jagatheesaperumal *et al.,* 2022), Distributed Ledger Technology

(Bellagarda and Abu-Mahfouz, 2022), cybersecurity (Houda *et al.,* 2022), crowd monitoring (Samarajeewa *et al.,* 2024), air pollution (Song *et al.,* 2022), prediction of free parking spots (Bilotta *et al.,* 2023), or early assessment of certification chances in MOOC courses (Kostopoulos *et al.,* 2021).

In a comprehensive review on the role of XAI in Cyber-Physical systems (Hoenig *et al.,* 2024) state that XAI helps in the achievement of the CPS' efficiency goals (such as optimization, security, cyber-resilience and safety) while "maintaining fairness, proper use of AI, and ethical and legal compliance". The authors identify a series of smart city services that require a high degree of transparency and trust, such as CCTV-based monitoring of individuals for safety-assurance purposes. The training of AI algorithms in the functioning of such CPS systems can still be exposed to biases caused by the manual manipulation of input data or other factors, and the classifications and decisions made by the algorithms can have a negative impact on people's reputation and lives. Standardized methods of assessing the understandability and performance of XAI are necessary.

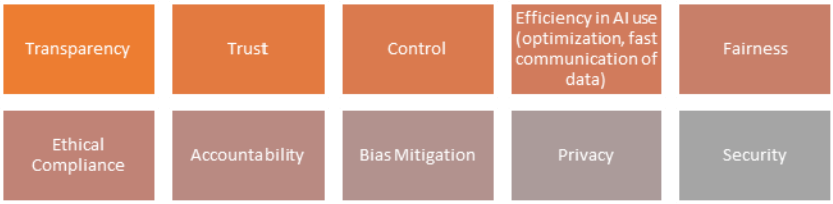

Figure 3. XAI benefits

Jagatheesaperumal *et al.* (2022) examine the role of AI in obtaining big data-based insights through proper analytics and enhancing the capabilities of Internet of City Things, with a focus on smart buildings and smart mobility infrastructure. The authors show that XAI contributes to high-speed communication and trustworthy data transfer, and to energy savings, an important aspect in greening the urban agglomerations. Opposed to the conventional AI-systems, which function as opaque black boxes, interpretable and human-understandable ML algorithms can assure an increased transparency, interpretability, trustworthiness and control on data, processing models and derived classifications and decisions. The authors assert that XAI contributes to enhancing cybersecurity through encryption, but, on the other hand, they point out that the advancement in the use of XAI in smart cities is hindered by the inherent limitations of interconnected urban objects, primarily due to their reduced processing capacity.

In Bellagarda and Abu-Mahfouz (2022), the authors show that the ML algorithms, especially deep neural networks, often produce decisions that are not easily understood. XAI aims to address the black box issue by using tools and

frameworks to clarify AI model predictions and provide justifiable reasoning for decisions. Distributed Ledger Technology (DTL) can track AI data, provide an audit trail, and enhance transparency and security of AI systems, by explaining decisions and providing a secure, transparent ledger for AI metadata. Another use of blockchain DTL in combination with ML is presented in Khan *et al*. (2024**)**. The authors propose a model of increasing remote sensing data privacy through encryption, experimenting with data of land surface in smart cities and concluding that the following aims were achieved: "minimal resource consumption costs, high privacy protection during data travel, optimal pathway, and quick data exchange capabilities".

García-Magariño *et al.* (2019) discuss the human-centric AI (HAI), an emerging field supported by the European Union, in IoT systems. In the authors' view, HAI allows users to understand and verify AI decisions, improving supervision and trust, and XAI is closely related to HAI, focusing on generating explanations for AI algorithms. The use of XAI in cybersecurity is discussed in Houda *et al.* (2022), where the authors show how interpreting and understanding predictions made by DL-based Intrusion Detection Systems can help in making security measures more transparent to the experts. The paper discusses the necessity of new security mechanisms for IoT networks, highlighting the effectiveness of Intrusion Detection Systems enhanced by DL for predicting attacks. It introduces a new XAI-based framework integrating DL and explainable AI techniques (such as LIME, SHAP, RuleFit) to improve real-time intrusion detection, transparency, and trust for both model users and cybersecurity experts.

4.4 Privacy-related concerns and solutions

Data used by smart city technologies are often highly sensitive. In Badidi *et al.* (2023), the case of video data is discussed. Video analytics significantly enhances various fields such as traffic management, security, healthcare and retail, by intelligently analyzing data to uncover hidden patterns and correlations, thereby improving decision-making, efficiency, and the ability to predict future events. Edge AI devices, which use sensors connected to a microcontroller unit loaded with ML models, can independently process data and make decisions without needing internet connectivity. The models are trained for typical scenarios, and the device can continuously learn from new situations. The AI's responses can include physical actions nearby or notifications to users or the cloud for further analysis. Smart cities use edge computing and AI for local decision-making, enhancing safety, managing resources, and improving efficiency while reducing latency, network congestion, and data privacy risks. Integrating edge AI and video analytics enhances search and monitoring by precisely identifying license plates, faces, pedestrians, and ensuring workplace safety. Privacy-preserving techniques in edge video

analytics include encryption, differential privacy, anonymization, edge computing, and multi-party computation to ensure data security.

Federated Learning (FL) offers a distributed AI approach suitable for modern IoT networks by enabling AI training on distributed devices without data sharing. FL is an AI algorithm that trains models using distributed data on local devices without transferring the data, ensuring privacy and preventing leakage (Sepasgozar and Pierre, 2022). In Nguyen *et al.* (2021), the authors survey the applications of FL in IoT, covering advancements, integration, and potential services, such as data sharing, attack detection, and privacy. Leveraging recent advances in mobile hardware and addressing privacy concerns, FL enables AI training at the network edge on IoT devices, ensuring user data remains local. This approach benefits both network operators and users by saving network resources and enhancing privacy, making FL a strong alternative to traditional centralized AI and facilitating large-scale IoT deployment.

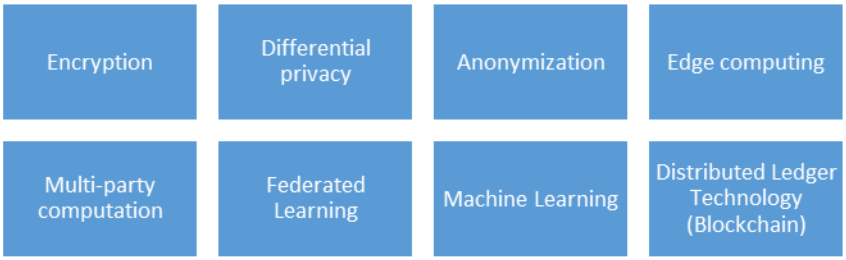

Figure 4. Privacy-preserving solutions

Analyzing the case of using collaborative drones and IoT in smart cities, Alsamhi *et al.* (2019) highlight the sensitivity of data collected in this context and show that ML can be used to keep the network secure from cyber-attacks, detect attacks during training and identify security vulnerabilities using adversarial setups. Another good response of ML algorithms to the privacy restrictions is presented in Santana *et al.* (2020). The authors detail the design, implementation, and validation of a lightweight, privacy-focused AI-based crowd-management system in real-world deployments in Santander.

In Sheraz *et al.* (2024), it is shown that AI in wireless networks faces challenges due to high data needs and limited computing resources, which can lead to inaccurate predictions. Also, AI is essential for data security in wireless networks, but it requires diverse datasets and continuous updates. Digital Twin Networks (DTN) offer a safe testing environment for these updates.

The smartness of a city depends on the richness of data that feeds the urban services. Beyond the concerns related to assuring the privacy for sensitive data,

its collection from different IoT sensors generates energy consumption (Alsamhi *et al.,* 2019), and addition of security measures such as encryption or blockchain technology is "computationally expensive" (Bernal Bernabe *et al.,* 2019). In (Azzaoui *et al.,* 2020), the authors propose a framework that combines blockchain and AI for secure, efficient, and energy-saving 5G networks.

4.5 Relevant themes and topics in the analyzed paper collection. The most influential authors

To investigate the relationship between the most visible AI-related topics in the European Union funded projects for the smart city development and the themes or topics in the collection of IEEE eXplore articles we used Biblioshiny() from Bibliometrix 4.0.1, a powerful tool for literature analysis. In our case, the thematic map is based on "keyword plus" that results from literature analysis and utilizes Walktrap algorithm. This algorithm is designed to identify clusters of closely related topics based on the frequency and patterns of keyword co-occurrences. Each cluster represents a group of related topics or keywords. The most often used metrics are centrality and density. Density signifies the strength of internal connections among all keywords used to describe the research theme, while centrality represents the strength of external connections to other themes by leveraging the field of authors' keywords (Xiao *et al.,* 2022). There are six clusters grouped in four categories:

Cluster 1 and 2 include *basic themes* – system, networks and classification, respectively blockchain and IoT. These themes are transversal and general, being essential for a good understanding of the field.

Cluster 3 – *motor themes* include research related to internet, privacy, AI, challenges, security etc. They have a high density and centrality, being the main themes in the field with a strong connection between concepts. These themes are well-developed and important for research.

Cluster 4 – *emerging or declining themes* – includes more generic themes related to models and technologies. They could gain more centrality or more density becoming the new trends or development in the field.

Cluster 5 and 6 – *niche themes* – includes communication and wireless networks, respectively data collection, digital twin and resource allocation. These themes are more specialized and peripheral, but highly developed and have insignificant external ties.

It can be noticed that the topics investigated in the current paper (XAI and privacy) are motor themes, of primary interest among researchers. As stated above, motor themes are characterized by both high centrality and high density (Herrera-Viedma *et al.,* 2020). These themes can drive innovation and future research directions. Researchers focus on these themes to advance knowledge, develop new theories, and create novel applications. Understanding motor themes helps researchers, policymakers, and funding agencies identify critical

areas for investment and development. It also helps in setting research agendas and priorities.

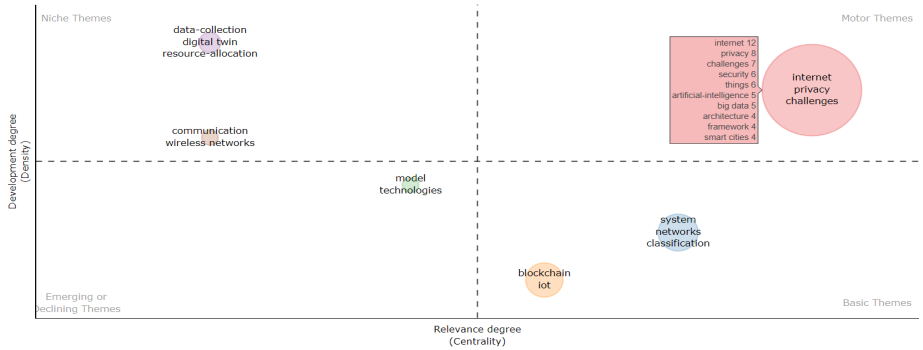

Figure 5. Thematic map

Table 2 presents the most 10% influential authors based on the most cited documents from the data set. All the papers were published in journals from quartile 1 (IEEE Communications Surveys & Tutorials and IEEE Internet of Things Journal) and quartile 2 (IEEE Access) according to Web of Science classification reflecting their popularity and central importance. These journals are also in Zone 1 and Zone 2 in Bradford's distribution (according to classification derived by Bibliometrix 4.0.1). This is based on Bradford's Law, which assumes that a relatively small number of journals publish most significant scientific papers.

Table 2. Most cited documents

Authors	Title	Keywords	Total Citation	Total Citation per Year
(Nguyen *et al.*, 2021)	Federated Learning for Internet of Things: A Comprehensive Survey	Federated Learning, IoT, AI, ML, privacy	347	86.75
(Zhang and Tao, 2020)	Empowering Things with Intelligence: A Survey of the Progress, Challenges, and Opportunities in Artificial Intelligence of Things	IoT, AI, DL, Cloud/Fog/Edge Computing, security, privacy, sensors, biometric recognition, 3D, speech recognition, machine translation, causal reasoning, Human-Machine Interaction, smart city	264	66.00
(Alsamhi *et al.*, 2019)	Survey on Collaborative Smart Drones and Internet of Things for Improving Smartness of Smart Cities	smart city, energy consumption, smart drone, IoT, pollutions, gathering data, Internet of Drones disaster, public safety, security and privacy,	182	30.33

Authors	Title	Keywords	Total Citation	Total Citation per Year
		collaborative drone.		
(Yu *et al.*, 2020)	When Deep Reinforcement Learning Meets Federated Learning: Intelligent Multi-Timescale Resource Management for Multi-access Edge Computing in 5G Ultra Dense Network	Multi-access Edge Computing, Computation Offloading, Service Caching, Ultra Dense Network, Blockchain, Deep Reinforcement Learning, Federated Learning	153	38.25
(Yu *et al.*, 2021)	A Blockchain-Based Shamir's Threshold Cryptography Scheme for Data Protection in Industrial Internet of Things Settings	Industrial IoT, data protection, blockchain, Shamir secret sharing	81	27.00

5. CONCLUSIONS

The paper analyzes a set of research projects in the field of smart cities, funded under European Union programs from 2014 to 2024, with the aim of identifying the challenges and AI-related solutions encountered and proposed within them. After identifying the black box nature of AI technologies and their impact on the privacy of personal data, the location and movement data of residents and visitors in smart cities, the paper focuses on these aspects, investigating them within the IEEE Xplore database of scientific papers. The reason for selecting this database is the technical nature of the published works.

The benefits of using the XAI approach are related to an increase in transparency, trust, control, efficiency, fairness, ethical compliance, accountability, bias mitigation, privacy and security of AI technology in smart cities. All these characteristics contribute to a more responsible, socially oriented implementation of AI. Regarding the privacy, we noticed that a significant variety of techniques are used for its assurance, such as the "classic" encryption, differential privacy, anonymization, supplemented by edge computing, multi-party computation, Federated Learning, Machine Learning and Distributed Ledger Technology (blockchain).

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BETWEEN POLITICS AND ECONOMICS: FINDING DETERMINANTS IN INCREASING THE FINANCIAL STABILITY OF THE EUROPEAN CITIZENS

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Abstract
Recent developments in international economics have certainly increased the attention of European citizens to the phenomenon of financial stability. However, the present research aims to analyse the impact of different political and economic factors on the financial stability of European citizens in a pre-pandemic era. In order to determine whether or not such an impact exists, we have used panel data analysis covering 26 of the 27 EU countries over a 10-year period, between 2010 and 2019. The statistical research has indeed shown us the link between different variables, both economic and political, with the financial stability of European citizens, which can be taken into account by political decision-makers.
Keywords: *European Union; financial stability; institutions; doing business; infrastructure.*
JEL Classification: J6, K11.

1. INTRODUCTION

The contemporary era has been, and still is, the theatre of some quite disruptive social, economic and political events, including the effects caused by the 2008 financial crisis, the threats created by the refugee crisis that peaked in Europe in 2015 and, not least, the Coronavirus pandemic that started towards the end of 2019. All of these events, marked by their spectacular yet unpredictable nature, have called into question 21st century consumerism, a paradigm to which Western citizens had become accustomed, and then re-acclimatised after the effects of the 2008 crisis had been mitigated. So, the transition period between the 2008 financial crisis and the pandemic crisis of 2020 was not without its obstacles, but it led Western citizens (including politicians) to believe that they

would be better prepared for the re-emergence of unforeseen global events, but the reality proved otherwise.

With these premises in mind, the question of the present research will be: *which economic, political or structural factors can increase financial stability?*

Of course, from this research question, other sub-questions arise, such as:

Q1: What does "financial stability" mean?

Q2: How can it be quantified?

Q3: Are there significant differences at European level in the financial stability of citizens? If so, what are the causes for such differences?

For the first two sub questions we will undertake a short literature review (also citing one of our previous research projects), while for the third one we will utilize also statistical methodology.

Considering the questions presented above, the main objective in the present research is, in the first instance, to identify and quantify the variable of financial stability (we will try to draw a perspective on this area ourselves, both descriptive and quantifiable) and afterwards, once we have clearly established what we mean in this research by the term "financial stability", our objective will be to present a statistical model on this variable, trying to understand which factors can cause an increase in the financial stability of European citizens.

We also need to consider the following research hypothesis:

H1: There are tangible differences between EU countries in terms of financial stability, differences visible also at regional level

H2: An increase in technological progress can also lead to an increase in financial stability

H3: Increased economic freedom may lead to a higher degree of financial stability

H4: Better infrastructure ultimately leads to increased financial stability

H0: There is no link between an increase in the level of the above-mentioned variables and an increase in financial stability

To test these hypotheses, we will focus on data collection and elaboration (especially for Hypothesis 1) and then, using regression equations with panel data, we will retain which of the hypotheses are valid or, in extremis, whether *Hypothesis 0* is the one that represents reality.

2. LITERATURE REVIEW SUMMARY

Financial stability is a broad area and can be approached from both a macroeconomic and microeconomic perspective. Many authors and financial institutions have tried to deal with this phenomenon and, in this sense, we can present a summary of the different definitions and directions in which this concept is heading, comparing what researchers, financial specialists and various authors affirmed, with the definitions given by financial institutions.

A first definition could be found in the 1960s, when Smythe (1968) considered that the financial stability of a household mainly comprises the relationship between income, expenditures, and the ability to make provisions for handling sudden changes in the household's financial situation. Schinasi (2004**)**, on the other hand, affirmed that financial stability is a broad concept, encompassing different aspects of finance (and the financial system) - infrastructure, institutions and markets. We can therefore observe an initial difference in the approach to this concept, which is also highlighted by the definitions presented by Ramlall and Albulescu.

Ramlall (2018) underlines that financial stability can be defined as an example of how problems in the financial system can affect the economy, while Albulescu (2009) emphasizes that financial stability can be defined as the financial system capacity to carry out appropriately its functions during an undetermined period, by correcting the imbalances frequently occurring in its operational mechanisms. For Mande *et al.* (2020), financial stability (instability) from the perspective of the stock market activity is measured as the 360-day standard deviation of the return on the national stock market index.

We can therefore observe the flexibility that this phenomenon has among different researchers, which, de facto, is also reflected in the definitions offered by the world's main financial institutions and by the National Bank of Romania.

The European Central Bank (2016) considers the concept of financial stability as a synonym for a financial system that can withstand shocks without major disruption, while the Federal Reserve (2024) affirms that a financial system is considered stable when banks, other lenders, and financial markets are able to provide households, communities, and businesses with the financing they need to invest, grow, and participate in a well-functioning economy—and can do so even when hit by adverse events, or "shocks". Broadly speaking, we can affirm that the definitions offered by the two great "titans" of Western finance are relatively similar.

We retain also the World Bank (2016) definition, in where we found that a financial system is in a range of stability when it dissipates financial imbalances that arise endogenously or because of significant adverse and unforeseen events.

For reasons of geographical proximity, we will also take into account the definition given by the National Bank of Romania (Banca Națională a României, 2023): "Financial stability is a global public good, characterised by non-rivalry and non-excludability. This public good cannot be provided exclusively by the market, with the central bank and other state institutions playing an important role in ensuring financial stability. Also, given Romania's open economy nature, a cross-border approach is needed, through policy coordination in this area, to achieve financial stability at national level". A more apt definition of what we wish to undertake in this analysis (how exactly we wish to define financial stability) may instead be as the one we presented in previous research, it being:

"The financial stability of individuals is that ability to achieve an economic status, in their own household, which allows them, firstly, the access to minimum living conditions and, secondly, to financially survive at unforeseen economic circumstances" (Pricop, 2023). In this case, we are talking about a reworking of Smythe's definition and an adaptation to our times, using also the directions opened by all the authors and financial institutions cited above.

3. METHODOLOGY

In the present research we aim, through panel data analysis, to identify the independent variables that may cause a decrease or an increase in the level of financial stability of European citizens. To undertake this objective, however, it is necessary to quantify financial stability in our own terms, the first step being therefore to stipulate an aggregate indicator for calculating financial stability. In our view, a suitable indicator for calculating financial stability would be the following:

$$\text{Financial Stability} = 100 - (\text{Unemployment} + \text{Inability to make ends meet} + \text{Inability to face unexpected financial expenses})/3 \quad (1)$$

For example:

Table 2. Methodology of stipulating the aggregate indicator

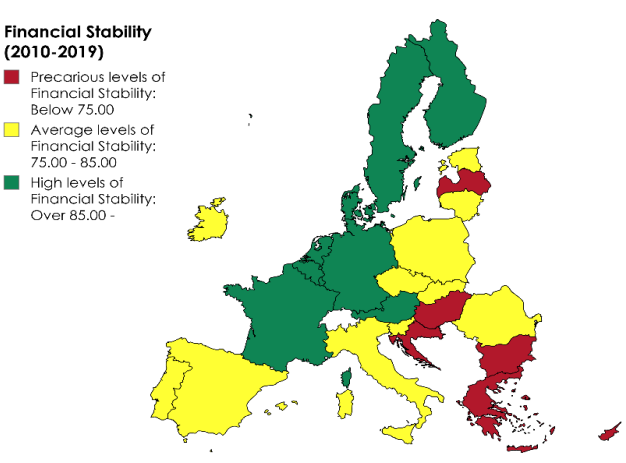
Country	Year	UNP	IMEM	IFUFE	FS Score
Austria	2010	3,4	5,9	25,0	88,6
Czech Republic	2015	3,3	7,8	36,0	84,3
Romania	2019	2,7	12,4	44,3	80,2

Source: own elaboration

The analysis covered 26 of the 27 EU countries, as there was insufficient data for Malta and our preference was to exclude it completely from the research, and the period analysed was between 2010 and 2019. A summary of the evolution of financial stability in the 26 EU countries under analysis can be seen in Figure 1.

When it comes to independent variables, things get a little more complicated because to a greater or lesser extent, everything can influence financial stability. But, to have a more comprehensive approach, we turned to the political and economic institutions, cause the institutions likewise financial stability doesn’t have a proper definition. Institutions in the general sense represent the rules of the game, and organizations are the players (North, 1991). Institutions set the framework for action; the organizations are agents of institutional change. In North D.C.'s conception (1990), institutions represent constraints created by people, to give form to human interaction (North, 2003),

to achieve a goal considered desirable by society, in this case ensuring financial stability (Mușchei, 2021).



Austria	89,64
Belgium	87,26
Bulgaria	70,20
Croatia	70,90
Cyprus	71,17
Czech Republic	84,93
Denmark	88,78
Estonia	83,25
Finland	88,14
France	85,76
Germany	87,81
Greece	68,40
Hungary	72,03
Ireland	77,14
Italy	80,58
Latvia	69,86
Lithuania	76,64
Luxemburg	90,16
Netherlands	89,87
Poland	80,84
Portugal	79,32
Romania	75,54
Slovakia	82,05
Slovenia	81,76
Spain	78,02
Sweden	90,32
European Union	80,78

Source: own elaboration

Figure 1. Financial stability means for the period 2010-2019

These rules are what determine the structure of incentives, which can either encourage human behavior to achieve a goal or discourage/limit this behavior. Most of the time, due to uncertainty in the socio-economic-political environment, unpredictable situations, imperfect information, and the presence of risk, people tend to create institutions, precisely to secure business, exchanges and finally stability in a general sense, even more so, financial stability in a particular sense, especially in our case. Other definitions of institutions can be: institutions represent laws/rules, which reflect codes of behavior that most individuals impose by their own will (Sugden, 1986), institutions are formal rules, compliance procedures and standard modes of operation that structure the relationship between individuals politically and economically (Hall, 1986), contemporaries such as Daron Acemoglu and James Robinson, for example, define institutions as a broad set of arrangements that influence various economic interactions between individuals, including relationships economic, political and social between households, individuals and firms. Institutions are also the rules, regulations, laws and policies that influence economic incentives (Acemoglu, 2008) or institutions are seen as establishing a framework of a structure that reduces uncertainty and promotes efficiency – thus contributing to economic performance (Iwanow, 2008). What is common to the definition of institutions, and which is the subject of the present study is: laws/rules/constraints-that influence human behavior between cooperation or division.

Depending on the criteria for classifying institutions, they can be formal/informal or official/unofficial. According to the field of analysis, institutions can be political, economic or social. In the present analysis, we focused our attention on formal/official institutions, which refer to written rules, adopted by the state, the legislative framework i.e. the laws of a state regarding a certain field, and on economic ones, rules that define the allocation of resources, the production and distribution of goods and services and those rules that shape the economic environment in which companies and individuals act.

Being too general, measuring and quantifying institutions becomes very difficult. Today, to a greater or lesser extent any database means a set of institutions. So, there are a multitude of methodologies for measuring institutions. However, to cover as wide a spectrum as possible of the institutional framework, we focused in this article on two different databases that measure the same rules of the game, from political and economic points of view.

Firstly, we used the database formulated by the "The Global Competitiveness Report". The GCI (Global Competitiveness Indicator) is a composite indicator made up of 12 other indicators, and these 12 indicators in turn are made up of other indicators. In total, there are 103 indicators distributed over 12 pillars. This database is unique and is used by most academic institutions. It measures the economic quality of each state, based largely on productivity (labor and capital), since productivity is the variable that best explains long-term economic growth and development. The GCI 4.0 is a compass for policymakers and other stakeholders: it guides what matters for long-term growth. The quality of the institution is numbered from 1 to 7, (1 – means a very low/bad quality of the institution, and 7 has the best quality).

So, the independent variables are: 1) Institutions, 2) Infrastructure, 3) Macroeconomic stability, 4) Health and primary education, 5) Higher education and training, 6) Goods market efficiency, 7) Labor market efficiency, 8) Financial market development, 9) Technological readiness, 10) Market size, 11) Business sophistication, 12) Innovation. For obvious reasons, we excluded pillar number 4: macroeconomic stability.

Secondly, we also focused our attention on the database from the "Doing business" reports that measure the quality, efficiency and effectiveness of the regulation. Like the Global Competitiveness Report, this Report plays an important role for decision makers, the economic environment, entrepreneurs and society in general. Over time, this report has inspired hundreds of reforms in terms of best practices, and there has even been a certain degree of convergence of best practices that are in favor of business. Without clear, well-established and above all respected rules, modern business cannot exist. Where, for example, the market fails to produce good results, a qualitatively regulated institutional framework can ensure fruitful results. So, this report measures the quality of regulation by measuring a set of 10 main indicators and others derived

from these 10 indicators, we analyzed the following: Starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, Trading across borders, enforcing contracts and Resolving insolvency. Many important policy areas are not covered by the Doing Business Report, like the macroeconomic stability, the development of the financial system, the quality of the labor force, the incidence of bribery and corruption and the market size or lack of security.

4. RESULTS AND DATA INTERPRETATION

As mentioned above, we will test, through regression equations, both the variables provided by the World Bank and those in the Global Competitiveness Report. However, it is also necessary to describe the independent variables before undertaking the statistical analysis itself. For our analysis, we selected the following variables:

- **Resolving Insolvency** evaluates the efficiency, cost, outcomes, and recovery rate involved in the process of dealing with commercial insolvencies, along with the robustness of the legal framework that handles such cases. This metric includes two main components: the strength of the insolvency framework index, which looks at the quality of laws governing debtor, creditor, and court interactions, and the recovery rate, which examines the amount recovered by secured creditors, the present value of debts recovered, and the overall success rate of insolvency proceedings.
- **Enforcing Contracts** measures the duration and expense associated with settling a commercial dispute through a local trial court and includes an assessment of the quality of judicial processes. This indicator evaluates if each country has implemented best practices that enhance the efficiency and quality of the court system.
- **Paying Taxes** encompasses the number of payments, time, and total tax and contribution rate necessary for businesses to fulfill tax obligations, including post-filing activities. This indicator includes a wide array of taxes and contributions, such as corporate income tax, social security contributions, property-related taxes, transfer taxes, dividend taxes, waste collection fees, and other minor levies. It transcends traditional definitions of taxation by encompassing all compulsory charges that affect business financial statements, not merely government revenue. This measure reflects the aggregate number of payments, the modes and frequencies of these payments, the filing regularity, and the number of administrative bodies involved. It also tracks changes in the tax obligations and administrative burdens of medium-sized enterprises, focusing on the annual compliance with VAT refunds and tax audits.

- **Infrastructure** is a multifaceted indicator that evaluates the quality and extent of infrastructure, including roads, railways, ports, air transport, electricity supply, and telecommunications. This measure is critical for economies reliant on foundational factors. Comprehensive and efficient infrastructure is essential for economic functionality, enabling entrepreneurs to transport goods and services efficiently and securely, and facilitating workforce mobility. Dependable electricity and a robust telecommunications network are vital for uninterrupted business operations and effective information exchange, thereby enhancing economic productivity and decision-making efficiency.
- **Technological Readiness** examines the availability and adoption of the latest technologies, firm-level technology absorption, foreign direct investment (FDI) and technology transfer, internet usage, broadband subscriptions, internet bandwidth, and mobile broadband subscriptions. This indicator is key for economies driven by efficiency. It measures how effectively an economy adopts existing technologies to boost productivity, with a focus on information and communication technologies (ICTs) used in daily activities and production processes to improve efficiency and foster innovation. The origin of the technology is less important than the ability of firms to access, absorb, and utilize advanced products and designs. FDI plays a significant role in bringing foreign technology, especially in less technologically developed countries.

Considering this, descriptive statistics demonstrates us:

Table 3. Summary statistics of the observed variables

		FSMEAN	ENFCON	PAY TX	RES INS	INFRAS	TEH READ
N	Valid	260	260	260	260	260	260
	Missing	/	/	/	/	/	/
Mean		80.783	58.700	76.479	69.814	5.195	5.182
Median		81.583	67.704	76.470	73.615	5.390	5.145
Std. Deviation		7.919	21.368	17.503	13.832	0.736	0.653
Minimum		61.700	0.000	29.733	43.713	3.200	3.780
Maximum		91.966	85.245	100.00	93.894	6.580	6.500

Source: own elaboration

In the correlation matrix table, we can observe the followings results:

Table 4. The correlation matrix for all the variables

Variable/ Probability	FSMEAN	ENF CON	PAY TX	RES INS	INFRAS	TEH READ
FSMEAN	1.000					
ENF CON	0.355	1.000				
PAY TX	-0.209	0.015	1.000			
RES INS	0.553	0.023	-0.195	1.000		
INFRAS	0.674	0.219	-0.235	0.520	1.000	
TEH READ	0.616	0.436	-0.010	0.405	0.600	1.000

Source: own elaboration

Standard errors are mentioned in parenthesis, significance levels are *** for 1%, ** for 5% and * for 10%, so while performing both random and fixed effects analysis, we retain:

Table 5. Panel data regression estimation of Financial Stability (2010-2019)

	Model 1			Model 2		
Variables	OLS	Random effects	Fixed Effects	OLS	Random effects	Fixed Effects
Observations	260	260	260	260	260	260
Countries	26	26	26	26	26	26
ENF CON	0.065 (0.016) ***	0.057 (0.022) **	0.060 (0.027) **	0.049 (0.017) ***	0.048 (0.023) **	0.052 (0.028) *
PAY TX	-0.035 (0.018) *	0.077 (0.028) ***	0.135 (0.036) ***	-0.046 (0.019) **	0.077 (0.029) ***	0.138 (0.036) ***
RES INS	0.150 (0.027) ***	0.125 (0.034) ***	0.106 (0.039) ***	-	-	-
INFRAS	3.709 (0.595) ***	5.520 (0.510) ***	5.383 (0.548) ***	4.804 (0.590) ***	5.926 (0.506) ***	5.596 (0.549) ***
TEH RED	2.724 (0.679) ***	0.938 (0.480) *	0.809 (0.498)	3.505 (0.700) ***	1.251 (0.479) ***	1.017 (0.499) **
CONSTANT	35.720 (3.236) ***	29.147 (4.473) ***	27.261 (5.255) ***	38.362 (3.375) ***	34.715 (4.298)	32.726 (4.907) ***
ADJ R^2	0.588	0.412	0.873	0.541	0.384	0.870

Source: own elaboration

For Table 6, the probability being 0.0091, fixed effects specification is preferred the random effects

Table 6. Results for the Hausman Test (Model 1)

Correlated Random Effects – Hausman Test			
Equation: Model			
Test cross-section random effects			
Test summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	15.319389	5	0.0091

Source: own elaboration

For Table 7, the probability being 0.0035, fixed effects specification is preferred the random effects

Table 7. Results for the Hausman Test (Model 2)

Correlated Random Effects – Hausman Test			
Equation: Model			
Test cross-section random effects			
Test summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	15.682825	4	0.0035

Source: own elaboration

The analysis of the data performed above shows how both models presented fit with fixed effects. The analysis of the data performed above shows how both models presented fit with fixed effects.

Model 1 is a model in which there are five predictors: Of these, however, only the first four are statistically significant. On the other hand, in the second model presented, we have removed the variable "Resolving Insolvency" and we have observed how, in this case, the last variable presented (i.e. Technological Readiness) also becomes a statistically significant variable.

Therefore, we can explain this phenomenon through the two models.

5. CONCLUSIONS

The present research has shown us, first, how the phenomenon of financial stability is a phenomenon that requires in-depth study, as it is both complex and open to different interpretations. It was necessary to note the various specialist

opinions in the field on this concept and to consider the various areas of extension of the study of such a phenomenon. Then, in turn, we presented our understanding of financial stability, mentioning previous research we had undertaken, where we had laid the theoretical foundations. After answering the first research sub question through the procedure mentioned above, we went on to attempt to answer the other two sub questions, presenting our means of calculating financial stability and the observable differences, at the European Union level, that such a methodology entails. By doing so, we have partially answered the research question which economic, political or structural factors can increase financial stability. To fully answer the research question, it was necessary to undertake a statistical analysis using regression equations with panel data. In doing so, we identified 5 independent variables that can predict increasing or decreasing financial stability: enforcing contracts, paying taxes, resolving insolvency, infrastructure and technological readiness (the first three from the World Bank and the last two from the Global Competitiveness Index).

Therefore, we can say that financial stability can be estimated by both economic and institutional variables.

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THE DEVELOPMENT OF THE REGULATIONS REGARDING THE JURISDICTION AND THE LIQUIDATION OF THE COMMERCIAL COURT IN THE REPUBLIC OF MOLDOVA

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Abstract
This article presents the development of the regulations regarding the general competence of courts and other jurisdictional bodies in the Republic of Moldova and Bessarabia. In particular, the causes and reasons for the liquidation of the District Commercial Court in the Republic of Moldova, which essentially changed the regulations regarding general jurisdiction, were exposed. Special attention was also paid to researching the development of the general jurisdiction and other jurisdictional bodies in the Republic of Moldova, an aspect that highlights the general jurisdiction of the Commercial District Court that was liquidated. Normative acts affecting the functionality of several jurisdictional bodies from the point of view of the institution of general competence were also analyzed. Also, some normative and legislative acts in this field are analyzed which are currently in force in the Republic of Moldova, but which require certain essential improvements. Thus, proposals were submitted to amend and supplement the legislation to improve the legal framework in this area.
Keywords: *jurisdiction; court; commercial; constituency.*
JEL Classification: K34, K40.

1. REGULATION OF GENERAL COMPETENCE OF THE COURTS IN BASSARABIA UNTIL 1964

In order to establish the general competence of the courts, it is necessary to identify the points of contact that exist between the activity of the courts and that of other bodies of jurisdiction or with jurisdictional activity to which the law for their organization and operation has recognized the possibility of solving some civil cases in their field of activity (Budă, 2020). In Bassarabia, with its annexation in 1812 by the Russian Empire, the tsar sought to preserve local laws and customs and decreed the administration of justice through a civil administration department, established according to the Regulation of July 23, 1812, regarding the provisional administration in Bessarabia. That department was appreciated by doctrinaires as judicial-police, because it had three colleges: one for the settlement of civil disputes, the second - for the examination of

crimes and the third - for the administration of the police (Boldur, 1929). This Regulation provided for the judicial and police powers of each individual college, which were easily delimited. In 1862 in the Russian Empire, in the second half of the century. in the 19th century, the substantial modification of the judicial system was pursued, and under the auspices of a specialized commission in 1862, the principles of judicial organization and the new judicial procedure were elaborated (Chisari-Lungu, 2016).

For the civil judicial procedure, it was established:

1) the separation of the judicial power from the executive power;
2) settlement of civil cases by justices of the peace, tribunals, the court of appeal, the court of cassation;
3) the inclusion in the jurisdiction of the justices of the peace of actions with a small value, which due to the specificity could be settled in the territory and were not accompanied by the need to determine the right of ownership over a building;
4) examination of the merits of the civil case in at most two courts;
5) examination in the first instance by the tribunal of all causes, which did not belong to the jurisdiction of the justices of the peace, all its decisions being subject to appeal within the appeal court;
6) the resolution by the court of appeal of all cases in which there were final decisions, these being, subsequently, subject to cassation only in certain cases provided by law;
7) the presentation by the prosecutors of the preliminary conclusions in the cases that had tangents with the interests of the treasury and in other cases established by law;
8) making the speech in public court sessions not by the secretary, but by one of the members of the court, who was entrusted with the examination of the case;
9) the examination of cassation requests was under the jurisdiction of a single court within the entire empire, namely, the Court of Cassation within the Senate;
10) establishment of authorized representatives for the protection of the rights of persons in litigation, in case they could not appear in person in the process;
11) the execution of court decisions belonged to the competence of judicial executors (Chisari-Lungu, 2016).

All these changes mostly aimed to modernize the regulations of the general jurisdiction of the courts, as well as the jurisdictional jurisdiction. However, the proclamation of a principle of law, even if it refers to a jurisdiction based on principles or general provisions, remains a formal interpretation, and not a normative act, as the judge announces rather than imposes the law (Shcherbanyuk, Gordieiev and Bzova, 2023).

2. THE REFORM OF THE COURTS IN BASARABIA

In Bassarabia, these reforms of the judicial system began in 1863. At the local level, two courts were formed: 1. The district justices of the peace; 2. The county congress of justices of the peace. The establishment of the competence of the justices of the peace for the settlement of a case took place, considering two criteria: the patrimonial nature of the litigation and the size of the action. The justices of the peace resolved only cases of a patrimonial nature, and those of a non-patrimonial nature, only if the law established this. As an example, the right to education over the child of divorced parents could be established by the justices of the peace, and disputes related to the defense of copyright could not be resolved by this court. It draws attention to the fact that the actions whose object was immovable property were not within the jurisdiction of the justice of the peace, and in Bessarabia the land ownership of both the peasants and the peasants who became owners on the basis of the social reform was very widespread, but it could be defended only by addressing the Chisinau Court, and not the justices of the peace. The county congress of justices of the peace had the status of a second-degree court (Chisari-Lungu, 2016). We note that in all these listed cases, the jurisdiction of the justices of the peace was regulated in detail in order not to admit certain legislative factors of corruption.

All these civil cases listed above belonged to the exclusive general jurisdiction (Zembrzusk, 2019) of the justices of the peace. However, there were also regulations regarding general contractual competence. Thus, in 1871 in Bessarabia, the voloste judges were created and were competent to resolve all disputes arising between peasants. So, they could also appeal to arbitration, or jurisdiction in the case of arbitration is called jurisdiction-jurisdiction (Munteanu, 2020). The peasants were also proposed to appeal by mutual agreement to an arbitral judgment, the decision of which was fixed in the voloste register, after which it became definitive (Chisari-Lungu, 2016). Therefore, it was left to the discretion of the peasants to choose the jurisdictional body to settle the civil dispute. This is where the first roots of the privatization of civil justice start (Zoroska, 2019), but the importance of the judicial system for the functioning of constitutional democracy is described as essential (Boryslavka, 2021).

Referral to arbitration took place by mutual agreement of both peasants in dispute, like an arbitration or compromise agreement. Civil disputes falling within the exclusive general competence of the district courts could not be the subject of arbitration. In particular, the disputes that could not be examined in arbitration were those regarding immovable property. This is because the use contrary to the purpose of the right to choose the court would constitute a so-called national "forum shopping" (Gajda-Roszczynialska, 2019). The said dispute was examined exclusively by the court in whose jurisdiction this real estate was located. So, when determining the jurisdiction of the court regarding

the settlement of disputes over immovable property, the rules of exceptional territorial jurisdiction were applied.

In the Civil Procedure Code of the R.S.S. Moldovan of 26.12.1964 (Supreme Soviet of The Moldova Soviet Socialist Republic, 1964), the regulations regarding general jurisdiction had a mixed character, since the rules regarding this legal institution were found within the provisions regarding material jurisdictional jurisdiction. Thus, according to art. 26 CPC of the S.S.R. Moldovan, entitled "The jurisdiction of the sector and municipal courts", provided: "The sector and municipal courts judge in the first instance:

1) all processes regarding civil, family, work, land, etc. legal relations, if at least one of the litigating parties is a citizen, except for the cases given by law in the competence of other bodies or courts;
2) complaints against the acts of the local public administration bodies, enterprises, institutions and organizations, as well as the persons with responsible positions, committed in violation of the law or exceeding the powers and which infringe the rights of citizens;
3) the causes with special procedure listed in article 244 of this code;
4) other reasons given by law in its jurisdiction".

So, these provisions contained both rules regarding the general competence of the courts, as well as regulations regarding the material jurisdictional competence. The first paragraph of the text para. (1) art. 26 CPC of the S.S.R. Moldovan (Supreme Soviet Of The Moldova Soviet Socialist Republic, 1964), stipulates regulations regarding the general competence of the courts since, on the one hand, it expressly lists the cases that are part of the exclusive competence of the District and Municipal Courts, and on the other hand, it excludes from the powers of these courts the processes given by law in the competence of other bodies or courts.

The mixed regulations of the general competence in the codifications of the procedural norms constitute a problem from the point of view of the clear perception of the essence of these provisions with others stipulated in the special laws. All this considering that, according to the nature of this legal institution, its regulations are to be provided in the civil procedural codifications, as a provision of the framework law for the other legal norms regarding the general competence that we find in many other legislative acts (Avornic, 2009). In these laws adjacent to the framework law, there are special rules regarding general jurisdiction for certain concrete legal relationships regarding the specifics of general jurisdiction regulations in the legal system). For this reason, the provisions relative to the general jurisdiction of the Code of Civil Procedure of the S.S.R. Moldovan from 1964 was not in the most successful consonance with the other provisions of other legislative acts that stipulated special legal norms regarding general jurisdiction.

A specific feature and appreciated by us regarding the regulation of the analyzed legal institution from the Code of Civil Procedure of the S.S.R. Moldovan (Supreme Soviet Of The Moldova Soviet Socialist Republic, 1964), was that the rules regarding general competence were stipulated in the general part of this legislative act, but those regarding jurisdictional competence were provided in the special part. This correlation between the regulations of general competence and those regarding jurisdictional competence is the most perfect, because the regulations of the first include the second, which characterizes a Code of Civil Procedure systematized in the general part and the special part. Unfortunately, in the Code of Civil Procedure of the Republic of Moldova there is no such correlation of these regulations, which leads us to propose by law ferenda to transfer the regulations on jurisdictional competence from Chapter IV, to Title II of the Code of Procedure Civil Code of the Republic of Moldova (Parliament of the Republic of Moldova, 2003), and in this title a new chapter with the name "Jurisdictional jurisdiction in civil cases" should be provided.

3. THE SPECIFIC REGULATION OF GENERAL COMPETENCE IN THE CODE OF CIVIL PROCEDURE OF THE REPUBLIC OF MOLDOVA

A successful regulation of general competence, from the point of view of respecting the principle of the unity of legal regulations and the correlation of the system of normative acts set forth in the local doctrine (Negru and Cojocaru, 1997), existed in the Civil Procedure Code of the Republic of Moldova of 30.05.2003 in the version which was provided by Law no. 244 of 21.07.2006 (Parliament of the Republic of Moldova, 2006) for the amendment and completion of the Code of Civil Procedure of the Republic of Moldova. In that version, the general competence was regulated in a distinct chapter entitled "Chapter III. General competence", and jurisdictional competence in Chapter IV entitled "Jurisdictional competence". Chapter III regulated the jurisdiction of the courts (art. 28 CPC), the jurisdiction of the economic courts (art. 29 CPC), the transfer of the dispute to arbitration (art. 30 CPC), the jurisdiction in judging related claims (art. 31 CPC). The competence of the District Economic Court could be called a jurisdictional competence (Deleanu, 2013). This is the dual system of regulating the competence of jurisdictional bodies.

We mention that general competence and jurisdictional competence were correctly systematized in two distinct chapters, because they constitute two different legal institutions and have different regulatory objects, because they regulate distinct legal relationships. In chronological order, the general competence is to be regulated first and, subsequently, the jurisdictional competence, because the latter achieves a continuity of the investigated legal institution. Pursuant to the provisions of the general contractual jurisdiction, the parties through a contract choose, under the law, the jurisdictional body for the

resolution of the dispute that has arisen or that may arise in the future. That contract excludes the jurisdiction of the courts to examine a particular dispute (Prytyka, Komarov and Serhij, 2021).

In art. 28 of the CPC, in the 2006 edition, was named "Jurisdiction of the courts", however these provisions encompassed the exclusive general jurisdiction of the courts, because they only listed the civil cases that were to be examined and resolved by the common law courts. The provisions of art. 28 para. (2) CPC stipulated: "Common law courts judge civil cases, with the participation of natural and legal persons, public authorities, regarding the defense of violated or contested rights, liberties and legitimate interests if the defense is not carried out by another judicial means, in special:

a) the causes in legal disputes arising from civil, family, labor, housing, land, ecological and other legal relations, based on the equality of the parties, on the freedom of contract and on other grounds for the emergence of rights and obligations;
b) the causes in disputes arising from administrative litigation reports;
c) reasons in special procedure, specified in art. 279;
d) the reasons for the claims that are examined in the procedure in the ordinance, specified in art. 345;
e) the reasons that arise in connection with the execution of acts of courts and acts of other authorities."

Although, from the point of view of the systematization of the legal norms of general jurisdiction, this regulation of the Civil Procedure Code of the Republic of Moldova in the version of the 2006 amendments was a success, the imperfection of these provisions consisted in the fact that no specific framework legal norm was stipulated general competence. In other words, art. 28 CPC only provided for the general competence of the courts, but it was omitted to stipulate the framework legal norm of this legal institution. From the analysis of all the legal texts analyzed above regarding general competence, the framework rule of general competence is: "Courts judge all civil cases for which the law does not provide for the competence of other bodies." But, in art. 28 of the Civil Procedure Code of the Republic of Moldova as amended in 2006, this rule was incomplete, because it referred only to its first part, i.e. only to the jurisdiction of the court.

It is appreciable that by Law no. 155 of 07.05.2012 (Law of the Republic of Moldova, 2012) for the amendment and completion of the Civil Procedure Code of the Republic of Moldova, this rule was incorporated into the legislation of the Republic of Moldova. Thus, according to art. 33 para. (1) The Code of Civil Procedure of the Republic of Moldova (Parliament of the Republic of Moldova, 2003) in the wording currently in force: "Courts judge all civil cases with the participation of natural persons, legal persons and public authorities regarding the defense of violated or disputed rights, freedoms and legitimate interests,

cases for which the law does not provide for the competence of other bodies." So, the last sentence fully complements the framework rule of general jurisdiction, which indicates the possibility of addressing the dispute to other jurisdictional bodies, not only to the court. However, it is also natural that this framework rule is provided by the Code of Civil Procedure, and not by another organic law, because civil procedural law is a branch of common law in which the legal norms that can compensate for the insufficiency of other regulations regarding possibility of offering the appropriate form of defense of legitimate rights and interests.

4. REASONS FOR THE LIQUIDATION OF THE CIRCUMSCRIPT COMMERCIAL COURT AND THEIR RATIONALE

Another essential change to the regulations regarding general jurisdiction, which was also a controversial topic (Raileanu, 2020) for Moldovan society (Cuza, 2020), is the liquidation of the Economic District Court, later named the Commercial District Court. Initially, their material competence was significantly reduced, after a failed attempt by the Parliament of the Republic of Moldova to liquidate it immediately, which was prevented by the Decision of the Constitutional Court no. 3 of 09.02.2012 for the control of the constitutionality of some provisions of Law no. 163 of July 22, 2011 for the amendment and completion of some legislative acts (Constitutional Court, 2012). The failure in the liquidation of the Economic Circuit Court and other specialized courts in the Republic of Moldova was the unprofessional "sincerity" exhibited by the author of the legislative project in arguing for the abolition of this specialized court. The Constitutional Court has negatively assessed the argument presented in the Informative Note to the draft Law no. 163 of July 22, 2011 for the amendment and completion of some legislative acts, such as: "the liquidation of the specialized courts is required "due to the fact that the specialized courts have demonstrated over time their inefficiency and lack of logical justification", as well as a measure of "fighting corrupt judges»." Thus, by Decision no. 3 of 09.02.2012 the Constitutional Court decided that the provisions of articles III-XV of Law no. 163 of July 22, 2011 for the amendment and completion of some legislative acts are declared unconstitutional.

Although the law by which the Economic Circuit Court and other specialized courts were liquidated was declared unconstitutional, this court being kept under a different name of the Commercial Circuit Court, its general exclusive competence was significantly narrowed, which significantly removed its importance in the system of judicial bodies, which was also one of the reasons for the subsequent merger with the Chisinau Court, which excluded this specialized court from the judicial system of the Republic of Moldova. The exclusive general competence of this specialized court from the Republic of Moldova was significantly reduced by Law no. 29 of 06.03.2012 for the

amendment and completion of some legislative acts (Parliament of the Republic of Moldova, 2012). According to art. 35 of the Civil Procedure Code as amended by Law no. 29 of 06.03.2012, the District Commercial Court judges in first instance:

a) contesting, under the law, arbitration decisions;
b) issuance of titles of forced execution of arbitral decisions;
c) reasons regarding the reorganization or dissolution of legal entities;
d) the reasons regarding the defense of the professional reputation in the entrepreneurial activity and in the economic activity.

As the jurisdiction of the Commercial Circuit Court was significantly limited, it had a low workload, for only three judges, which was the reason for the termination of this specialized court on April 1, 2017 following the reorganization of the judicial system in the Republic of Moldova based on Law no. 76 of 21.04.2016 (Parliament of the Republic of Moldova, 2016) regarding the reorganization of courts. In this sense, in the Informative Note to the draft Law on the reorganization of the court system (Ministry of Justice of the Republic of Moldova, 2015), it was mentioned that "The specialized economic and military courts were formed within the framework of the judicial and legal reform carried out in 1995-1996, reproducing the respective Soviet structures. The study mentioned above also shows that the District Commercial Court has a low workload, i.e. only for three judges. In accordance with the tendencies of European states to liquidate small courts, as well as according to the recommendations regarding the merging of courts with less than 5, 7 or 9 judges, this court does not justify its existence from the point of view of efficiency and material and procedural law applied". These consequences, possibly premeditated by the legislator, started from that significant limitation of the competence of the District Commercial Court.

It is important to note that in this Information Note the argument that the branch principle should be respected when creating a specialized court was mentioned. Reference was made to international experts with the same vision. Thus, it was mentioned: "Referring to the inclusion of economic courts in the general jurisdiction, the expert of the German Foundation for International Legal Cooperation, Jiirgen Thomas, in his report entitled "Observations regarding the planned inclusion of military and economic courts in the legal jurisdiction common" concluded that the retention of economic courts for the examination and settlement of disputes between legal entities is neither necessary nor opportune. [...] He also emphasized that "the division of jurisdiction into branches of law is less suitable for states with a small population and a low level of activity. In such states, for quality and financial considerations, as well as efficiency, it is recommended to limit the number of judges specialized in branches of law, namely, to general jurisdiction and administrative jurisdiction. For these reasons, in the Republic of Moldova it is not justified to specialize the

courts that must resolve economic disputes, which are of a civil nature, between natural and/or legal persons. " From this argumentation, the opinion of the author of the legislative initiative results that when delimiting the powers of a court of common law, compared to the specialized one, several branches of law coexist, at least encompassing the civil procedure and the administrative procedure (German Foundation for international legal cooperation, 2024).

Finally, under art. 1 paragraph (1) Law no. 76 of 21.04.2016 regarding the reorganization of the courts, the District Commercial Court ceases its activity. In particular, the activity of this specialized commercial court was terminated, because the common law procedure in the Republic of Moldova is not a dual one. In other words, it is not divided into civil procedure and commercial judicial procedure, as for example the Russian Federation in whose legal system there is arbitration procedure and civil procedure which takes the place of general jurisdiction.

5. CONCLUSIONS

Starting from the history of the development of the general competence regulations in the Republic of Moldova presented above, which had an interbranch but also experimental character, we find that reforms are still needed that would improve the legal framework of this legal institution.

Constantin Mavrocordat's reforms, starting from the implementation of the principle of separation of powers in the state, had an essential importance in the development of the regulations regarding the general competence in Bessarabia. As the judicial power was defined, the regulations regarding the general competence of the courts and other jurisdictional bodies, as well as the jurisdictional competence, were also essentially defined. The Civil Procedure Code of the R.S.S. Moldovan constituted a legislative act that successfully grouped the rules regarding the general competence of the courts and other jurisdictional bodies. An essential part was taken over in the Civil Procedure Code of the Republic of Moldova from 2003, but in which these concepts have been completely abandoned at the present time.

Significant limitation of the jurisdiction of a court in the Republic of Moldova, as in the case of the District Commercial Court, is one of the most common reasons for the liquidation of a court, which can negatively or positively influence the economic situation in that district. Abolition of this court was also since the common law procedure in the Republic of Moldova is not a dual one. In other words, it is not divided into civil procedure and commercial procedure. At the present time, common law courts also judge commercial cases, but the judges can meet about the knowledge of the legal matter in this field.

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DYNAMIC GENERAL COMPETENCE AND THE APPLICATION OF THE CRITERIA FOR DELIMITATION OF ECONOMIC DISPUTES

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Abstract
In this article I have presented the criteria for delimiting economic disputes from common law disputes, starting from the legislation of the Republic of Moldova. In particular, the criterion of the subjective composition of the material-litigious reports was highlighted. The regulations that were the basis of this criterion were analyzed under an evolutionary aspect in the Republic of Moldova.
Another particularity analyzed was the dynamic general competence, which is formulated by us as a new legal concept in delimiting the powers of jurisdictional bodies to resolve civil disputes, in particular economic disputes. This type of general jurisdiction is added by us in addition to the other types of general jurisdiction: exclusive general jurisdiction, alternative general jurisdiction, contractual general jurisdiction, conditional general jurisdiction, general jurisdiction in the case of related claims. Dynamic general jurisdiction is complimentary to other types of general jurisdiction and is largely based on the criterion of the subjective composition of economic disputes. This is because these categories of disputes are the most dynamic in the development of social relations.
Keywords: *jurisdiction; court; economic; dynamic; constituency.*
JEL Classification: K34, K40.

1. GENERAL DYNAMIC COMPETENCE OF COURTS TO RESOLVE ECONOMIC DISPUTES

"Competence" is closely related to the notion of "jurisdiction", because the latter word is included in the meaning of the word competence. The concept of jurisdiction comes from the Latin jurisdictio which means to pronounce the right, to say the right (*ius* – right; *dicere* – to say, to pronounce) (Lucaciuc, 2014). Jurisdiction is also defined as the ability of a court to exercise its power to judge at the expense of another (Mekki and Strikler, 2014). This points us towards a broader approach to general competence. Overall, the competence is the object of an institution with a large legal burden and a remarkable practical application (Ionescu, 2021). From what can be seen, the problem of general jurisdiction is not so complicated, but of finding a rational scheme of

jurisdictions that would include both the common competence and the specific competence of the jurisdictional bodies (Borchers, 2001). General jurisdiction delimits the powers of jurisdictional bodies to resolve civil cases. Therefore, the general jurisdiction also delimits the powers of the courts to resolve either common law civil cases or economic disputes.

However, the totality of the legal rules regarding general competence are not only of civil procedural law in which we also include forced execution (Trăilescu and Lungașu, 2021). In the legal doctrine, more criteria have been outlined for the delimitation of the powers of the jurisdictional bodies for the settlement of civil cases. These criteria are encompassed by the types of general jurisdiction, some of these types being: exclusive general jurisdiction, alternative general jurisdiction, contractual general jurisdiction, conditional general jurisdiction, general jurisdiction in the case of related claims. However, the problem is that the criteria for delimiting the powers of jurisdictional bodies when examining and resolving civil cases cannot be listed exhaustively. There are criteria that appear and disappear over a period to configure new kinds of general competence. The legislator can provide them only to realize his policy in the field of justice. In some cases, the specialized literature is also confused regarding the attribution of rules delimiting the powers of jurisdictional bodies to a certain type of general competence. Well, in the case of "Jurisdiction to judge related claims" stipulated in art. 371 of the CPC, there is no unified opinion in the local specialized literature, if it refers to general or jurisdictional competence. According to art. 371 para. (1) CPC "If the summons request contains several related claims, some of which are under the jurisdiction of the common law court, and others under the jurisdiction of a specialized court, all claims will be examined by the court of common law".

Thus, the author A. Bâcu, considers these regulations as part of the general competence (Bâcu, 2013), but another author does not attribute these regulations to the general competence (Belei *et al.,* 2016), although no argumentation of the position is formulated, probably due to the fact that there is no longer a specialized court, the District Commercial Court, which was liquidated in the Republic of Moldova, a circumstance that excludes raising more problems related to this kind of competence. In the Romanian specialized literature (Deleanu, 2013), as also provided in the Civil Procedure Code of Romania, art. 99, this kind of competence is attributed to jurisdictional competence.

In our view, the competence in judging related claims has a mixed character, that is, it is at the intersection between the object of regulation of general competence and jurisdictional competence. we accept an interdisciplinary approach not only by the fact that it involves the limitation of state power by legal norms, but also by the fact that it ensures the guarantee of human freedoms and a rationalization of power by state authorities by creating a normative and hierarchical institutional system (Deacon, 2017). All this from the

consideration that this type of competence delimits, on the one hand, the powers of specialized courts, which have their own subsystem within the system of courts, such as the Economic Circuit Court which had as a hierarchically superior court the Economic Court of Appeal, general competence, and on the other hand, it delimits the powers of some courts that do not have their own subsystem within the judicial system, for example, administrative litigation courts, substantive jurisdiction.

Although art. 371 para. (1) CPC provides a long-standing rule applied to the delimitation of the powers of specialized courts in the Republic of Moldova, however, by art. 201 of the Administrative Code of the Republic of Moldova (Parliament of the Republic of Moldova, 2018), a new rule was stipulated, apparently contrary to the one stipulated in art. 371 para. (1) CPC, we consider that these two regulations complement each other. Thus, according to art. 201 para. (1) The Administrative Code of the Republic of Moldova: "if the action in administrative litigation filed in the court contains inseparable claims of administrative law and civil law, they are examined by the competent court for examining the action in administrative litigation". So, being interpreted the provisions of art. 371, para. (1) of the CPC, and the provisions of art. 201 para. (1) Administrative Code of the Republic of Moldova, we can conclude that the provisions of art. 371 para. (1) CPC, are applied to the delimitation of the powers of the common law court from the specialized ones, other than the competent court for examining the action in administrative litigation. However, the provisions of art. 201 para. (1) The Administrative Code of the Republic of Moldova is applied to the delimitation of powers between common law courts and those competent for examining the action in administrative litigation. Thus, the meaning of these rules was left to the discretion of the courts. It did not rely on certain stable criteria for delimiting the competence of jurisdictional bodies. Therefore, the jurisdiction of the courts and the administrative jurisdiction are to be strictly delimited, and the respective diligence rests with the legislator (Cesare, 2019).

We notice that the policy of the legislator is a permanently dynamic one. It can be characterized by judicialization and no judicialization. It is a double opus, this pot evolves differently from where it goes to the height of its release to humanities and coexists in parallel (Cinamonti and Perrier, 2019). We, in this paper, do not rename competences in judging related claims in dynamic competence, we only exemplify that various rules are applied by the legislator that cannot be classified under certain criteria or types of general competence. For this reason, we group some dynamic rules in the way of general dynamic competence.

Not infrequently in the specialized literature, attempts are made to resolve the issue of assigning civil disputes to the competence of one or another jurisdictional body. Thus, the subjective criterion for assessing economic

disputes in the legal doctrine (the category of the subject participating in the civil legal report) is assessed starting from the definition of certain legal notions intrinsic to the economic field, especially professional activity. The authors S. Polici and I. Pushkarev in relation to the disputes arising from the economic evaluation activity mention: "Starting from the criteria of general competence, we can conclude that depending on the status of the subject performing the evaluation activity, the resulting dispute from the evaluation contract, the beneficiary who is a legal person or an individual entrepreneur, can be qualified as a dispute that is included in the competence of the arbitration judgment or the court of common law" (Polici and Pushkarev, 2014). We note that these authors qualify certain disputes as economic disputes based on several legal regulations, without relying on just one criterion. Therefore, to establish some powers of the judicial bodies, it is necessary to refer to certain additional regulations than the simple criterion for delimiting these powers, which has a dynamic character. Other authorities or institutions may have, based on an express legal provision, a special (exceptional) competence – that of resolving requests in certain matters (Spinei, 2017).

Considering the mentioned, the dynamic general competence is defined by us as that competence which delimits the powers of the jurisdictional bodies according to certain variable criteria and in most cases their essence is established following the overall interpretation of several legal norms or according to some general criteria whose application depends on the judgment of the court. This kind of general competence does not exist in the specialized literature, but we add it to all other kinds, because the opportunity for its existence derives from the following (Prisac, 2023): 1) the classic types of general competence up to the present moment do not include all the criteria for delimiting the powers of the jurisdictional bodies; 2) the legislation on general competence is in a permanent change, and the exposure of some types of general competence in the form of a closed and conservative system does not characterize this legal institution; 3) the legislator at each stage of the development of social relations develops new criteria for delimiting the powers of jurisdictional bodies, which may not fit within the classic types of general competence; 4) the criteria for delimiting the powers of jurisdictional bodies are so diverse that they cannot be included in the form of abstract types of general competence.

2. THE ESSENTIAL CRITERIA FOR DELIMITATION OF ECONOMIC DISPUTES

The delimitation of economic disputes is based on two criteria (Druzhkov, 1966), which, from those established by us, have been the basis of the delimitation of the powers of the jurisdictional bodies for a long time in the legal system of the Republic of Moldova:

1) the nature of the legal relations from which the dispute arose;
2) the subjective composition of the parties to the delimitation of the jurisdiction of the courts and other jurisdictional bodies.

In French doctrine, these criteria are identified in the form of rules delimiting the powers of administrative bodies from those of courts of law when resolving legal cases (Cadiet and Jeluand, 2020). The respective criteria were applied to the delimitation of the powers of common law courts and economic courts in the initial drafting of the Civil Procedure Code of the Republic of Moldova (Civil Procedure Code, 2003). Thus, the provisions of art. 29 para. (1) lit. a) The Civil Procedure Code of the Republic of Moldova, in the version of June 12, 2003, stipulated the following: "economic courts judge economic disputes arising from civil, financial, land legal relations, from other relations between legal entities, natural persons practicing entrepreneurial activity, without establishing a legal entity, having the status of an individual entrepreneur, acquired in the manner established by law". The Moldovan legislator used, in this case, both the objective criterion and the subjective criterion.

However, these two criteria caused controversial interpretations regarding the attribution of a civil case to the common law court or the economic courts, because they established an abstract delimitation of all these civil cases. The most question marks raised the words "economic disputes arising from civil legal relations", which were also highlighted in civil procedural law courses (Belei *et al.,* 2005). Partially, these criteria are still incorporated today in the legislation of the Republic of Moldova when delimiting the powers of public authorities. Thus, according to art. 54 para. (2) The Administrative Code of the Republic of Moldova, "if the law does not regulate material competence, the public authority whose activity is closest to the nature of legal relations is competent". However, in the actual delimitation of the powers of the jurisdictional bodies to resolve legal cases, these criteria are not cumulatively found in the legislation of the Republic of Moldova.

We believe that these two criteria that are the basis of the common general competence can constitute some configuration factors of the special criteria for establishing the competence of these entities. For example, when setting up a special rule of general competence resulting from the criterion "the nature of the legal relations from which the dispute arose" we identify it in art. 3 paragraph (2) from the Law on Arbitration no. 23 of 22.02.2008, which provides: "Claims related to family law, claims arising from lease contracts (rent) of residential premises, including disputes regarding the conclusion, validity, termination and qualification of such contracts, claims and patrimonial rights regarding homes cannot be the subject of an arbitration agreement". Thus, in our opinion, the criteria of the common general competence can find both direct and indirect materialization through the special rules of the special general competence.

The above-cited author put the following two criteria (Druzhkov, 1966) as the basis of the common general competence, which, from those established by us, were the basis of the delimitation of the powers of the jurisdictional bodies for a long time in the legal system of the Republic of Moldova:

1) the nature of the legal relations from which the dispute arose;
2) the subjective composition of the parties to the delimitation of the jurisdiction of the courts and other jurisdictional bodies.

The respective criteria were applied to the delimitation of the powers of common law courts and economic courts in the initial drafting of the Civil Procedure Code of the Republic of Moldova. Thus, the provisions of art. 29 para. (1) lit. a) The Civil Procedure Code of the Republic of Moldova, in the version of June 12, 2003, stipulated the following: "economic courts judge economic disputes arising from civil, financial, land legal relations, from other relations between legal entities, natural persons practicing entrepreneurial activity, without establishing a legal entity, having the status of an individual entrepreneur, acquired in the manner established by law". The Moldovan legislator used, in this case, both the objective criterion and the subjective criterion.

However, these two criteria caused controversial interpretations regarding the attribution of a civil case to the common law court or the economic courts, because they established an abstract delimitation of all these civil cases. The most question marks raised the words "economic disputes arising from civil legal relations", which were also highlighted in civil procedural law courses (Belei *et al.,* 2005). Partially, these criteria are still incorporated today in the legislation of the Republic of Moldova when delimiting the powers of public authorities. Thus, according to art. 54 para. (2) The Administrative Code of the Republic of Moldova, "if the law does not regulate material competence, the public authority whose activity is closest to the nature of legal relations is competent". However, in the actual delimitation of the powers of the jurisdictional bodies to resolve legal cases, these criteria are not cumulatively found in the legislation of the Republic of Moldova, which can lead to the violation of several rights involving competence (Săraru, 2017).

As far as we are concerned, we do not recommend the re-incorporation of these criteria into the procedural legislation of the Republic of Moldova. We see their introduction into the national regulations of these criteria only through their materialization in the special rules delimiting the powers of the jurisdictional bodies, which would allow an accurate determination of the competence starting from the specific nature of the activity of the jurisdictional bodies. Thus, we consider that these two criteria that are the basis of the common general competence can constitute some configuration factors of the special criteria for establishing the competence of these entities. For example, when setting up a special rule of general competence resulting from the criterion "the nature of the

legal relations from which the dispute arose" we identify it in art. 3 paragraph (2) from the Law on Arbitration no. 23 of 22.02.2008, which provides: "Claims related to family law, claims arising from lease contracts (rent) of residential premises, including disputes regarding the conclusion, validity, termination and qualification of such contracts, claims and patrimonial rights regarding homes cannot be the subject of an arbitration agreement". Thus, in our opinion, the criteria of the common general competence can find both direct and indirect materialization through the special rules of the special general competence.

3. CONCLUSIONS

As far as we are concerned, we do not recommend the re-incorporation of these criteria into the procedural legislation of the Republic of Moldova. We see their introduction into the national regulations of these criteria only through their materialization in the special rules delimiting the powers of the jurisdictional bodies, which would allow an accurate determination of the competence starting from the specific nature of the activity of the jurisdictional bodies. The criteria of the common general competence can find both direct and indirect materialization through the special rules of the special general competence. However, these two criteria caused controversial interpretations regarding the attribution of a civil case to the common law court or the economic courts, because they established an abstract delimitation of all these civil cases.

The dynamic general competence is defined by us as that competence which delimits the powers of the jurisdictional bodies according to certain variable criteria and in most cases their essence is established following the overall interpretation of several legal norms or according to some general criteria whose application depends on the judgment of the court.

On the other hand, general criteria for delimiting the powers of jurisdictional bodies contribute to covering the gap of general competence in the settlement of civil cases, because not in all cases there are special provisions to delimit these powers.

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RETROACTIVITY OF TAX LAW AND SPECIAL CONFISCATION – PROPOSALS OF THE ROMANIAN LEGISLATOR, IN ONE SHOT, FOR RESIZING POSITIVE TAXATION?

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Abstract
Out of a desire to collect additional budget revenue, our legislator has abandoned the classic line and prefers a futuristic trend, operating innovatively. Thus, at the end of 2023, he decided to bring together in a single tax institution two major, sensitive and inexplicable problems of positive law: the retroactive application of stricter legal rules, more unfavorable to the private debtor, and the question of special confiscation in a tax offence that does not naturally and legally allow this, disguised in a tax decision for additional tax obligations and the avalanche of related tax accessories. However, in the obvious absence of a legal basis, these legislative initiatives tend to evaporate before they produce genuine legal effects.
Keynotes: *income tax; tax decision; confiscation; retroactivity; legality.*
JEL Classification: K34, K40.

1. INTENTION TO INCREASE BUDGET COLLECTION BETRAYED BY REGULATORY IMPULSES

All the changes formally made at the end of 2023 and coming into force on 1 January 2023, as well as those due to come into force on 1 July 2024, mark, in verbal and non-verbal language, a trend towards higher tax rates, the establishment of restrictive tax regimes, and an increase in the tax burden on taxpayers, whether they are individuals or legal entities.

Thus, even if we are aware that one of the ways in which the state intervenes in economic life is by "taking over part of the income of economic agents" (Costaș and Tofan, 2023) it is sufficient to highlight some of the substantial changes that will have a strong impact on the economic and social environment in the next period of time: the updating of the conditions relating to micro-enterprises, the increase of the ceiling to 60 gross minimum wages per country in the area of CASS, the increase of the VAT rate from 5% to 9% for certain supplies, including the supply of housing, the increase, not surprisingly, of excise duties for alcohol and alcoholic products, the introduction of the special tax of 0.3% for individuals who have residential buildings with a value

greater than 2.500.000 lei, or cars registered in Romania whose value exceeds 375.000 lei. Beyond the introduction of new variations in income tax, the increase in tax rates is a symbolic and traditional expression of the lack of regulatory inspiration and the tightness of the budget deficit.

2. THE GENERAL SPECIFICITY OF THE ACTION OF LEGAL RULES OVER TIME

It is well known that time flows continuously, in one direction, on the "axis" past - present - future. Time is not just a philosophical, physical or astronomical concept, from a legal point of view, time has its values. Thus, the law applies „in a time" or „in time", the intention being to show that on the axis or „arrow" of time, the legal cursor can be fixed at „n" moments in time. The initial moment in time is the moment of entry into force, which may differ from the moment of publication of the legal act. For example, as a rule, laws enter into force three days after their publication in the Official Gazette and emergency ordinances on the date of their publication in the Official Gazette. From the moment of entry into force, the legal act will naturally, logically and legally apply only for the future.

An infallible benchmark for the application of the law over time is the provisions of para. (2) of Article 15 of the Romanian Constitution, according to which the law applies only to the future, except for more favorable criminal or misdemeanor laws". Thus, the only exception to retroactivity allowed is the criminal or misdemeanor law which is more favorable to the accused or offender. The rationale is simple, the purpose of setting the principle of the application of the law for the future is to ensure that the addressees of the law are aware of it and comply accordingly before acting.

Compliance with a law that did not exist in the form it was intended to be applied at the time of the offence is not only unlawful but also absurd and even impossible. The normative command and the compliance requirements it impose must be possible, not just logical.

3. THE SPECIFICS OF TAX PROCEDURAL RULES AND THE ACTION OF TAX RULES IN RELATION TO FACTUAL SITUATIONS

According to the provisions of Art. 117 of the Fiscal Code. on the definition and taxation of income the source of which has not been identified: „Any income established by the tax authorities, under the terms of the Tax Procedure Code, the source of which has not been identified shall be taxed at a rate of 16% applied to the adjusted tax base. The tax authorities will determine the amount of tax and ancillary charges in the tax decision".

From 1 July 2024, the text of Art. 117 of the Fiscal Code. shall be amended in part and shall become final as follows: „Any income ascertained by the tax

authorities under the terms of the Code of Tax Procedure, the source of which has not been identified, shall be taxed at a rate of 70% applied to the adjusted tax base. The tax authorities will determine the amount of tax and ancillary charges in the tax decision". So the only change concerns the tax rate, which increases from 16% to 70%.

What is worrying, beyond the escalation of the legal rate in this way, is the provision introducing the change into the legal order and setting the scope of the new legal provisions. In accordance with the provisions of Article VII para. 1 letter b) of Act No. 296/2023, the provisions of item 13 shall enter into force as of 1 July 2024 and shall apply to tax decisions issued by the tax authorities as of the same date.

According to tax procedural provisions, tax decisions are issued in 3 situations: at the end of the documentary verification procedure, at the end of the tax inspection or at the end of the verification of the personal tax situation. The latter procedure is naturally in line with the hypothesis envisaged by the legislator by increasing the tax rate for the taxation of income whose source has not been identified.

Essentially, the verification of the personal tax situation by the central tax body is intended to provide an overall check of the personal tax situation of the individual from an income tax perspective. After the risk analysis is carried out by the tax body, in order to establish the risk for individuals of non-compliance in the declaration of taxable income as a significant difference between the estimated income in the risk analysis and the income declared by the individual and/or the payer for the same taxable period, and if it results in a difference of more than 10% of the declared income, but not less than 50,000 lei, individuals are to be notified in order to suggest them the possibility to correct their declarations and tax situation in advance.

According to the provisions of paragraph (4) of Article 138 of the Tax Code: „Personal tax situation means the totality of rights and obligations of a patrimonial nature, cash flows and other elements likely to determine the real tax situation of the individual during the period under review".

Verified person is obliged to submit a declaration of assets and income within the legal deadline, if requested to do so by the personal tax verification notice. This declaration of assets and liabilities is a complex one and provides an overview of the assets and liabilities of the person concerned during the period subject to verification.

To determine the income obtained by the individual during the period under audit, the central tax body shall use indirect methods of determining income, approved by order of the President of the A.N.A.F. Thus, according to Article 22 of Order no. 675/2018 of 15 March 2018 on the approval of indirect methods of determining income and the procedure for their application, the selection of indirect methods of determining income shall be made according to their specific

requirements, the tax situation of the individual under audit and the nature of the information or documents available. The 3 methods provided for by Order No 675/2018 are: a) the method of source and use of funds; b) the cash flow method and c) the net worth method.

Obviously, if the application of the methods leads to the conclusion that additional taxation is necessary, which must be substantiated by the report prepared by the tax authority, the tax decision will be issued in accordance with the provisions of Article 146 of the Tax Code. Issuance of the taxation decision is also imminent in the situation described in para. (3) of art. 146 C.pr.fisc. when „it is found that the tax returns, documents and information submitted during the verification procedure are incorrect, incomplete, false or if the verified individual refuses, during the same procedure, to submit the documents for verification or they are not submitted within the legal deadline or the person evades the verification by any other means".

Clearly, the verification of the personal tax situation is always for a retroactive period and never for a future or even present period to justify the application of the new 70% tax rate for the present. Moreover, a mere formal reference to the present is insufficient, given that, for example, the individual's assets include assets acquired 10 or 15 years ago.

4. CAN THE NEW 70% PERSONAL INCOME TAX LAW BE APPLIED TO SITUATIONS BEFORE 1 JULY 2024?

A new tax rate means a „new law" and this conclusion is verifiable everywhere in positive law: in criminal matters, a new penalty is equivalent to a new law, with a modification of the penalty regime (Streteanu, 2003) in civil matters, a new limitation period is equivalent to a new law and so on.

To discuss a legal rule in general and a fiscal rule in particular, it is sufficient to have a different (new) regulatory element. The change in the tax rate is probably the most convenient element of tax regulation, the benchmark, symbol and axe of the pejorative taxation promoted by the „plundering state". (Costaș and Puț, 2023)

The requirements of *vacatio-legis* and predictability of regulation have been partially met by the new regulatory interventions. Thus, even though a period of six months is allowed between publication in the Official Gazette and entry into force [Article 4(1) of the Tax Code], the provisions of Article 4(1) remain unapplied. 2 of Art. 4 of the Tax Code concerning the entry into force only from the first 1 January after the expiry of the 6 months, if we are dealing with an increase in existing taxes, duties or social contributions.

The application of the new tax law, as it has been configured and as it will enter into force on 1 July 2024, to past factual situations is unconstitutional. There is no plausible explanation for justifying the application of the tax rate for any day prior to the entry into force of the text of Article 117 of the Fiscal Code.

The mere justification of the substantive law resort - the necessity of taxation (in other limits, infinitely increased) does not justify the substantiation and reference to a procedural law resort - the issuing of the tax decision. Even if the tax decision is issued after 1 July 2024, it concerns a factual situation prior to the date on which the new tax law came into force.

Moreover, why set a procedural benchmark in the application of a substantive law provision when this way of reporting does not safeguard the retroactive and unconstitutional application of the tax rule? Probably also as a sample of the legal deconstruction that the state is preparing (Veitch, Christodoulidis and Goldoni, 2018), the bizarreness generated would be quite incomprehensible. For example, but without limitation, two checks on the personal tax situation start at the same time, but one is completed on 30 June 2024 and the other on 1 July 2024 with two tax decisions. The difference between them is only a few hours, but in reality it is 54% of the tax base, as a debit and obviously as a projection of at least double tax accessories. And the examples could go on exponentially and symbolically and mathematically.

Therefore, in our view, the application of the new tax rules should only apply for the future, i.e. for the situation of unidentified source assets in question after 1 July 2024, regardless of when the tax decision is issued. The principle of *tempus regit actum* or factum cannot be overridden solely by the unilateral manifestation of the legislator's will. Even the legislature is bound by the principles of law and the legal rules in force. The increase of certain rates in the field of income tax (e.g. in the case of dividends) or in the field of VAT (e.g. the reorganized reduced rates) does not overturn the principles of the action of the legal rule over time, but follows and is effectively valued, independently of the moment of the issuing of a tax decision in one of the three forms of tax control which allow it. (Costaș, 2016)

5. ARE WE DEALING WITH A SPECIAL FORFEITURE IN TAX ORDER?

Tax crime is different from criminal law, at least in terms of the principles of reference, the normative regulation (Betegon *et al.,* 1997), the function pursued, the nature and severity of the sanction. However, the question that naturally arises is whether it is possible to introduce an institution like the special confiscation in criminal matters in tax matters, „by will or not by will", „by word or by thought".

According to the provisions of Article 112 of the Criminal Code: „(1) Are subject to special confiscation:

(a) property produced by the commission of an offence under criminal law;

(b) property which has been used in any way, or intended to be used, in the commission of an offence under criminal law, if it belongs to the

offender or if, belonging to another person, the offender knew the purpose of its use;

(c) property used, immediately after the commission of the offence, to ensure the escape of the offender or the preservation of the benefit or product obtained, if it belongs to the offender or if it belongs to another person who knew the purpose for which it was to be used;

(d) property which has been given in order to induce the commission of a criminal offence or to reward the offender;

(e) property acquired through the commission of an act provided for by criminal law, if it is not returned to the injured party and in so far as it does not serve to compensate the injured party;

(f) property the possession of which is prohibited by criminal law.

In the case referred to in paragraph 1, the following shall apply (1) (b) and (c), if the value of the property subject to confiscation is clearly disproportionate to the nature and gravity of the offence, partial confiscation shall be ordered, by monetary equivalent, considering the damage caused or likely to be caused and the contribution of the property to it. If the property was produced, modified or adapted for the purpose of committing the offence provided for by the criminal law, it shall be confiscated in its entirety".

The question is legitimate, because if the legal effects of special confiscation are 100%, the effects of the 70% tax on the income of individuals with unidentifiable source are more serious than that, although in an elementary logic they could not be more serious than 100%. But, adding interests and penalties: 0.02 late interest, 0.01 late penalties, 0.08 non-declaration penalties, for a reasonable period of 2 or more years, we will exceed 100%. Although the institution of special confiscation operates only in criminal matters, in cases and under conditions which are limited and expressly laid down by law, it can also be found with the same legal implications in legal matters in which it is not normally used.

Moreover, if the value of the goods subject to confiscation is clearly disproportionate to the nature and gravity of the offence, the confiscation operates in part, by means of a proportional monetary equivalent, the income tax cannot operate in a nuanced manner, as the 70% tax rate and the subsequent accessory charges almost inevitably exceed the value of the goods concerned, which makes it a more severe institution in terms of legal consequences. In our opinion, even if the legislator did not intend to implement special confiscation in tax matters, because it neither substantiated nor affirmed it, the legal effects produced by increasing the rate to 70% exceed the purposes intended by the criminal legislator through special confiscation, which again appears inadmissible.

6. ILLUSIONS, DISAPPOINTMENTS AND CONCLUSIONS

The illusion of major and immediate tax collection will not overcome its condition *in concreto*. The disillusionment will be not only of the legislator who will be aware of this reality, but also of the taxpayers who no longer hoped for a compliant, objective and value-balanced administration of their subjective rights in the normative-fiscal field.

The conclusion is that our legislator has proved once again that he is in a hurry. In his desire to ensure a significant increase in collection, he has decided to lump together in one and the same tax institution two major, sensitive and inexplicable problems of positive law: the retroactive application of stricter legal rules that are more unfavorable to the private individual and the issue of special extra-criminal confiscation, disguised in a tax decision for additional tax obligations and related tax accessories.

The need for legal substantiation is indispensable to any change in the regulatory paradigm, just as any legislative change must be calibrated in such a way as to avoid harming other established legal institutions and to avoid irreparably damaging the rights and interests of the persons concerned. Without these two elements, the legal norm gives way to arbitrariness and ambiguity and loses its normative authority.

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RELEVANCE OF MASTER DATA MANAGEMENT AS PART OF DATA GOVERNANCE AND A CRITICAL FACTOR FOR CORPORATE SUCCESS: A SCIENTOMETRIC ANALYSIS

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Abstract
Master data management and data governance are critical in today's business world, as organizations increasingly rely on data to make informed decisions and gain competitive advantage. This article examines the relevance of master data management as an integral part of data governance for business success using scientometric methods. Through the systematic evaluation of specialist literature and research work, a comprehensive understanding of the importance of master data management and data governance is gained. The analysis identifies key concepts, trends and research gaps in the field of master data management and shows how effective management of master data strengthens data governance and thus has a significant impact on corporate success. These findings provide valuable impulses for companies to optimize their data strategies and gain a sustainable competitive advantage. The results also form the basis for further research based on design science research, supported by qualitative literature analysis and expert interviews in a real business environment, to construct a master data management artifact that is influenced by data governance experiences.
Keywords: *data management; data governance; quantitative analysis; scientometrics.*
JEL Classification*:* C80, O10, O25, O33.

1. INTRODUCTION

In an era characterized by an exponential increase in data (data is the new oil; The Economist, 2017), companies are faced with the challenge of managing this data effectively to gain valuable insights and increase their business success (BearingPoint, 2016; PWC, 2018). In this context, master data management (MDM) is becoming increasingly important as part of data governance (DG), as it forms the basis for efficient data management and use (Grosser, 2019; Mittelstand-Digital, 2022). Master data, as fundamental information about business units, products, customers and suppliers, is of crucial importance for a company's business processes and decision-making.

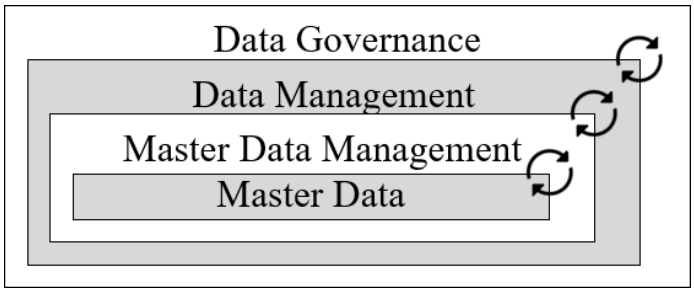
The integration of MDM into a comprehensive DG strategy is considered a critical factor for business success (Allen and Cervo, 2015). This integration not only ensures the quality, consistency and availability of data, but also enables

companies to meet regulatory requirements, minimize risks and identify opportunities. In essence, it is about understanding the interplay between MDM and DG and their impact on business success.

For this study, the researcher conducted a scientometric analysis to investigate the current research and development in the field of MDM as part of DG. This type of study is, to the researcher's knowledge, the only one of its kind to date in this field of research and he was guided by the following questions: (RQ1) What is the current state of MDM research? (RQ2) What are the key scientometric factors? (RQ3) Which topics influence the research field? (RQ4) What are the connections to DG? Through the systematic evaluation of specialist literature and research papers, this study contributes to gaining insights into existing concepts and trends and to gaining important insights into the relevance and influence of MDM on corporate success.

2. THEORETICAL BACKGROUND

At this point, the central concepts will be introduced in a focused scope using a theoretical framework in Figure 1.



Source: contribution by the researcher

Figure 1. Theoretical framework

MASTER DATA (MD): MD are fundamental and relatively stable entities over time (e.g. customers, products, suppliers) that are of central importance for a company's business processes and decisions (Schmidt, 2010; Scheuch *et al.,* 2012). MD is characterized by its persistence and extensive use in various areas of the company. They serve as reference data for transactions, analyses, reports and other business activities. The quality and consistency of MD are crucial for the efficiency and effectiveness of business processes and decisions.

MASTER DATA MANAGEMENT (MDM): MD planning, management and control, also known as MDM as special data management (DM), includes processes, policies, technologies and standards that ensure MD is accurate, up-to-date, complete and consistent (Otto, 2009; Loshin, 2009; Scheuch *et al.,*

2012). MDM enables organizations to improve the quality of their MD, reduce maintenance costs and provide a solid information base for decision-making.

DATA GOVERNANCE (DG): DG is an organization-wide approach that formally orchestrates processes, people and technology in terms of a human-task-technology system, ensuring that data is managed in a way that meets business needs, ensures data integrity and quality, and ensures compliance with legal regulations and internal policies (Khatri and Brown, 2010; Otto, 2011; Lee *et al.,* 2018; Abraham *et al.,* 2019; Jagals *et al.,* 2021). The data types that are the control object of the DG include data in general and master data in particular.

SCIENTOMETRICS: The term scientometrics comes from the Russian word "naukometriya" and was first introduced in 1969 by Nalimov and Mulcjenko (1969) and used by Brindha and Murugesapandian (2016). For the present study, the researcher follows the definition of scientometrics as "The quantitative methods of the research on the development of science as an informational process" (Nalimov and Mulcjenko, 1971, p. 2). Scientometrics methods includes citation mapping, visualization, bibliographic linking, co-authorship network or co-word mapping. Researchers receive tool support with VOSviewer, Bibliometrix or CiteSpace.

3. METHODOLOGY AND MATERIAL

This study is based on existing research findings on the topic in question. The study is therefore qualitative in nature (literature analysis with the use of scientometric methods).

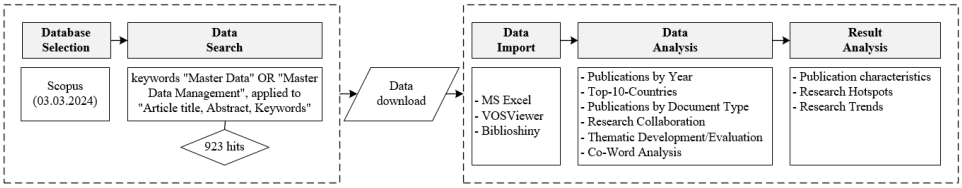
Figure 2 shows the analysis process in the context of this study. It begins with the definition of the purpose and objective of the study (step 1), followed by the selection of information sources and tool support (step 2), the collection of data relevant for evaluation (step 3) and the execution of the analysis (step 4). The study concludes with a discussion of the results of the analysis and the derivation of conclusions.

Source: contribution by the researcher adapted from Donthu *et al.* (2021)

Figure 2. Analytical process

For scientometric analysis (Figure 3), the researcher used the digital library Scopus (www.scopus.com), a popular data source for secondary data in research due to the volume of publications offered there (Popescul *et al.,* 2020; Jagals *et*

al., 2021; Necula and Păvăloaia, 2023). The date of the search was 03.03.2024 with the keywords "Master Data" OR "Master Data Management", applied to "Article title, Abstract, Keywords". Abbreviations such as "MD" or "MDM" were not used for the search, as these can also stand for other terms (e.g. metadata). No further restrictions were made at this point to obtain comprehensive results. The query resulted in 923 main hits, which were included in the scientometric analysis. Interestingly, there are almost four times as many articles on MDM in the field of informatics (number = 511) as in the field of economics (number = 117), which on the one hand reflects the multidisciplinary nature of MDM research and on the other hand shows that data (still) seems to be a technical topic, although data in general and MD in particular have a strong technical component.



Source: contribution by the researcher

Figure 3. Strategy, material, analysis methodology

The results were exported in CSV/RIS format. The analysis was then performed in two ways: (a) the descriptive analysis was supported by Microsoft Excel (MS Excel), (b) the scientometric analysis was supported by VOSViewer (version: 1.6.20) and Biblioshiny.

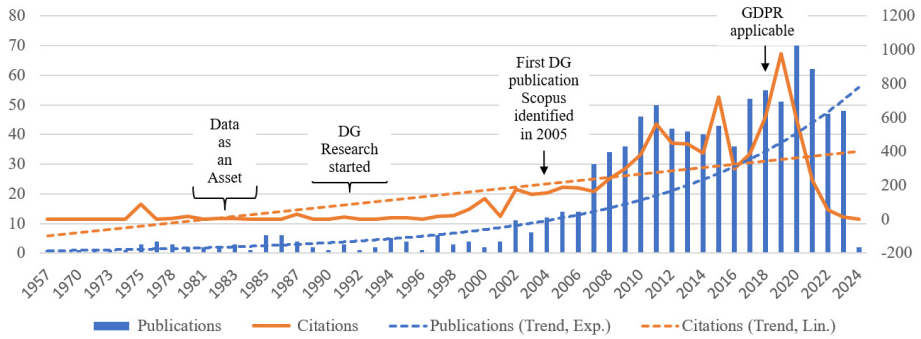
4. ANALYSIS AND RESULTS

The sample (Figure 4) covers the period from 1957 to 2024 with a total of 923 documents in 595 sources (including books, articles, conference papers and reviews), with 2.287 Authors in total, an average age of the documents of 11.4 years (that seems to be old) and an annual increase of 1.04% (rather a marginal growth). A total of 2,054 keywords were declared in the documents for indexing and 18,310 references were cited (with an average of 8.74 citations per document). 2,287 different authors contributed to the research in MDM. Of the 923 documents, 162 were authored by single authors; this corresponds to a share of 17.5 %. The metric "international co-authorship", which has a value of 10.18% in the sample, reflects the strength of collaboration between researchers across national borders and is therefore a benchmark for international cooperation in research and science (OECD, 2019; Thakur *et al.,* 2011).

Source: contribution by the researcher with Scopus/Biblioshiny

Figure 4. Overview of the sample

Publication figures have risen continuously since the first publication in 1957 (Figure 5). This also applies to citations. The initial increase is moderate, but then increases noticeably from 2008 onwards. The reasons for this are (a) the growing awareness of data protection, (b) the increasing importance of data management in general (companies are becoming increasingly data-driven) and big data, and (c) the interest in analysing this data (e.g. 360-degree view of the customer). In recent times, cyber security, data security, mergers and acquisitions, compliance, risk management and the integration of corporate architectures are further drivers of this development Due to ongoing digitalization and the associated increase in the relevance of data in general and MD in particular, it can be assumed that the field of research will continue to enjoy the same level of attractiveness.



Source: contribution by the researcher with Scopus/MS Excel

Figure 5. Publications by year

TOP 10 COUNTRIES: With 604 publications, the TOP 10 countries (Table 1) account for 65.4% of the sample. The majority of publications are in Europe (271 publications or 44.9%). North America (147 publications or 24.3%) and Asia (186 publications or 30.8%) are roughly on a par.

Table 1. Top 10 countries

Country	Continent	Publications	Share
Germany	Europe	148	24.5%
United States	North America	147	24.3%
China	Asia	95	15.7%
United Kingdom	Europe	37	6.1%
Indonesia	Asien	35	5.8%
Switzerland	Europe	33	5.5%
India	Asia	31	5.1%
France	Europe	28	4.6%
Finland	Europe	25	4.1%
Japan	Asia	25	4.1%

Source: contribution by the researcher with Scopus/Biblioshiny

Table 2 shows the results by document type.

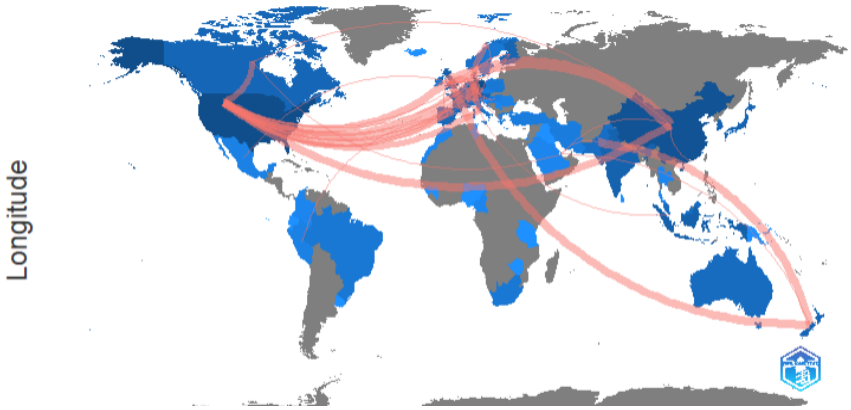
Table 2. Publications by document type

Document type	Publications	Share
Article	345	37.4%
Book	21	2.3%
Book Chapter	37	4.0%
Conference Paper	441	47.8%
Conference Review	32	3.5%
Data Paper	1	0.1%
Note	7	0.8%
Report	1	0.1%
Retracted	2	0.2%
Review	29	3.1%
Short Survey	7	0.8%
Total	923	100%

Source: contribution by the researcher with Scopus/MS Excel

With a share of 51.2%, conference objects are the largest group in the sample, followed by articles published in scientific journals with 37.4%. The other categories, including books and book chapters, make up a small proportion of the sample. For the researcher, this is an indication to concentrate on articles and conference contributions in the qualitative evaluation of previous publications (systematic literature analysis).

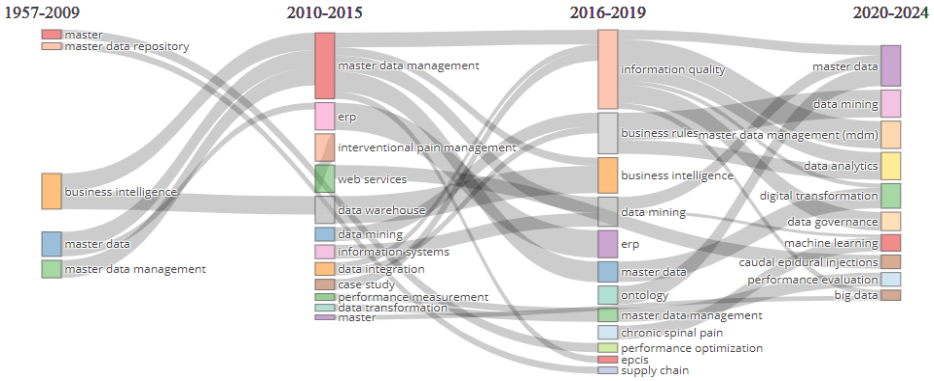
Figure 6 visualizes the researchers' work on a world map. The focus of research is clearly on industrialized countries, which seems understandable: the development of modern industries is heavily dependent on IT and therefore data as digitalization increases. However, all other countries are encouraged to get involved in MDM research.



Source: contribution by the researcher with Scopus/Biblioshiny

Figure 6. Research collaboration as a world map

Figure 7 shows the thematic development of the MDM research field in the period 1957-2024, divided into four sub-periods (1957-2008; 2009-2015; 2016-2019 and 2020-2024) as a so-called Sankey diagram (Aria and Cuccurullo, 2020).

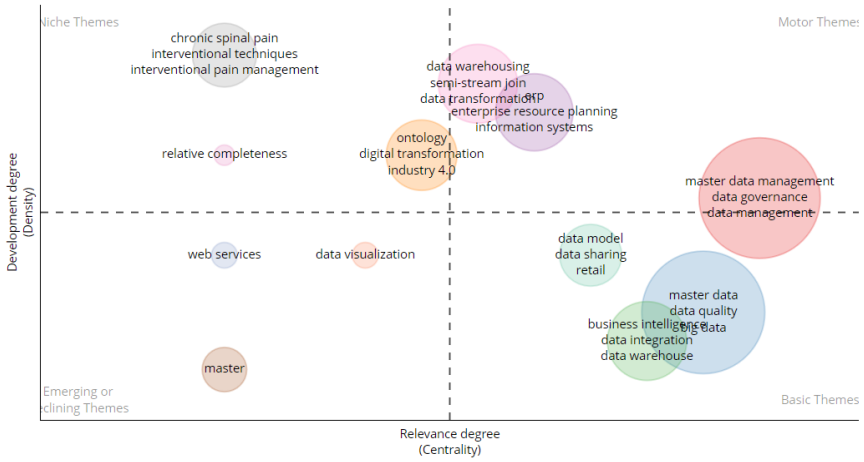


Source: contribution by the researcher with Scopus/Biblioshiny

Figure 7. Thematic development (Sankey diagram)

Each node represents a set of different topics over time, characterized by the keyword with the highest frequency, where the size of the node is proportional to the number of keywords. The flow between the nodes illustrates the direction of the topic development, the width of the edge is proportional to the index of inclusion between two related topics, leading to an increase in connections between the topics over time. The diagram confirms the correlation between advancing digitalization and the associated increase in the importance of data in operational organizations, especially MD, also in light of the corresponding research area DG. MDM is a driver over the entire observation period and can be seen as one of the "seeds" for DG.

To identify clusters and groups in the documents, the researcher identified the topics of engine, niche, base and decline. The results are shown as a thematic map in Figure 8. It classifies research topics according to their degree of centrality - as the extent of the relationship between different topics - and density - as a symbol of progress in the research field to assess importance and connectivity (Esfahani *et al.,* 2019; Mobin *et al.,* 2023). Recurring keywords in the map indicate clusters that form the basis for research in the quadrants (Cobo *et al.,* 2011). Biblioshiny supports this type of analysis and visualization of bibliographic data without researchers having to do their own coding.



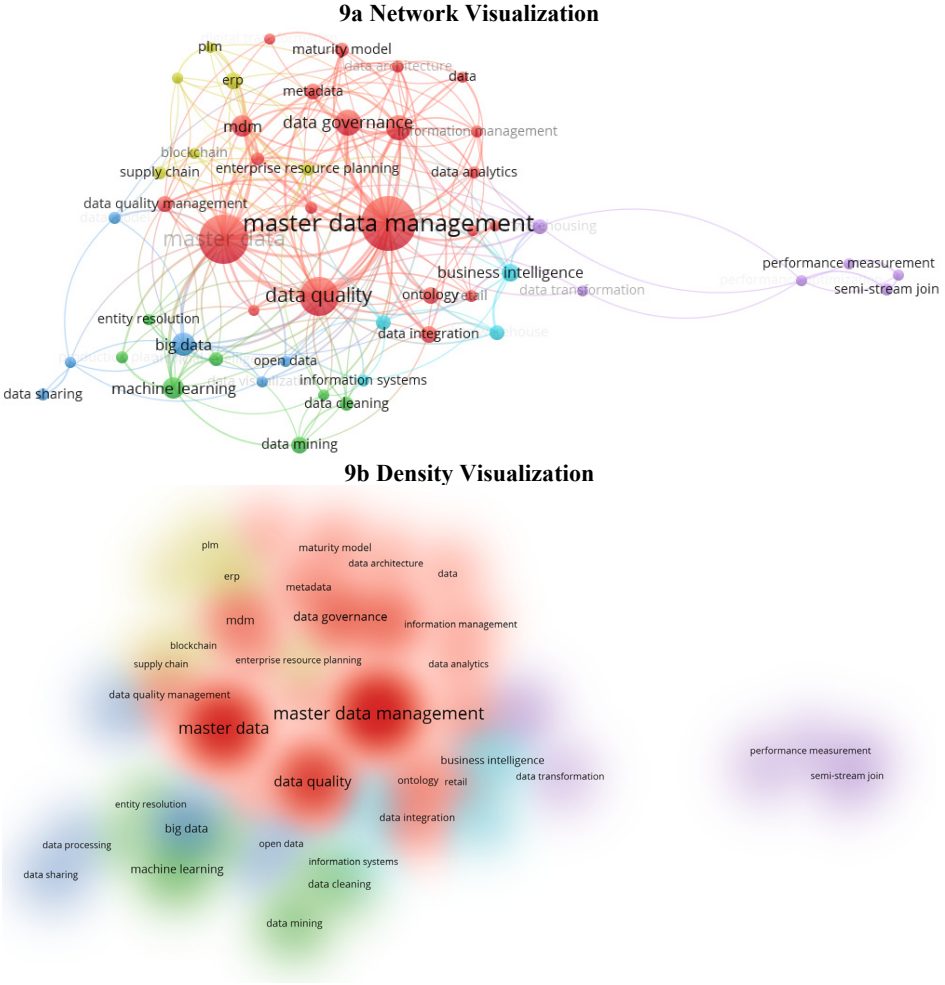
Source: contribution by the researcher with Scopus/Biblioshiny

Figure 8. Thematic evolution

MDM, DG, classic DM, but also specific applications of information systems, such as enterprise resource planning (ERP) or data warehousing, are the driving topics in this research area (Motor Themes). The basis of these drivers are classic DM topics such as data model, data quality, data warehouse, business intelligence and data integration (basic topics). This seems logical, as 80% of the

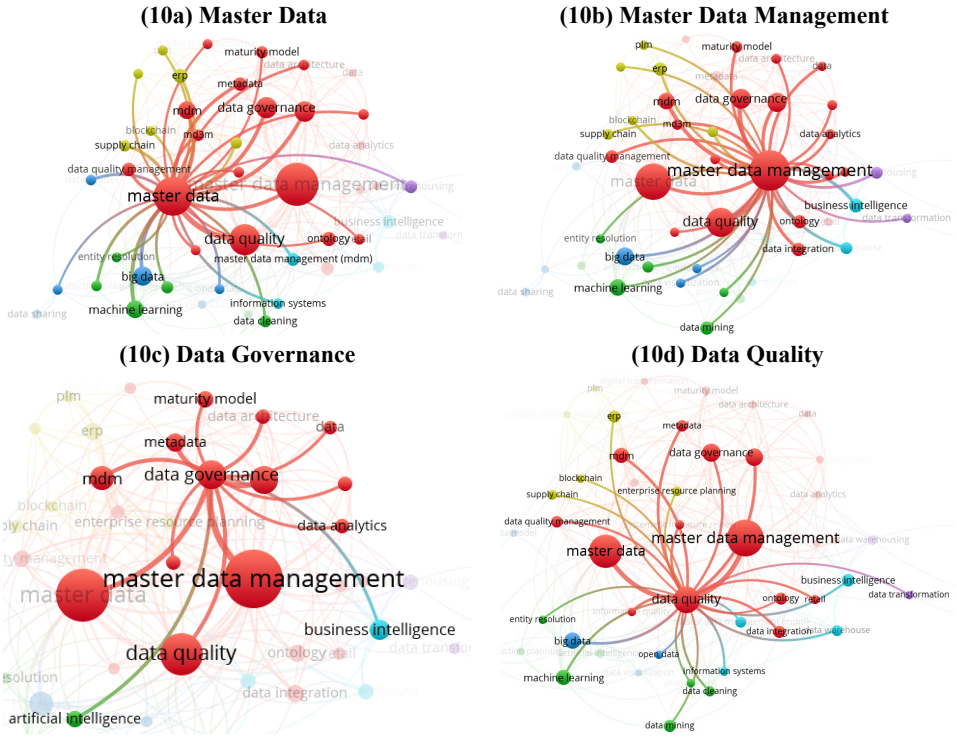
data in ERP systems is MD, e.g. for configuring the ERP, and MD is also qualitative information in analytical applications, according to which key figures are broken down. Digital transformation is still a niche topic but is generating additional pressure in the aforementioned engine topics, as companies will become increasingly data-driven as a result. In contrast, web services and data visualization appear to be declining topics.

In the next step, the co-word analysis was carried out (Figures 9 and 10).



Source: contribution by the researcher with Scopus/VOSviewer

Figure 9. Bibliographic linking Author keywords (all links)



Source: contribution by the researcher with Scopus/VOSviewer

Figure 10. Bibliographic linking of author keywords (details)

This involved checking how often certain words occur together in a selection of scientific publications. From this, term clusters can be formed. Topics at the center of the co-word network belong to the so-called "mainstream topics", while peripheral clusters can represent new or innovative topics in the research field. The connections between the clusters mean that keywords are mentioned together in sources. Noise in the data can occur due to ambiguities of words/homonyms or the occurrence of several words for one and the same term/synonyms (Havemann, 2009). For the co-word analysis, 2,056 author keywords were included. Only keywords with a minimum frequency of occurrence of 5 (threshold value) were included; 56 keywords met this restriction.

Figure 9a shows that MD, MDM and Data Quality (DQ) are the most important terms used to form clusters. DG and DQ are drivers for MDM. Importing the data also revealed a heterogeneous structure with a few clearly definable clusters (Figure 9b). The red cluster represents data management with topics such as data quality, metadata, maturity model or DG. The green cluster

combines topics relating to modern forms of business analytics (e.g. data mining, machine learning). The yellow cluster refers to operational applications in which MD plays a prominent role, e.g. Product Livecycle Management (PLM) or ERP. The blue cluster is Big Data. However, peripheral topics such as performance measurement (purple) can also be identified.

Figure 10 shows the connections between the most important (top 4) identified topics. The figures show impressively that the topics are related to each other resp. influence each other: the connections between the keywords overlap and show significant relationships, represented by the strength of the connections.

5. SUMMARY AND OUTLOOK

The aim of this scientometric analysis was to understand the interaction between MDM and DG, including the impact on company success. To do this, the researcher examined 923 publications on master data management indexed in the Scopus online library over a period from 1957 to March 2024. The researcher addressed various research questions, including the current state of research, the key scientometric factors and the most important topics in the field of MDM research.

The results impressively show that MD and its management (MDM) make an important contribution to digital transformation and therefore to the success of the company. They influence the quality of operational and analytical applications. The published literature covers four central aspects: MD, MDM, DQ and DG. The terms "Master Data" and "Master Data Management" are the most common keywords in the same ratio, but DQ and DG are the drivers. Europe was the main contributor in this research area, followed by North America and Asia.

Future topics in the MDM research field include the establishment of a data culture, or rather a data-driven culture. It enables companies to innovate faster, continuously improve through real-time feedback and response and make smarter business decisions. Conversational technologies, including AI-powered voice assistants, chatbots or intelligent personal assistants, i.e. AI applications in general, act as disruptive forces in MDM because they force companies to keep trustworthy, well-organized and metadata-rich data at hand. The acceptance of these applications is heavily dependent on how fast, clean and efficient the company data is. Multi-domain data (including digital assets and geodata) will also trigger MDM. The challenge here is to intelligently network the domains. The share of cloud-based MDM solutions will increase as the need for application migrations and the associated consolidation of data sets grows. In this context, Gartner introduces the term "headless MDM" into the discussion (Gartner, 2021), in which the end user interfaces to the master data can be fully customized to support the end user's business processes in all MDM workflows,

including administration. The topics offer very good starting points for future research.

However, the study also has some limitations. At first, only one library (Scopus) was used. An extension to other libraries, e.g. Web of Science or SpringerLink, would make sense. Furthermore, the text analysis was restricted to the keywords assigned by the authors. It would have to be checked whether the extension to all indexed keywords would yield more detailed findings, or whether the sample is already saturated with the chosen selection.

The next step for the researcher is to analyse the publications from a qualitative point of view. For this purpose, the 923 studies are further narrowed down in a suitable manner according to known techniques. The aim is to extract the success factors of MDM from these studies and to evaluate the factors and mechanisms that influence MDM. They serve as a starting point for the subsequent conception of an MDM success framework based on the Design Science Research (DSR) approach. Expert interviews in a real company context (German SME) will serve to evaluate the framework.

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OPTIMIZATION OF MASTER DATA MANAGEMENT: A MATURITY MODEL

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Abstract
Master data management forms the foundation for the success of modern organizations by ensuring the quality, consistency and availability of data. Determining the maturity level of this management system is crucial to identify weaknesses and potential for improvement. This study presents a model for assessing the maturity of master data management because of analysing previous research findings on maturity models in general, master data management maturity models in particular, data governance and practical experiences. The proposed model provides a comprehensive assessment framework according to which various aspects of master data management can be analysed and evaluated to identify the current state and potential development paths. It provides a tool to gain insights into best practices and challenges that organizations should consider when optimizing their master data management. Furthermore, the results serve as a basis for further research. The aim is to construct an artifact for measuring the success of master data management that is influenced by data governance experiences.
Keywords: *data management; data governance; maturity assessment.*
JEL Classification*:* C80, O10, O25, O33.

1. INTRODUCTION

In the era of digital innovation and data-driven decision-making, Master Data Management (MDM) is becoming increasingly important for organizations of all sizes and industries. Master Data (MD) is the backbone of any organization, it is the digital DNA (BearingPoint, 2016) as it contains essential information about customers, products, suppliers and other business partners. Effective MDM is crucial for ensuring data quality, consistency and availability in MD, which in turn forms the basis for sound analysis, operational (process) efficiency and strategic decision-making. A scientometric analysis of research has shown that this topic has not only come into the spotlight due to the increasing digital transformation of recent years, MDM has been part of operational data management (DM) ever since information technology (IT) has been used in operational organizations.

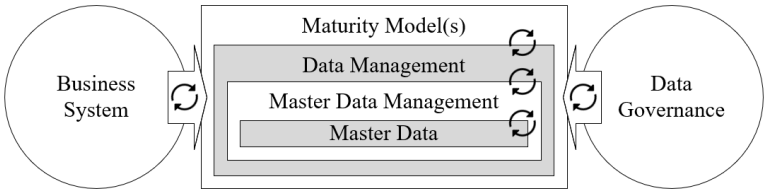
Determining the maturity level of MDM is a critical step for organizations to understand their current capabilities and identify potential areas for improvement. A higher level of MDM maturity is typically associated with better utilization of data resources, increased business agility and an improved customer experience. It is therefore crucial to gain a comprehensive insight into the current state of MDM and define a clear roadmap for its further development.

This study presents a model for measuring the maturity level of MDM. It is the result of an analysis of previous maturity models in DM and MDM as well as findings from ongoing research on data governance (DG) and practical experience. The researcher was guided by the following questions: (RQ1) What is understood by the maturity level in general and in the focus of DM in general and MDM in particular? (RQ2) Are there reference models for measuring maturity in MDM, and if so, what are they? (RQ3) Which elements provide the basis for maturity measurement in MDM?

The study follows the classic structure of scientific studies. First, the theoretical background is discussed (section 2). This is followed by a presentation of the methodology and the material used (section 3), a description of the model development (section 4) and model evaluation (section 5). The paper concludes with a summary and thoughts on future research.

2. THEORETICAL BACKGROUND

The researcher will begin by introducing key concepts using a theoretical framework (Figure 1).



Source: contribution of the author

Figure 11. Theoretical framework

A BS is an open, goal-oriented and socio-technical system (Ferstl and Sinz, 2012; Benker and Jürck, 2016). It is open because they interact with their (relevant) environment via communication and performance relationships (= behaviour of BS). In doing so, an BS is guided by defined goals and objectives. The tasks of a BS are performed jointly by humans (labour) and machines; in their interaction, they form a socio-technical system (= structure of BS). These characteristics influence the DM or MDM and thus the maturity level determination in a cybernetic sense.

The Data Governance Institute provides a useful definition for this article: Data governance is a system of decision-making rights and responsibilities for information-related processes that are executed according to agreed models that describe who can perform which actions with which information, when, under which circumstances and using which methods (DGI, 2024). This system of rules also influences the DM or MDM in a cybernetic sense.

MD is fundamental information about business-critical business entities in the real and/or operational world, such as customers, suppliers, products, employees and other business partners, on which a company's business activities are based (Mertens *et al.* 2004). This data forms the basis for daily business processes and decisions and normally remains relatively stable over a longer period (it is semi-static). Their quality, consistency and timeliness are therefore crucial for the smooth running of business processes and the accuracy of information in reports and analyses (Beckmann, 2019).

DATA MANAGEMENT (DM) AND MASTER DATA MANAGEMENT (MDM): Data management (DM) encompasses all operational tasks that serve company-wide data storage, data maintenance and data use (Meier and Kaufmann, 2016). Master Data Management (MDM) as a special DM is a sub-area of operational information management (Krcmar, 2010) and a comprehensive and systematic approach to managing and maintaining master data within operational organizations. The aim of MDM is to ensure the quality, consistency, accuracy and availability of master data across all systems and processes and to view and treat it as a company-wide resource (Otto and Hüner 2009). In addition to defined organizational regulations (including defined responsibilities, guidelines and standards), companies find support in special MDM systems, central IT platforms for the management of master data, which are often used to automate MDM tasks (Beckmann, 2019).

Maturity model M are used to evaluate the working methods of companies or projects - as a benchmark for the maturity of a company - especially in the development of software and systems (Jacobs, 2019). The models offer a subdivision into different maturity levels, whereby the exact names of the individual levels can vary from model to model. To determine the maturity level, specific requirements are defined and then placed at different maturity levels. Depending on which requirements are fulfilled, a certain maturity level, a grade, is assigned and thus a classification is made. From this classification, companies should derive actions that they need to implement to improve their maturity level. In research and practice, reference models exist for various domains, e.g. project management (Capability Maturity Model Integration, CMMI) or business process management (EFQM Excellence Model or DIN EN ISO 9004:2018). In the context of this study, various models exist, each with different dimensions (DIM), main focus (MF), maturity levels (ML) and assessment questions (A-Q; if available), which were analysed for the development of the model (Table 1).

Table 3. Maturity models in DM, MDM and DG

#	REFERENCE	FAM	ABBRV	ELEMENTS			
				DIM	MF	ML	A-Q
1	ORACLE (2013)	MDM	ORACLE	5	./.	4	./.
2	DATAFLUX (2010)	MDM	DATAFLUX	6	./.	5	./.
3	KUMAR (2010)	MDM	KUMAR	./.	./.	6	./.
4	GARTNER (2015)	MDM	GARTNER	7	./.	6	./.
5	SPRUIT AND PIETZKA (2015)	MDM	MD3M	5	13	5	69
6	MERKUS (2015)	DG	MERKUS	8	29	5	27
7	FIRICAN (2011)	DG	FIRICAN	3	6	5	./.
8	MECCA (2014)	DM	CMMI	6	25	5	./.
9	DAMA (2017)	DM	DAMA	11	>4	6	./.
10	BITKOM (2022)	DP	BITKOM	./.	./.	5	./.

LEGEND: FAM (FAMILY) ABBRV. (ABBREVIATION) | DIM (DIMENSIONS) | MF (MAIN FOCUS) | ML (MATURITY LEVEL) | A-Q (ASSESSMENT-QUESTIONS) | MDM (MASTER DATA MANAGEMENT) | DG (DATA GOVERNANCE) | DM (DATA MANAGEMENT) | DP (DATA PROTECTION)

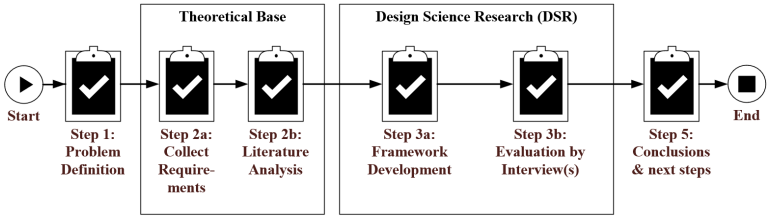
Source: contribution of the author

The methodology and material used are presented below.

3. METHODOLOGY AND MATERIAL

The study develops a MM for MDM based on Design Science Research DSR (Hevner *et al.,* 2007; Hevner, 2007; Peffers *et al.,* 2012; Doyle *et al.,* 2016) and process models for MM (Becker *et al.,* 2009). In addition to previous research results in MDM and DG, the researcher's practical experience was also incorporated into the development. The developed model was then evaluated in expert interviews. This study can therefore be classified as mixed-qualitative research.

It begins with the problem definition (step 1), followed by the survey of the requirements for a successful MDM (step 2a), the literature analysis (step 2b), the development of the framework (step 3a) and the evaluation through interviews (step 3b). The study concludes with a discussion of the results of the analysis and the derivation of conclusions (step 4).



Source: contribution of the author (taking Hevner, 2007 into account)

Figure 12. Research design

The literature review was conducted using established methods (Webster and Watson 2002; Kitchenham 2004; Fink, 2014). The researcher used digital libraries for scientific publications, including Scopus, as well as digital libraries for gray literature, e.g. Google Scholar. The search terms were "maturity level", "maturity models", "maturity", "maturity model", also in combination with "master data" or "master data". The results of the review were incorporated into the model development. The MDM-MM according to DSR was developed in three phases. At the beginning, the design levels for the MDM were determined. Evaluation factors for assessment were then derived and maturity levels defined for further operationalization of these levels. Influencing organizational factors form the framework. Finally, everything is orchestrated into an entire model.

To evaluate the MDM-MM, the researcher used semi-structured interviews (Saunders *et al.,* 2019). The researcher selected participants with different positions in companies, from different industries, with different ages, different professional experience and different professional values/backgrounds to cover as broad a spectrum as possible (Saunders *et al.,* 2019). The interviews were conducted partly as video conferences and partly in person, then transcribed and agreed with the participants. Finally, the relevant information for the evaluation of the model was extracted from the results (thematic coding according to Braun and Clarke 2006).

4. MODEL

The model construction is presented below. The factors influencing the organization are characterized by the characteristics present in the company that can influence the MDM. These include industry, headcount, turnover (last financial year) as well as the structure of company, their tasks and their resources. As a result of the analysis of existing MM, the researcher derived eight design levels that are relevant for his model and are supported in the analysed MM (Table 2). These design levels are (I) master data, (II) data culture in MDM, (III) data quality in MDM, (IV) data protection in MDM, (V) data security in MDM, (VI) organization of MDM, (VII) resources in MDM and

(VII) controlling in MDM. Compared to the previous models, the protection, security and control levels have been strengthened.

Table 4. Design areas of the MDM

FAMILY		MDM					DG		DM		DP
MODEL		ORACLE	DATAFLUX	KUMAR	GARTNER	MD3M	MERKUS	FIRICAN	CMMI	DAMA	BITKOM
DESIGN AREAS	MASTER DATA	X	X	X	X	X	X	X	X	X	X
	DATA CULTURE	X	X	X	X	X	X	X	X		
	DATA QUALITY	X	X	X	X	X	X	X	X	X	
	DATA PROTECTION										X
	DATA SECURITY					X					
	ORGANIZATION	X	X	X	X	X	X	X	X		
	RESOURCES						X	X	X		
	CONTROL						X				

LEGEND: MDM (MASTER DATA MANAGEMENT) | DG (DATA GOVERNANCE) | DM (DATA MANAGEMENT) | DP (DATA PROTECTION)

Source: contribution of the author

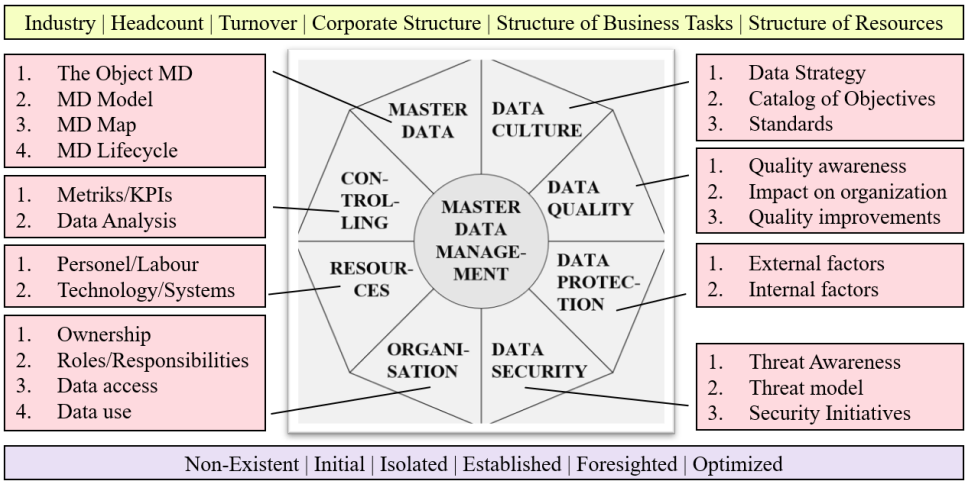
To make the design levels operable, the researcher defines evaluation factors on the base of which the assessment (questionnaire) can be developed:

1. Master Data (I): the object MD (I-1); MD model (I-2); MD map (I-3); MD life cycle (I-4).
2. Data Culture (II): Data strategy (II-1); Catalogue of objectives (II-3); Standards (II-3).
3. Data Quality (III): Quality awareness (III-1); Impact on the organization (III-2); Quality improvements (III-3).
4. Data Protection (IV): External factors (IV-1); Internal factors (IV-2).
5. Data Security (V): Threat awareness (V-1); Threat model (V-2); Security initiatives (V-3).
6. Organization (VI): Ownership (VI-1); Roles/Responsibilities (VI-2); Data access (VI-3); Data use (VI-4).
7. Resources (VII): Personnel/Labour (VII-1); Technology/Systems (VII-2).
8. Controlling (VIII): Metrics/KPIs (VIII-1); Data Analysis (VIII-2).

In the eight design levels, 23 evaluation factors were identified and defined.

Regarding the maturity levels, the researcher is guided by the "Capability Maturity Model (CMM)", which was developed in 1984 by the Software Engineering Institute at Carnegie Mellon University, USA, to assess the maturity level in various application areas, including software and program development, IT service management processes and project management. In this regard, the researcher derived the following six maturity levels in a third step: (0) non-existent, 1-initial, 2-isolated, 3-established, 4-foresighted and 5-optimized.

The MM (Figure 3) proposed by the researcher consists of (a) six organisational factors (yellow), (b) eight design levels (grey), (c) 23 assessment factors (red) and (d) six maturity levels (blue).



Source: contribution of the author

Figure 13. Proposed MDM maturity model

The MM takes previous research results into account, expands resp. sharpens already known MM and fits seamlessly into the research landscape.

5. CONCLUSION

This study makes a proposal for an MM for MDM. MDM as a management system is a critical success factor in coping with increasing digitalization in corporate environments of all sizes. The aim of this study was therefore to derive a model based on existing MM that helps companies to determine their level of maturity in MDM, taking current challenges into account. The starting point was a comprehensive literature review to identify existing MM in MDM. These were then analysed. It was found that existing MM in MDM do not address all the design levels that are relevant today regarding digital transformation progresses. Increasing cybercrime activities are forcing data protection and data security to

be included to a greater extent. Measuring success - not only for data quality - is also important, as MDM activities are investments that need to be justified to top management on an ongoing basis. Therefore, control mechanisms that not only improve the external image of MDM, but also promote motivation, are relevant. For this reason, the information base was expanded to include MM of the DM in general, the DG and data protection. The proposed MM comprises six organisational factors, eight design levels with a total of 23 assessment factors and six maturity levels. In addition to the above-mentioned results of previous research, the researcher's practical experience was also incorporated into the creation of the MM.

The model is currently a proposal and must be validated in real and different company environments. For this purpose, an assessment - consisting of a sufficient number of questions for each evaluation factor of each design level - is designed in advance and put online. At the same time, other experts can be involved to discuss the model. They can contribute their experience, develop their own criteria and compare them with the proposed model. Currently, all design levels and evaluation factors are weighted equally. Consideration can be given to weighting the levels and factors according to their importance.

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ESG ASPECTS THAT INFLUENCE INVESTORS DECISION-MAKING – A QUALITATIVE ANALYSIS

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Abstract
Purpose – The purpose of this paper is to investigate the main aspects of ESG that influence decision making in the process of investments and to define an ESG word catalogue, that can be a basis for future research.
Design/methodology/approach – Research and papers about the influence of ESG information on investors decision making are discussed by a qualitative content analysis to define the most common topics of ESG. Furthermore, latest sustainability reports of the Dow Jones companies are analysed with a QCA with the aim to identify the most common used ESG words.
Findings – An all-encompassing statement on the question of which ESG topics are of high importance for investment decisions can only be made if investor groups are surveyed in addition to researchers and the respective companies. Nevertheless, this research provides a basis for future research that aims to further investigate the interactions between ESG information and market effects.
Originality/value – This paper provides important new insights that can be used to better define the key parameters of the ESG megatrend and, building on this, support further research in this area.
Keywords: *ESG; sustainability; investments; reporting; frameworks.*
JEL Classification: G11.

1. INTRODUCTION

Climate change, social injustice and financial crimes are scenarios which come to the fore in the public's opinion (Hironaka, 2002). Deriving from this, new parameters are evolving, which can determine investors' investment decisions (Ajina, Sougne and Lakhal, 2015). This study aims to focus on the changes in investor needs and voluntary disclosure of environmental, social and governance (ESG) information, uncovering possible ESG factors that are important in the public's opinion.

The reporting of ESG information and characteristics is overall a voluntary act for companies to present their commitment to ESG-related topics (Lagasio and Cucari, 2019). In consequence, there is a limited database for companies in the stock market. This is why the IPO prospectuses are a critical source to

indicate a company's pledge to environmental, social and governance activities. To identify a company's ESG actions analysing its prospectus texts is a possible method. A measurement of ESG terms could be done by identifying the term frequency of specific words and terms using big data (Jo, 2018). Another method to analyse the prospectuses could be a sentiment analysis in which the positive or negative tone of ESG-related context could be measured (Liu, 2012).

In addition to the interest currents from the direction of science and investors, a high interest in the consideration of ESG criteria is also shown by policymakers. On the 5th of January 2023 the European Union (EU) introduced Corporate Sustainability Reporting Directive (CSRD) – 2022/2464/EU. These new rules should ensure, that stakeholders and investors have the information they need to evaluate financial risks and opportunities which could emanate from future climate change and sustainability issues (European Parliament and Council, 2022). The first companies reporting in accordance with the European Sustainability Reporting Standards (ESRS) will publish this report for the first time in 2025 for the fiscal year 2024.

Sustainability Reports and IPO prospectuses have a great variation in quality to their readers, since there are no international standards, especially in the IPO process (Comyns *et al.,* 2013; Beck, Frost and Jones, 2018). As a result, it is difficult for companies that voluntarily publish ESG information to determine which information is of interest to heterogeneous investor groups, such as on the IPO market.

To identify the most important ESG topics for investors, this study aims to identify and prioritize key ESG topics within this research. The result of this study should be an ESG word catalogue, which summarizes the essential current terms in relation to the ESG megatrend and can serve as a starting point for strategy development and publication of sustainable information by companies. The research question of this thesis is therefore: what are the essential basic aspects of ESG that can influence investor decisions and are perceived as relevant in research?

2. METHODS

For this study a qualitative content analysis methodological framework is used. Since content analysis uses qualitative and quantitative aspects it has a high significance to identify ESG key topics and measure them (Kuckartz, 2018).

An iterative process was carried out to determine the appropriate topics for coding, whereby a basic structure was already created through the accumulation of terms. Essentially, the key topics can be divided into three categories: "Environmental", "Social" and "Governance". A fourth category is "Sustainability", which is defined by the fact that it contains ESG topics that cannot be clearly assigned to one of the other three categories.

To form a suitable ESG word catalogue, a conceptual qualitative content analysis (QCA) is carried out in the first step, which deals with explicit data. The appearance of word and the frequency of phrases will be analyzed (Elo and Kyngäs, 2008). Therefore, the latest sustainability reports of the top 30 Dow Jones companies will be the database for the conceptual QCA. As the companies publish their sustainability reports for the respective financial years at different times, the observation includes reports for the years 2021 to 2023 (Figure 1). These reports are used to determine which ESG topics represent the key content points in the respective reports.

Figure 14. Sustainability report by company

Company	Report year		Company	Report year
3M	2023		Johnson Johnson	2022
American Express	2023		JPMorgan Chase	2022
Amgen	2022		McDonalds	2022
Apple	2022		Merck	2022
Boeing	2023		Microsoft	2022
Caterpillar	2022		Nike	2022
Chevron	2022		Procter Gamble	2022
Cisco	2023		Salesforce	2021
Coca-Cola	2022		Travelers	2022
Dow	2022		UnitedHealth	2022
Goldman Sachs	2022		Verizon	2022
Home Depot	2022		Visa	2022
Honeywell	2023		Walgreens Boots Alliance	2023
IBM	2022		Walmart	2023
Intel	2022		Walt Disney	2022

Source: elaborated by the author

Based on the sustainability reports presented above, words were weighted according to their frequency in the reports. The list of words was then cleared of "stopswords" and then sorted in descending order of frequency. In the next step, these words were analysed according to their assignment to ESG topics, whereby the words were assigned to one or more categories. The frequency of the respective category should also be considered to identify a possible weighting of a particular topic block.

Since this conceptual QCA is a one-sided view, as only the reports provided by the individual companies are considered here, a focus will also be placed on current research within ESG reporting. To this end, a relational content analysis is carried out in which the key messages from current research are extracted and the main ESG topics are used to create the ESG word catalogue. The analysis is intended to isolate the material current ESG aspects. A strong focus will be

placed on the current literature that deals with the factors influencing ESG aspects on company performance. In general, papers that deal with challenges regarding ESG, the influence on investor decisions and reporting with the help of frameworks are considered. In particular, the keywords "ESG challenges", "impact investing", "ESG framework" and "sustainability reports" were searched for. A restriction to certain media forms such as interviews was not made. The sources were divided into three sub-areas: environmental, social and governance. The core statements of the respective sources were extracted through the content analysis and then catalogued.

3. RESULTS

As the market is constantly changing and the focus on ESG aspects varies depending on the sectors and countries, there are currently not enough studies available to conceptualize ESG identically for all market participants from a long-term perspective. A visualization showing the components of the ESG factors can be found in Table 1.

Table 5. ESG factors

Environmental (E)	Social (S)	Governance (G)
Emissions	Child labor	Codes of conduct
Air pollution	Workplace health and safety	Transparency and disclosure
Waster usage and recycling	Opportunity	Board structure (diversity)
biodiversity	Community impacts	Bribery and corruption
Ernergy consumption and efficiency	Supply chain management	Stakeholder right and engagement
Impact on ecosystems	Equality	
Development of environmentally neutral products	Diversity	
	Discrimination	
	Privacy	

Source: Li, Zhang and Zhao (2022, p. 2)

3.1 Environmental (E)

If the environmental aspect is considered from a sustainability perspective, a great deal of attention is paid to the use of resources. Waste management and pollution control (WMP) are seen as a public task, particularly by Bernstein (1993), whereby over time the increasing amount of packaging waste has developed into a current challenge in this area, in contrast to the sanitary challenges (Bernstein, 1993).

Brunner and Rechbergen (2015) see the responsibility as lying more with the polluters and therefore the industry, as they produce waste and pollutants as a by-product of their activities. Through innovation, however, these can be transformed into something useful to be sustainable and harmless to the

environment, which in turn leads to a good investment in terms of impact investing (Brunner and Rechberger, 2015).

Another point that is cited as significant in impact investing regarding investment decisions is the emissions generated by the burning of fossil fuels, which contribute to global warming. According to Angelis et al. (2020), investors can influence companies to be more transparent about their ESG projects through their conscious investment decisions (Angelis, Tankov and Zerbib, 2020). The authors mention technical innovations as another key aspect of ESG. This is because technical innovations allow energy to be used more efficiently to cause fewer emissions (Angelis, Tankov and Zerbib, 2020). Mekaroonreung and Johnson (2014) also cite technical developments as drivers of the environmental sector, as these can save nitrogen oxides and thus reduce the greenhouse effect (Mekaroonreung and Johnson, 2014). In their article, Scatigna (2021) et al. also cite the issue of carbon as an important factor influencing the performance of corporate bonds and thus also show the importance of investor interest (Scatigna *et al*., 2021).

The influence on the environment can also be cited as one of the aspects of E. In addition to sustainable growth through the protection of the environment, companies are also influenced by this growth and positive ESG social management according to Oprean-Stan et al. (2020) and thus has interactions with aspects relating to the area of "Social" (Oprean-Stan *et al.,* 2020). The authors Francesco and Levy (2008) also mention the consideration of environmental protection, and particularly the voluntary publication of ESG rating scores as an important component in understanding ESG. By making a positive contribution to the environment, the resulting increase in ESG rating can generate a reciprocal effect in investment decisions (Francesco and Levy, 2008).

A future risk that also falls within the scope of environmental protection is deforestation, which in turn is described by many companies as part of their ESG activities. As the rate of deforestation continues to grow, this problem is an aspect of environmental governance that needs to be considered, especially for future generations (Paoli *et al.,* 2010). Investments with a focus on companies that actively combat forest degradation or contribute to the protection of forests can be seen as a key component of ESG aspects. According to a study by Spears (1985), investments in this area lead to improved biodiversity, which can reduce forest degradation (Spears, 1985). The significance of the individual aspects of ESG can also be derived from this.

In response to the need for measurable, transparent and sustainable information by investors and stakeholders, several frameworks have developed in recent years regarding the publication of sustainability and ESG information, which aim to provide standardized disclosure for companies. The most important determinants of ESG information can also be determined from these disclosure

reports. These frameworks were created with the aim of providing investors with non-financial information that can be incorporated into an investment decision in a simplified manner. This data should therefore offer a high degree of comparability and transparency to exclude companies that engage in greenwashing or good washing (Bose, 2020).

One of the first frameworks was introduced by the United Nations (UN) in the form of the Sustainable Development Goals (SDG) for 2023 in 2015. The aim was to set political goals and priorities for governments worldwide that focus on global challenges relating to poverty, hunger, climate change, human rights and economic growth. This goal description resulted in 169 quantitative targets to be pursued by governments, the business community and non-governmental organizations to address sustainability challenges (Swain, 2018). One of the 17 ESG goals of the SDGs is to provide affordable and clean energy. To this end, a global edgy mix characterized by sustainable and renewable energies is to be created. This should also be pursued through research into new technologies (United Nations Sustainable Development, 2023a). Another point that can be derived as part of an ESG approach is responsible consumption and production. According to the 17 SDGs, the reduction of waste and the production of sustainable alternatives should be mentioned here in particular (United Nations Sustainable Development, 2023g). As mentioned above, climate change is also a risk for the future from the EU's perspective and is to be achieved through the reduced use of fossil fuels and targeted investment in climate protection programs (United Nations Sustainable Development, 2023d).

Another framework already mentioned is the GRI standard. Like the SDGs, this framework is intended to motivate companies to publish information about their sustainability impacts in a credible and consistent manner. In addition to a high level of transparency, this should also ensure the comparability of companies worldwide. As much of the information on other frameworks is similar, the GRI standard can also be used alongside other disclosures and provide support for regulatory reports. Biodiversity and the management of fossil fuels play an important role in line with other frameworks and can be defined as core aspects of the environmental area. The handling of waste materials and the development of innovations to preserve the ecosystem are also core aspects of the GRI and support the core aspects classified above for sustainability area E (GRI, 2024).

3.2 Social (S)

The social aspects that can be pursued by companies and can influence the choice of investment are largely human rights. Investors who make international investments or are involved in the acquisition of companies are mainly attracted by developing countries that respect human rights and care about their protection (Blanton and Blanton, 2007).

In this context, Spar (1999) also mentions the mutual interactions that can arise from the consideration of human rights in relation to investments: „Thus the challenge for both business leaders and human rights advocates is to figure out how to manage the fragile relationship that binds them“ (Spar, 1999). In addition to human rights, employee relationships are also mentioned in several sources as a component of sustainable social investment and thus represent a basis for investors' decisions. Bloemer (2006) mentions the risk of underinvestment if companies only offer low benefits but expect high performance in return. This shows a negative effect in relation to a sustainable ESG approach (Bloemer and Odekerken-Schröder, 2006). Tsui and Wu (2005) also list employee relationships as a determinant. According to the authors, a high level of trust and fairness leads to increased productivity, which can lead to companies that disregard these points losing high-performing employees. Conversely, this means that companies that pay attention to this and maintain a good relationship with employees could attract investors regardless of sector (Tsui and Wu, 2005).

If the two frameworks SDG 17 and GRI are considered analogously to the "E" area, the most important aspects can also be derived from this:

The first point that appears on the list of 17 SDGs is "no poverty". The framework sees the management and protection of environmental goals as a possible means of combating poverty, as this could curb climate disasters, which in turn could lead to financial losses for the world's population. Another point of this framework and a dependency can be found in "zero hunger", which can also be influenced by environmental factors. The financial situation of developing countries is also identified by the SDGs as a cause of this (United Nations Sustainable Development, 2023b). As mentioned above, this framework also sees well-being and health as a social goal. In particular, the reduction of the mortality rate among children, for example by combating child labor, but also the containment of diseases through vaccinations and education are mentioned as possible solutions. The health of the workforce in developing countries should also be considered in the recruitment, development, training and retention of workers. However, education is also described as one of the goals of the framework, from which four goals can be derived. Firstly, education should be freely accessible to everyone, regardless of gender, so that relevant skills can be learned in the future. In addition, the number of scholarships is to be increased by 2030 and more educational institutions are to be created. (United Nations Sustainable Development, 2023c).

A look at the GRI standards reveals similar ESG priorities. The GRI Standard 401 deals with the treatment of employee employment. Key factors that create a positive relationship with employees include life insurance, medical care, occupational health and safety through parental leave, etc. and retirement benefits. However, the type of employment in the form of fixed-term or

permanent employment contracts is also cited as a social criterion. Standards GRI 404 and 405 address the development opportunities of employees and cultural diversity within the organizations and describe diversity as a key instrument for achieving ESG standards. Combating discrimination in the workplace is also mentioned here (GRI, 2024).

3.3 Governance (G)

Good governance is an important indicator when considering an impact investment, as it can be used to determine the financial stability of a country. The EU describes good governance as a system that can act strongly from within, whereby people can actively participate in state or private programs because sufficient state security mechanisms have been established. This in turn can have a positive influence on a country's economy and provide a basis for investors to make decisions. In contrast, good governance ensures that corruption is combated (United Nations Economic and Social Commission for Asia and the Pacific, 2009). According to Mengistu and Adhikary (2011), direct investment is encouraged above all by political stability and non-violence, but also by governance measures to curb corruption and combat money laundering (Mengistu and Adhikary, 2011).

In addition to good governance, corporate policies are also a major factor influencing investment decisions, as these have an impact on corporate management and the corporate level. Sparks and Cowton (2004) also state that a country's corporate policy is a clear indication of the country's economy, which in turn can be an indicator of how smoothly companies can operate there (Sparkes and Cowton, 2004). Conversely, corporate governance can be seen as an essential aspect in an ESG analysis.

In addition to observing guidelines about legislation and corporate standards, Hassani and Bahini (2022) also emphasize the importance of the publication and transparency of ESG information. The authors cite the reduction of information asymmetries as an objective that can be achieved through the disclosure of non-financial information, as companies are confronted with economic decisions in the process of preparing information. It is also noted that the publication of this information should be mandatory to promote transparency (Hassani and Bahini, 2022). Helfaya et al. (2023) also confirm the importance of disclosures in the form of sustainability reports to provide information on cultural dimensions, gender diversity, ethnic groups and workforce development. One possible source is the GRI, which points to the importance of global standards (Helfaya *et al.,* 2023).

Based on the frameworks already considered, the following aspects can be highlighted in governance: Looking at the 17 EU goals, it is also noticeable that they only partially describe governance goals. This is mainly because these goals are found in thematic blocks that are assigned to environmental or social issues.

For example, the establishment and expansion of a stable infrastructure through healthy and regulated financial institutions is mentioned under "Decent Work and Economic Growth". The reduction of inequalities because of a healthy constitutional state is also mentioned. This should include laws for the protection of ethnic groups, greater involvement and participation of developing countries in geopolitical decisions and the political inclusion of all people, regardless of age, gender, disability, race, ethnicity, origin, religion or economic or other status (United Nations Sustainable Development, 2023f). The EU lists further governance goals in its overall category "Peace, Justice and strong Institutions". Equal access to justice and comprehensive consideration of national and international law are to be pursued. Law enforcement is also to be further strengthened, which is to be achieved through the creation of national institutions, among other things (United Nations Sustainable Development, 2023e).

With GRI 205, the GRI sees the fight against corruption as a high priority. Not only employees of a company should be protected, but also suppliers and customers. Measures that should be taken include training to raise awareness of this issue. Taxation in connection with sound governance is dealt with in GRI 207. The standard aims to create a high level of tax transparency and to document this in the form of sustainability reports. It also focuses on the publication of non-financial information. In line with the EU, the GRI sees public participation in politics as a key ESG criterion with GRI 415. Party donations are a measurement tool for assessing the influence of companies in politics (GRI, 2024).

3.4 ESG in sustainability reports

In a study by Billio *et al.* from 2021, ESG rating criteria of well-known agencies were examined regarding their commonality. In particular, the different definitions of ESG characteristics, attributes and standards were examined. It was shown that different agencies rate the same companies differently and that there is generally little agreement between the rating agencies. Consequently, this leads to different benchmarks within the financial market, which means that investors' preferences can be influenced by different perceptions of these benchmarks (Billio *et al.,* 2021). Nevertheless, in contrast to the core statement of the study, similarities are also found about the main risk factors. In the "Environmental" area, this primarily concerns climate change, emissions, pollution, water risk/security and renewable energy. Under the "Social" aspect, there are several similarities with human rights and diversity. In the area of "Governance", the largest common point of intersection is corporate governance.

Luluk Widyawati (2021) also looked at the different ESG valuation methods. One focus of the study was on measuring the quality of ESG ratings. For this purpose, four ESG ratings were compared with each other in terms of

their dimensionality, reliability and validity. The author shows that all four rating systems have different measurement constructs and measurement problems. Nevertheless, it should be mentioned that the different measurement systems led to a low to moderate agreement regarding the ESG ranking (Widyawati, 2021). Similarities between individual ESG aspects can also be found in this study: For example, the focus for the "E" sub-sector is on emissions and environmental innovations. For "S", on the other hand, the focus is on workforce, human rights, community and product responsibility. With management, shareholders and corporate social responsibility (CSR) strategy, most similarities can be found in the "Governance" area.

By focusing their research on the influence of CSR on corporate financial performance (CFP), Beck et al. were able to look at the actual quality of CSR performance independently of CSR disclosure. For this purpose, the CSR commitment of companies (measured by the number of voluntary disclosures) was considered in the context of financial performance. The sample included 116 listed companies from Australia, Hong Kong and the United Kingdom. A key finding of this work was that CSR commitment can be an indicator of actual CSR performance and can also have a significant impact on financial performance (Beck, Frost and Jones, 2018). As G3.1 of the Global Reporting Initiative (GRI) framework was used here for the assessment of CSR quality, the main core aspects relating to ESG can be derived from this.

Based on the conceptual QCA, 137 terms were identified in most of the 500 words mentioned in the sustainability reports. Of these words, 41 can be assigned to "environmental" (E), 49 to "social" (S) and 41 to the category "governance" (G). A further 9 words contained ESG-relevant topics but were assigned to the overarching collective term ESG. When looking at the frequency of the reports, it appears that the "Social" category accounts for a slightly higher proportion of the sustainability reports. However, the frequency of the respective words is not considered here. Basically, among the 500 most frequently used words, terms from the E category were used 44,351 times and thus represent the highest number of mentions. This is followed by S with 41,289 and G with 35,459. Words from the superordinate category ESG are mentioned 12,119 times. However, the mere number of different words and the total of all mentions is not sufficient to make a statement about the priority of the respective category. Therefore, the total number of words in a category was divided by the number of different words to determine the mean value of each category:

$$M_{cat} = \frac{\sum WF_{cat}}{\sum DW_{cat}} \quad (1)$$

This results in the following mean values for the frequency of words in the individual categories:

Table 6. ESG word frequency

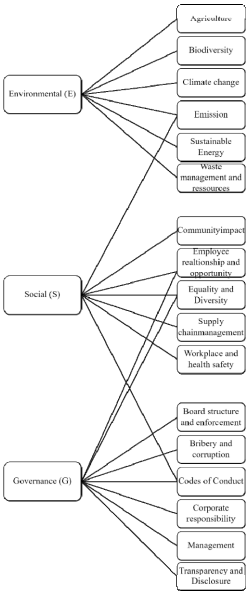
Category	Value
Environmental	1,081.73
Social	842.63
Governance	864.85
ESG	1,346.56

Source: elaborated by the author

Although the trend described above continued, it should be noted that the "G" category has a slightly higher mean value compared to the "S" category, although there are around 6,000 mentions between all the words. This indicates that words from the area of governance are used more frequently, or that these words have fewer substitutes than those from the area of governance.

3.5 Summary results

Derived from the content analyses mentioned above, the following categories can be formed for the ESG terms highlighted (Figure 2):



Source: elaborated by the author

Figure 15. Content analysis categories

The key parameters from the above-mentioned sources can essentially be divided into 5-6 subcategories. An allocation of the individual key points of the sources to the subcategories can be seen in Table 3. It can also be seen that there were overlaps between categories, as core statements from the sources could be assigned to several superordinate categories. With the help of the content analysis, the most important core aspects of ESG in connection with investment decisions on the capital market could be extracted.

Table 7. ESG categories and aspects

Categories	ESG aspects
Agriculture	Agri business, agricultural, agriculture, land use, soil
Biodiversity	biodiverse, biodiversity, biological, biology, diversity, forest, jungle, protect, protection, rainforest, timber, wildfire
Board structure and enforcement	audit, board independence, board inefficiency, board membership, board skillsets, board turnover, board-related factor, ceo, control, efficiency of the board, independent board, oversight, supervisory
Bribery and corruption	bribery, corruption, fraud, money laundering
Climate change	acute risk, adverse weather, catastrophe, catastrophe, Celsius, climate, damage, earth, environment, Fahrenheit, flood, geographic, green, heat, hurricane, natural, nature, ocean, ph., rain, storm, task force on climate, temperature, typhoon, warmup, weather
Codes of Conduct	abuse, abusive, compliance, comply, corporate behavior, due diligence, governance, investigation, misconduct, monitoring
Community impact	civic organization, civil society, community, community-related, non-profit, not-for-profit, philanthropy, public good, public opinion, public resources, public service, public transport
Corporate responsibility	accountability, accountable, accuracy, authority
Emission	air, air quality, animal, carbon, co2, coal, coal-based, emission, emissions, fuel, gas, greenhouse, pollute, pollution
Employee relationship and opportunity	behavior, behavior, bonus, education, employee, engage, extra-financial, flexible, healthcare, income disparity, income distribution, living standard, pension, quality of life, relation, school, skill, talent, team, teams, together
Equality and Diversity	age, aging, cultural, demographic, demography, diverse, diversity, ethical, ethnic minority, gender, inequalities, migration, pay gap, pay-gap, poverty, race, racial, representation, representative, staff turnover, young
Management	budgetary flexibility, budgetary performance, budgetary pressure, business plan, leadership, liquidity risk, manage, manage risk, management, managing risks, operational goal, operational performance, operational risk, planning, realistic budgeting, risks, strategic, strategies, vision
Supply chain management	buyer beware, client, consumer, customer, vulnerable clientele
Sustainable energy	: sun, electric, energy, hybrid, imported energy, mine, mining, renewable, sustainability, sustainable, technology, wind
Transparency and disclosure	communicate, communication, disclosure, disclosures, framework, information, institutional framework, policy framework, regulation,

Categories	ESG aspects
	report, reported, reporting, risk framework, tax, transparency, transparent
Waste management and resources	contamination, food, local, material, plastic, recycle, recycled, recycling, resource, toxic, waste, water
Workplace health and safety	abuse, abusive, accident, clinical, compliance, comply, corruption, crime, damage, danger, death, disclosure, due diligence, health, healthcare, hospital, medical, money laundering, privacy, protest, right, safety, strike, suicide, treatment, union, violation, violence, violent, working conditions

Source: elaborated by the author

4. CONCLUSION AND DISCUSSION

The aim of this work was to identify the most important key terms relating to ESG that can influence investment decisions. With the help of the two content analyses, the similarities and differences between the respective sources were identified and a word catalogue was created that summarizes the most important terms and can serve as a basis for the voluntary provision of non-financial information. The research question can therefore be answered positively.

However, it became apparent during the research that the focus of the respective authors was on other sub-areas. Although there were no direct contradictions between the sources, it must also be considered that similarities do not always exist due to a lack of standards. Although the focus on sources that deal with the determinants of ESG on the performance of companies shows which ESG criteria are significant in the context of a performance analysis, there is no reference to actual investor needs analyses. The different focal points within the two frameworks examined also show that there is no uniformity in the definition of ESG criteria.

The analysis of the sustainability reports shows that there is a high level of consensus on the design of reports within companies. However, it should be mentioned here that although different groups were considered, the group under review can still be seen as homogeneous, as they are similar in the aspects of market and monitoring body. It should also be noted that some terms could not be assigned to a specific category, which indicates a high degree of symmetry between the categories. Interactions and conditions, such as how a sustainable environmental policy can affect the health of the population, could not be shown using this type of analysis.

In principle, this work has enabled the key core aspects of ESG to be derived, which describe the future challenges, the current publication situation and the current framework standards. Further research can be carried out on this basis, for example to shed more light on the interactions between ESG aspects. Future research should also place a stronger focus on the needs of investors, e.g. in the form of interviews. Furthermore, this type of investigation should be

carried out using a different data source to identify any differences in terms of regions or observation periods. This could then be used to draw conclusions for the future to identify new ESG trends at an earlier stage.

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TRANSFER PRICING. THE TAXPAYER'S RIGHT TO BE HEARD

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Abstract
Transfer pricing represents a challenge both for the taxpayer and the tax administration. As transfer pricing cases have increased in Romania over the past few years, legal practitioners must face the task of understanding the rationale of the inherent functional and economic analysis, which is far from being exact and straightforward, but rather increasingly interpretative and highly challengeable.
In this paper the author provides a brief presentation of the arm's length principle and of the current legal framework in Romania, followed by a theoretical analysis of the taxpayers right to be heard during transfer pricing tax inspections accompanied by two cases from practice.
The author's conclusion is that, considering the specificity of transfer pricing, the tax inspection has the obligation to inform the taxpayer during the tax inspection whenever it intends to make an adjustment or an estimation of the transfer prices. Moreover, prior to making any adjustments or estimations, the tax administration has the obligation to request from the taxpayer additional explanation and information in writing.
Keywords: *transfer pricing; legal framework; adjustment; estimation; right to be heard.*
JEL Classification: K34, K40.

1. ARM'S LENGTH PRINCIPLE. REGULATION AND PURPOSE

The arm's length principle is an international standard, regulated in Art. 9 of the OECD and UN Model Conventions and taken over in the bilateral double taxation conventions concluded between states according to these two models. To ensure compliance with this principle, the OECD has elaborated the Transfer Pricing Guidelines (OECD, 2022), to which both the relevant provisions of the Tax Code and those of the secondary and tertiary legislation adopted for their application refer.

The arm's-length principle ensures that transfer prices between affiliated entities are comparable to those charged between independent companies in comparable situations and for comparable transactions. The establishment of this principle at the international and, subsequently, at the national levels was necessary to ensure a coherent basis for profit allocation and avoidance of double taxation.

In particular, when a company situated in the territory of one State provides goods or services to non-resident affiliated companies (situated in another State) below their value or free of charge, there is a reduction in the taxable income of the first company and the consequence is that its State of residence loses the right to tax on income that would have been earned if the price charged had been similar to that which would have been agreed at the arm's length (between independent companies).

By providing goods/services below their market value, the tax base of the State where the supplier is located is eroded and the profit is transferred to other states. Sometimes, such practices can be used in tax avoidance structures, i.e. to shift profits to low- or zero-tax countries. At the same time, if the tax authorities find that the arm's length principle is breached and adjust the income (or the expenses) to reflect the market price, to eliminate double taxation, an appropriate adjustment of expenses (or, as the case may be, income) must also be made to the other affiliated party to the transaction.

The risk of base erosion is reduced if the affiliated companies are established within the territory of the same State, as the income does not fall outside the taxing competence of the same tax administration. However, to ensure equal treatment between entities in purely internal situations and those in a transnational situation, and to prevent some optimization arrangements (e.g. transfer of income from one profit-making company to another loss-making company), some states, such as Romania, require compliance with the arm's length principle also for purely internal transactions between affiliated parties.

The conclusion of a transaction between affiliated parties, under different conditions than those which would be agreed between independent entities under similar conditions, should not be followed in all cases by an adjustment by the tax authorities, since, as the CJEU ruled in Hornbach-Baumarkt C-382/16, (CJEU, 2018), see also, SGI, C-311/08 (CJEU, 2010), paras. 71 to 72 and Impresa Pizzarotti, C-558/19 (CJEU, 2020), para. 36, there may be commercial reasons justifying the conclusion of the transaction on terms different from the usual conditions between third parties.

As mentioned, the enforcement of the arm's length principle is made through transfer pricing rules. In the process of applying these rules, to determine whether the prices charged in transactions between related parties are market prices/comparable to those charged between independent entities, a number of methods are used, and the choice of the most appropriate method(s) for this purpose depends on the nature of the transaction analysed, the available information, the circumstances shaping the specificity of the transaction etc (Iovescu, 2024).

Of significant importance in this respect are the OECD Transfer Pricing Guidelines. Although not legally binding, both taxpayers and tax administrations

rely on these Guidelines in the process of determining the transfer prices between affiliated companies.

Thus, both the provisions of Art. 11 para. (2) of the Tax Code 2004 (in force until 31.12.2015), as well as those of Art. 11 para. (4) of the Tax Code 2016 (in force since 01.12.2016), make express reference to the provisions of these Guidelines to determine whether prices charged between affiliated enterprises comply with the arm's length principle.

References to the OECD Guidelines can also be found in the tertiary legislation, respectively in Order no. 222/2008, applicable to transactions made until 31.12.2015, and Order no. 442/2016, in force as of 02.02.2016 (Lupu, 2024).

2. CURRENT LEGAL FRAMEWORK IN ROMANIA

We consider that some clarifications are necessary regarding the current legal framework in Romania, which outlines the obligation of taxpayers to prepare the transfer pricing file.

First, through the transfer pricing file, following the OECD Guidelines, are documented related party transactions and the prices of these transactions to determine whether these prices comply with the arm's length principle, by selecting the most appropriate method for this purpose.

Secondly, only *large* taxpayers have the obligation to prepare the annual transfer pricing file and only if they exceed certain annual thresholds, broken down into three main categories of transactions carried out with affiliated persons (financial transactions, services, sales). *Large* taxpayers, who do not exceed the annual thresholds, but also *medium* and *small* taxpayers, have the obligation to prepare the transfer pricing file only at the request of the tax auditors, during a tax inspection, also only if certain annual thresholds are exceeded (lower than those regulated in the case of large taxpayers required to prepare the file annually) on the three main categories of transactions. If the two sets of annual thresholds are not exceeded, compliance with the arm's length principle will be documented by taxpayers according to the general rules provided by the financial-accounting and tax regulations in force.

Thirdly, according to the tertiary legislation in force, enacted in application of the provisions of Art. 11 of the Tax Code (Order no. 442/2016), the tax inspection is entitled to adjust or estimations of the market price. If the tax inspection makes an adjustment or an estimation according to the provisions of Order no. 442/2016, the market price will be established by reference to the "*value configured by the central trend of the market*". This process – of adjustment/estimation by reference to the value configured by the central market trend/to the median value ("*median value represents that value found in the middle of the comparison range*") – which is not regulated in the OECD Transfer Pricing Guidelines, represents in fact a sanction in cases where:

- the taxpayer did not document that the transfer prices complied with the market value (arm's length) principle (adjustment hypothesis);
- the taxpayer does not submit the requested transfer pricing file or this file is incomplete (estimation hypothesis).

The adjustment or estimation at the median value is a sanction, since, if the tax inspection considers that the transfer pricing file is properly documented, the price related to the transactions made between affiliated companies will be a market price even if it is below the median (central market trend), but within the comparison range. To identify the comparison range, the comparison margin is divided into 4 segments (5 together with the median): *"The high and low segments represent the extreme results. The comparison range represents the range of values of the price or of the margin/result related to comparable transactions carried out between independent comparable companies, after removing from the comparison margin the extreme results*" (Art. 8 of Order no. 442/2016).

3. THE TAXPAYER'S RIGHT TO BE HEARD

In practice, are often encountered situations in which the tax inspection adjusts or estimates the transfer prices, even if taxpayers prepare and present the transfer pricing file, without informing the taxpayer in this regard during the tax inspection, respectively without giving it the opportunity to submit explanations or additional documents to substantiate the analysis in the transfer pricing file. The taxpayer is informed about the adjustment, or the estimation made by the tax inspection only through the draft tax inspection report, the tax inspection considering that by making available this draft, on which the taxpayer can formulate a point of view, its obligation to inform is fulfilled.

Such a view, however, is contradicted by the express provisions of Art. 130 para. (1) of the Fiscal Procedure Code according to which *"The taxpayer/payer must be informed during the tax inspection about the aspects found during the tax inspection action, and at its conclusion, about the findings and their tax consequences".* Therefore, the first thesis of Art. 130 para. (1) of the Fiscal Procedure Code regulates one of the components of the right to be heard, provided for in art. Art. 9 of the Fiscal Procedure Code – during the tax inspection – which is distinct from the one related to the conclusion of the tax inspection (Lazăr and Florea, 2023).

As a rule, the obligation to inform during the tax inspection is oral and contradictory, but, in practice, the tax inspection often requests written explanatory notes from the taxpayer on various issues raised during the tax inspection (Anghel, 2020).

In the special situation of documenting the transfer prices charged between affiliated companies, however, if the tax inspection considers that the transfer pricing file prepared by the taxpayer is incomplete from the perspective of

documenting the compliance with the arm's length principle, it shall request in writing the taxpayer to provide additional information. The written form of the request is required by the provisions of Art. 5 para. (1) of Order no. 442/2016, according to which: *"At the written request of the tax inspection, in order to complete the transfer pricing file, the taxpayer/payer shall provide other additional information, relevant for documenting the compliance with the market value principle".*

The written form of the request for information is also required by Order no. 3710/2015 regulating the model and content of the Tax Inspection Report drawn up for legal entities: "2. Request/Submission of the transfer pricing file. It is specified whether it is necessary to request/submit the transfer pricing file. If it is decided that it is not necessary to request the transfer pricing file, this fact will be justified. If it is decided that it is necessary to submit the transfer pricing file, the number and date of the request for elaboration and presentation of the transfer pricing file, respectively the granted deadline, including references to the taxpayer's request to extend the deadline for its submission, if applicable, shall be recorded. At the same time, information shall be presented on:

a) failure to submit the transfer pricing file on time;
b) incomplete submission of the transfer pricing file, respectively justifications of the missing data necessary to the competent tax body to determine whether the practiced transfer prices comply with the market value principle.

In the situations referred to in letters a) and b), references shall be included regarding the number and date of the address regarding a new request for submission/completion of the transfer pricing file, respectively the new deadline, recording also the situations in which the taxpayer did not respond to this new request of the transfer pricing file, respectively the requested additions, within the established deadlines". Although from the provisions of Art. 5 para. (1) of Order no. 442/2016 results that the tax inspection has the possibility and not the obligation to request additional information, the provisions of Order no. 3710/2015 require the tax inspection to mention the number and date of the address by which is requested the completion of the transfer pricing file.

Also, from the corroborated interpretation of the relevant provisions of Order no. 442/2016 and those of Order no. 3710/2015, it follows that the obligation of the tax inspection to request additional information in writing from the taxpayer refers only to the estimation of the transfer prices hypothesis, respectively when the transfer pricing file is considered incomplete.

However, a thorough analysis of the notions of adjustment and estimation (which is the subject of another paper), apart from the clear situation in which estimation is made due to the failure to submit the transfer pricing file, shows that, theoretically, within the adjustment and estimation procedures, the tax inspection is entitled to undertake the same actions, such as to invalidate the

transfer pricing method, the search strategy, the list of companies in the comparability range etc. The same analysis reveals that both the adjustment and the estimation are based on the taxpayer's lack of documentation that transfer prices comply with the market value principle [see Arts. 7 paras. (1) and (4) of Order no. 442/2016].

From the author's point of view, even if it could be argued that the legal provisions in force allow a clear differentiation between adjustment and estimation, the obligation of the tax inspection to request additional information from the taxpayer during the tax inspection exists both in the estimation and in the adjustment procedures, in the latter case the need for the request being based on the same reasons, i.e. additional information that may justify the analysis contained in the transfer pricing file.

Therefore, the tax inspection has not only the right, but also the obligation to request additional information from the taxpayer if it considers that it is necessary to document the prices charged between affiliated companies, this obligation deriving from the broader obligation regulated by the express provisions of art. 130 para. (1) of the Fiscal Procedure Code. If the tax inspection fails to comply with this obligation, we consider that the taxpayer's right to be heard, as an expression of the constitutional right of defence, which includes, in tax matters, the taxpayer's right to take part in the procedure in which the tax assessment is made and to express itself on all relevant elements of the case, is breached (Costaș, 2016).

Compliance with this right is independent of the outcome of the tax inspection procedure and its breach cannot be corrected neither in the administrative procedure, nor in court. From our point of view, the sanction of non-observance of this fundamental right is the one regulated by the provisions of Art. 49 para. (3) of the Tax Procedure Code, respectively the annulment of the tax decision conditioned by the taxpayer's proof of an injury.

4. PRACTICAL CASES

A prime example illustrating the breach by the tax authority of the right to be heard is of a company providing transport services to affiliated entities established in other EU Member States. During the tax inspection, the tax auditors requested the company the preparation of the transfer pricing file for all transactions carried out by it, directly or indirectly, with affiliated persons, ordering the suspension of the tax inspection for this reason.

Through the transfer pricing file, prepared and presented during the tax inspection, the taxpayer analysed the category of transport services provided to its affiliates by two methods: primarily, prices were justified by applying the price comparison method, and additionally by the net margin method.

The tax inspection removed the price comparison method, accepting the incidence of the net margin method, but based on its own comparability study,

different from the comparability study elaborated by the taxpayer in the transfer pricing file, and estimated the transfer prices for transactions with affiliated companies consisting of transport services.

In fact, almost immediately after the taxpayer submitted the transfer pricing file, the tax inspection requested the Transfer Pricing Department of the tax administration to extract and to communicate a range of comparable companies. The transfer pricing file, with over 200 pages, was submitted by the company on a Friday, and the request to the Transfer Pricing Department was made on Monday of the following week. In the Tax Inspection Report, the tax inspection motivates the request made to the Transfer Pricing Department by the fact that "from the analysis of the transfer pricing file, the tax inspection team found that the company's submission of the functional and comparability analysis does not reflect the central trend of the market according to Annex 3, letter B, item 13, letter f) of OPANAF 442/2016".

However, considering the short period between the date of submission of the transfer pricing file and the date of the request made to the Transfer Pricing Department, but also the fact that the two full days of this period were weekend days, there are serious doubts that the tax inspection has analysed the transfer pricing file, as mentioned in the Tax Inspection Report. In addition, the tax inspection addressed directly to the Transfer Pricing Department without requesting additional information from the taxpayer, as expressly provided for in Art. 5 of Order No. 442/2016.

After a period of approximately two months since the Transfer Pricing Department communicated the range of comparable entities, the tax inspection sent the taxpayer an address requesting the completion of the transfer pricing file, but only from the perspective of the second method used to document transactions consisting of transport services, i.e. the net margin method. This example illustrates the breach by the tax inspection of the taxpayer's right to be heard during the tax inspection and the purely formal character of the request to complete the transfer pricing file, being obvious, from the sequence of events and from the content of the tax inspection documents, that the transfer prices were estimated based on the separate comparability study prepared by the tax inspection before making the request to complete the transfer pricing file.

The second example refers to the same taxpayer, which was subjected to another tax inspection during which the tax inspection also requested the submission of the transfer pricing file. The taxpayer fulfilled this obligation by preparing and submitting the transfer pricing file within the legal deadline, through this file being documented the prices charged by the taxpayer with affiliated companies for several categories of transactions, including transport services. The documentation made through the transfer pricing file showed that the prices charged between the taxpayer and the affiliated companies are market prices.

The file established that the net margin method is the most appropriate to analyse the transactions consisting of transport services between the taxpayer, and the beneficiary related companies, by selecting as profitability indicator *the rate of return on operating expenses* (net operating margin on costs). By comparing the taxpayer's net operating margin on costs for each analysed year with the range (market range) of net operating margins on costs of comparable companies identified because of a comparability study, it resulted that, in one of the analysed years, the net operating margin on costs of the taxpayer does not fall within the market range.

However, in the transfer pricing file, it was considered that this lower net operating margin on costs did not reflect the reality, its low level being the result of objective causes that affected the company's operating income (by decreasing it), but also the operating expenses (by increasing them). For this reason, the net operating margin was theoretically adjusted by increasing the operating income by the amount of unrealised income and by decreasing the operating expenses by additional expenses generated by objective causes affecting the company's activity, and the financial effect of which should not be passed on, through the prices charged, to the beneficiaries of the services.

By increasing operating income and decreasing operating expenses, the taxpayer's net operating margin on costs was adjusted/increased with the result that the net margin/profitability indicator of the taxpayer was within the market range determined by the transfer pricing file. The tax inspection did not contest the analysis made through the transfer pricing file. However, in the Tax Inspection Report, the tax inspection considered exclusively the lower net operating margin on costs, ignoring the theoretically increased one.

In this case, although the tax inspection lasted, not taking into account the suspension periods, 188 days, and for a period of 113 days it was suspended in order to obtain data and information from third parties, the tax inspection never informed the taxpayer about the intention to adjust the income from services provided to affiliates considering the initial (lower) indicator, nor did it request additional information/documents regarding the adjustment/increase of the net margin. This case also illustrates that the tax inspection has not fulfilled its obligation to inform and request additional information in accordance with the legal imperative.

5. CONCLUSIONS

As repeatedly pointed out in the OECD Transfer Pricing Guidelines, transfer pricing is not an exact science, reason why, in the process of their determination, the results may differ depending on the used methodology. The essential aspects of this process are the appropriate documentation and the use of available information. Also, the OECD Transfer Pricing Guidelines recommend tax administrations to analyse transfer pricing files, first, from the perspective of

the information and data presented by the taxpayer therein, which are, as a rule, consistent with factual and commercial reality.

To the extent that the tax authorities totally or partially ignore the analysis and documentation contained in the transfer pricing file, without giving the taxpayer the opportunity to explain or provide additional information, the risk of making mistakes in the tax inspection increases. Therefore, the dialogue between the taxpayer and the tax inspection, on the analysis and documentation of transfer prices, is imperative. The requirement of dialogue is regulated, generally, by the provisions of Art. 130 para. (1) of the Fiscal Procedure Code, but also by the provisions of Art. 5 para. (1) of Order no. 442/2016.

Unfortunately, the absence of such a dialogue is not sanctioned neither in the administrative procedure, nor in the judicial one, being considered a mere formality without legal effects, although precisely this dialogue should substantiate the analysis of the transfer pricing file.

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HUMAN RESOURCES – A RPA PERSPECTIVE

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Abstract
Robotic Process Automation - RPA technologies are known as solutions to support or replace the human factor by automating repetitive and routine tasks, with a positive impact translated by increasing the level of productivity and eliminating the risk of error specific to such operations. These software "robots" have been adopted rapidly and widely in various fields of activity, given the proven efficiency in the field of data collection and information provision in departments or segments of operational flow where the volume of routine processes is high but also big time and money consuming. Beyond the immediate and measurable benefits of various key performance indicators, the implementation of such systems within organizations - regardless of their nature - raises a rather thorny issue, namely the relocation of human resources that is practically removed from current attributions and tasks for which it is qualified. This article aims to assess as closely as possible the ethical aspects of RPA digitization and the effects that such technologies can have on an essential component of a company's capital: the human factor.
Keywords: *Robotic Process Automation; human resources management; digitalization; data analysis.*
JEL Classification: M1, M2, M4, O3.

1. INTRODUCTION

In England during the industrial revolution of 1811-1817, a group of textile workers whose jobs were threatened with extinction following the introduction of new machines, started a real revolt by attacking several production facilities. Although suppressed by the British government, the movement has remained in the memory of economic theorists as a form of protest regarding the widespread introduction of automation thus seen as a cause of job losses for certain categories of workers (Brynjolfsson and McAfee, 2014). Thus, the need for efficiency and increased profitability determined by mass production led industrialists to see technological progress as a solution with positive effects in terms of financial results; The social impact, however, had dramatic connotations, especially in terms of the effects determined by the new "technological unemployment". The latter phrase was originally defined as a new "disease" by John Maynard Keynes in his 1930 essay – "Economic

Possibilities for Our Grandchildren". The economist predicted a reality that was increasingly close to his times, namely, the replacement of the classical workforce by industrial innovations that were carried out at a higher rate than an eventual professional reconversion (Keynes, 1932).

In the opinion of other theorists, the unemployment thus arising is a temporary phenomenon and of a small magnitude; John Bates Clark argued that technological progress is a component of the creative force of capitalism, and although economic dynamics displace human resources from classical positions, better opportunities are created (Clark, 1907). The economic crisis that broke out in 1929 seemed to confirm Keynes' theory, but the period after World War II created an acute need for labor, with technological unemployment disappearing as a threat at least for a while.

The advent of the computer and the Internet, however, led to new dilemmas in the world economic landscape, which led the Nobel Prize laureate, Wassily Leontief, in 1983, to bet on the gradual reduction of the role of the most important factor of production, namely, the human resource, just as it happened with the disappearance of horses in agriculture, being replaced by tractors (Leontief, 1983). The theory that technology is a major cause of job loss has been challenged, however, by a wide spectrum of economists who believe that automation and other forms of technological progress generate more jobs than they eliminate. Apparently, the reasoning is simple: reducing production costs leads to lower prices and, implicitly, to an increase in demand; in a competitive market, technological changes have the effect of increasing production, which requires more labor, thus compensating for the reduction of human resource expenses per unit of product (Brynjolfsson and McAfee, 2014).

The accelerated pace of digitalization in recent years, the regional specificity in the broad spectrum of globalization, the complexity of the implications of automation in different fields or branches of economic activity require, however, a more careful analysis of the perspectives of the labor factor of production in terms of certain aspects, beyond the general self-regulation mechanisms mentioned. In recent years, consistent signals have been sent to analysts and policy makers regarding the adverse effects of smart information technologies, especially on the risk of unemployment. Such a warning concludes that, based on a machine-learning algorithm developed at Oxford University, 47% of jobs in the USA are at risk of being automated in the next 20 years (Frey and Osborne, 2017; Nedelkoska and Quintini, 2018). Elon Musk warned in 2017, at a World Government Summit in Dubai, about mass unemployment, which will be a real social challenge due to the sharp reduction in the number of jobs that will not be affected by robotization, and Bill Gates even proposes the taxation of automated work (Larson, 2017).

However, the dynamics of the current global economy as well as the shortage of qualified personnel in certain sectors together with the phenomenon

of migration urge a certain dose of skepticism in the analysis of studies and statistics and a realistic approach to the analysis of the effects of digitalization. In the case of RPA – Robotic Process Automation products, the arguments presented above are no exception, but it is necessary to present the particularities determined by the application of such software products. Thus, in the general and complex landscape of automation, it should be noted that RPA products outline a new market with a growth potential by 2030 at the level of approximately 31 billion. dollars, according to a Grand View Research study conducted in April 2022. The demonstrated role in making operations more efficient within an organization is also based on the potential of such a software robot to replace the work of 2 to 5 employees in terms of performing routine, repetitive and time-consuming activities.

This article reveals and analyzes a possible series of RPA effects on human resources such as unemployment, employee demotivation as well as the need to rethink organizational culture. The scientific approach considers the current context of automation but also the real needs and possibilities of professional retraining of human resources.

2. WHAT IS AN RPA AND WHAT IS IT FOR?

"Robotic Process Automation (RPA)" is, in essence, a software solution that summarizes a complex of tools intended for automating repetitive processes or tasks and in significant volume (Lawton, 2021), replacing or minimizing the intervention of the human factor. The automation of work processes started since the industrial era and replaced manual data entry, thus contributing to the development and implementation of RPA on a large scale in information processing on various organizational levels. The applications of Robotic Process Automation, according to a definition given by Professor Leslie Willcocks from the London School of Economics, "mimic the activity that a human performs in order to perform a task within a process, performing repetitive operations faster, more accurately and for a longer duration than a human can perform" (Lhuer, 2016, p. 1). Thus, data are transferred from email or spreadsheet sources to other processing or registration systems – for example, from the Enterprise Resource Planning (ERP) and Customer Relationship Manager (CRM) category, the ease of such operations determining a generalized absorption of RPA within, mainly, large companies interested in reducing costs at the same time as increasing the quality of the services provided and in the shortest possible time frame (Lacity and Willcocks, 2016). Relieving human resources of repetitive, energy-consuming tasks that are permanently at risk of inherent errors thus leads to an increased availability for creative, challenging and value-generating activities.

For a correct understanding of the notion, three basic characteristics of RPA emerge that are eloquent for the way these systems interact with data and complement the information systems within organizations:

- ✓ *Mimicking human actions* – similarity to how the human factor interacts with applications (common interfaces), collects information, and then uses it by inserting it into other applications or worksheets (Vasarhelyi and Rozario, 2018). The replication of human operations is carried out after a prior recording of the targeted processes, thus helping to avoid inherent errors caused by routine (Quinn and Strauss, 2018).
- ✓ *Automation of repetitive processes* – the absence of the decision-making or creative component by following a set of well-defined rules, this aspect being partially compensated by Machine Learning algorithms or Artificial Intelligence technologies (Vieira, 2015). Relieving employees of routine and repetitive tasks allows them to be involved in more complex and motivating activities, with a direct effect on increasing the level of creativity of the work performed.
- ✓ *Use of existing applications* – use of the usual interfaces, no complex integration or special connection is required for current applications. Interconnectivity with tools such as PDF, MS Excel, ERP, CRM, PowerPoint, etc., as well as with HTML pages or email programs contributes to increasing operational efficiency within an organization by reducing costs (Siderska, 2020).

Thus, RPA systems connected to the applications in an organization's information system can move and transmit files, folders, or other types of data, read, and interpret emails, fill in forms and manipulate structured/unstructured data from documents, browsers, or other sources. This non-intrusive interaction with other digital systems allows a complete or at least partial automation of specific human processes or activities with a beneficial effect on the level of efficiency or operational productivity (Vasarhelyi and Rozario, 2018).

3. RESEARCH METHODOLOGY

The study analyzes the implications of RPA in the process of allocating human resources through a contextual approach to the current developments in the field by analyzing the articles dedicated to this topic, but also the case studies or statistics made by the main players in the market:

- RPA product providers – white paper publications, applications offered, fields of application, development trends, etc.
- Companies specialized in market research, e.g., Gartner, Forrester – scoring the main trends, predictions for the development of automation tools in terms of investments or areas of use.
- Companies/government organizations – with experience in implementing RPA, but also in terms of redistributing and/or retraining human resources directly affected by the automation of routine processes.

The dynamics of the analyzed field requires a certain rigor of the way of

selecting the materials in terms of sources, they must be recognized and verifiable, the year of publication, emphasis is placed on novelty, the relevance of the content, extraction of innovative ideas. Thus, the identification of data sources containing publications relevant to the subject resulted in electronic libraries such as IEEE, Science Direct – Elsevier, SpringerLink and Google Scholar. In addition, the bibliographic resources cited in the content of the articles thus identified were also taken into consideration and the alerts from Google Scholar were necessary to identify, during the writing of this paper, the news published about RPA. Publications in English were considered by introducing in the search process expressions such as: "robotic process automation", "cognitive process automation", "intelligent process automation", "RPA and unemployment", RPA impact on employees". The use of the abbreviation "RPA" has been avoided because the acronym serves a broader terminology, unrelated to the processes envisaged. For instance, Remotely Piloted Aircraft – in NATO terminology, Rubin Postaer Associates – advertising agency, Replication Protein A – the main protein that binds to single-stranded DNA in eukaryotic cells, Republican Party of Arkansas/Armenia – political parties, etc. Similarly, the phrase "RPA impact on HR" was not used, as it generated a suite of software solutions dedicated to the management of human resources within a company.

The main research questions of the study can be summarized as follows:

Q1. What are the current applications for RPA?

Q2. What are the known effects of RPA involvement on human resources within an organization?

Q3. What are the main dilemmas or challenges in terms of the social impact generated by RPA following the need for professional reorientation or relocation of employees?

Based on the research questions, the criteria for acceptance and exclusion of the relevant articles were established:

Acceptance criteria:

- The publications correspond to the topic of RPA and contribute with answers to the proposed research questions.
- Titles and abstracts contribute to the research idea and contain the terminology stated above ("robotic process automation", "RPA and unemployment", etc.).

Exclusion criteria:

- Publications are not written in English.
- Titles and abstracts do not contribute to the resolution of research questions, although they include the terminology used to search for them.
- Ideas or other relevant aspects of the research are repeated.
- The extracted publication only compares existing research, without

bringing new contributions or ideas.

Both acceptance criteria were considered to take over the source of information and if only one exclusion criterion was verified, the article was not included in the research base.

4. RPA SUCCESS STORIES

The results achieved so far, financially, and operationally, further encourage the implementation of RPA worldwide, where appropriate. According to a 2020 Gartner report, the RPA market is the fastest growing segment in the software area: 63.1% in 2018 and 62.9% in 2019, compared to 13.5% and 11.5% representing total market developments (Gartner, 2020). At the same time, against the backdrop of the COVID-19 pandemic and, implicitly, the global recession, the same study estimates an acceleration in the insertion of RPA solutions to support remote work, the digitization of physical/paper operations. The losses recorded by companies during this period have led to a pressing need to reduce expenses by automating processes and reducing the number of employees involved in performing redundant tasks. Thus, a Grand View Research Report notes an increase in RPA adoption with an annual growth rate of 39,9% from 2023 to 2030 (Grand View Research, 2024).

The analysis of the success stories of RPA implementation within organizations – companies, government institutions, etc. – reveals, first, the achievement of a high return on investment (ROI), while reducing the processing time of repetitive tasks, reducing the error rate, and reducing operational costs. To cover different fields and to provide a more complete picture of the current level of involvement of process automation, case studies from the financial-banking field, industry as well as public services are further analyzed.

Bancolombia, one of the largest financial groups in Latin America, operates in 12 countries, being ranked 4th on the list of the most sustainable banks worldwide in 2019. At such a level of operational complexity, the need for digitization of the work methodology was manifested within the organization to streamline internal processes. In this context, the implementation of RPA technologies pursued the following objectives:

- ✓ Relieving human resources of routine, repetitive tasks as well as reorienting them towards activities with superior creative potential.
- ✓ Improving the company-customer relationship through faster and more efficient services.
- ✓ Reduction of complaints and information reprocessing.
- ✓ Increase productivity and reduce operational risks.

The actual effects in quantified form were extracted from reports of the RPA provider, the beneficiary as well as from other analyses of other

organizations interested in the evolution of RPA in the financial-banking area, as shown in Table 1.

Table 1. RPA impact for Bancolombia

Areas of impact	Results	RPA environment
Human resources	127,000 working hours released annually in over 600 branches 290 end-users trained in RPA practices 437 FTE (full-time equivalent) issued 2.2 mil. USD annual payroll savings	Instruments: 461 robots deployed Locations: Initial - Back-office processes Expansion – front-office processes Operations: 249 automated processes 1,858 automated workflows
Customer relationship	50% increase in customer support service efficiency Implementation of automation in consulting and helpdesk (2 products: Investbot, chatbot)	
Operational efficiency, return on investment	20% increase in sales in branches Reduced operational risk by 28%, 1300% ROI	

Source: own processing

From the point of view of human resources, Bancolombia claims that, under the motto "derobotization of talents", automation has improved the degree of employee satisfaction at work, beyond the decrease in labor costs (Ribaucourt, 2019). At the same time, the taking over of administrative tasks by RPA gives the sales teams the possibility of increased focus on the relationship with the beneficiaries, on activities with high creative potential (consulting, diversification of service packages offered, etc.), although automation, in tandem with an artificial intelligence component, has also intervened in financial consulting and analysis. Thus, through the Investbot robot, Bancolombia supports clients in managing their investment portfolio, provides real-time information on their performance and financial market predictions are made. At the same time, the implementation of a "chatbot" in the customer-bank relationship creates the possibility of providing financial advice online as well as generating dynamic keys for securing digital transactions.

The Quality Management department of **Mercedes-Benz AG** is constantly faced with the need to ensure certificate compliance for component parts in the final products sold in the Chinese market. MB and its suppliers must meet the standard requirements of China Compulsory Certification (CCC), which basically leads to an extensive process marked by strict legal regulations or regular audits by the authorities. Any syncope in the information flow between MB and its suppliers can lead to blocking access to the target market products with major strategic implications for the entire industrial group (Kreuzwieser *et*

al., 2021). Consequently, the company decided, in April 2019, to check all 1500 certificates uploaded to its own database to detect invalid or missing documents. The entire procedure was carried out manually, the inspection requiring a considerable workload (229 hours of work) and having a high rate of specific human error. The company's decision to opt for RPA was aimed at solving several desires, among which the following can be listed:

- ✓ Reduction of certificate processing/verification time;
- ✓ Imprint a continuous character to the product quality validation process – CCC;
- ✓ Improving the quality and accuracy of the MB supplier certificate database.

In this case, one of the determining factors of the successful automation of the process of monitoring the certificates of conformity was the cooperation with the departments directly involved, the start being given by the staff with Quality Management attributions. The involvement of the Procurement and Certification departments in the design and implementation phase, together with the services of an external consulting firm, led to a realistic and sustainable architecture of the RPA project.

Table 2. RPA impact for Mercedes-Benz AG

Areas of impact	Results	RPA environment
Human resources	Reduction of processing time from 229 hours to 51 hours 5,075 FTE The ad-hoc certificate verification process is supervised by 1 employee	Instruments: RPA implemented in about 2 months (Uipath product) Working mode: ✓ Before RPA is enabled, an employee selects the type of technical documentation to process ✓ Select all certificate numbers and save them to checklists ✓ Comparison of the lists with the history of certificates on each supplier ✓ The deviations are translated into the Excel report and sent to the Procurement.
Customer relationship	Increase customer satisfaction with the final product	
Operational efficiency, return on investment	Reduction of the percentage of invalid certificates from 17% to 5% Reducing the error rate to less than 1%	

Source: own processing

As the company was at the first implementation of such IT tools, external consultants encouraged the introduction of a preliminary "proof of concept" stage to determine the feasibility of the project. This procedure lasted 3 weeks and finally led to the decision to adopt RPA in the on-premises version. The

introduction of process automation took about two months and streamlined the management of the relationship with suppliers, on the one hand, and ensured the compliance required by foreign markets, on the other hand. The replacement of hundreds of hours of manual database verification and processing work with an automated system eventually led to the handover of the entire RPA process to an MB subsidiary.

In the public sector, an eloquent example is provided by the automation implemented in the Swedish city **of Ronneby,** where the municipality manages social assistance services. Thus, the granting of aid to families with insufficient income or in financial impasse is carried out based on the analysis of the files submitted by the applicants; social workers receive and process the submitted documents and decide whether assistance in the form of advice or financial aid is appropriate (Socialstyrelsen, 2021). Prior to automation, the documents were submitted on paper and starting with February 2019 it became possible to submit the documentation via email or by uploading it to the institution's website. In those circumstances, the work of the employees of the Swedish municipality consisted mainly of administrative tasks, repetitive and in significant volume, given that the applications are submitted monthly. The implementation of RPA, in this case, pursued the following objectives: speeding up the process of analyzing the files submitted for the granting of social assistance, reduction of budget expenditures and increasing the share of advisory services.

The automation of the operations underlying the provision of social services presented was carried out in stages, with the following targeting: application renewal procedures – February 2020, analysis of new files – June 2022, and control processes overactive files – March 2021.

As preliminary actions in ensuring the functionality of the Ronney robot (as it was named by employees) can be considered: the implementation of digital application transmission solutions as well as streamlining work processes based on an exhaustive set of rules governing the entire process of dealing with applications received for social assistance (Karlberg Hauge, 2022). The digitalization of operations has thus led to the desired results, the effects of the transformation of social workers' work through RPA being transposed into Table 3.

The automation of the file analysis processes leads to a higher level of accuracy of social assistance decisions in accordance with the set of rules that establishes the level of amounts to which applicants or households are entitled. Thus, the risk of human-specific error or even the possible tendencies of subjectivism that may appear in the analysis of the applications is removed. At the same time, the liberation of human resources from repetitive, purely administrative activities and the specialization of more than half of the available staff on support and consultancy activities for families in financial impasse have positive long-term effects for local budgets. It is estimated that the identification

of a stable job by the applicants will lead to the elimination of the need for financial support but also to an increase in budget revenues because of salary taxes and other fiscal components.

Table 3. RPA impact for Ronneby municipality

Areas of impact	Results	Implement RPA
Human resources	70% of the approximately 450 applications/month are digitally transmitted and processed via RPA 14 workers move from the same administrative tasks to organization in 2 groups with different objectives (file processing, consultancy)	Instruments: The Ronney robot – gradually involved in: ✓ Renewal of files ✓ Processing new files ✓ Operational control through: - Taking over the collected information and comparing it with officially recorded data; - Generating essential reports for establishing the level of social assistance; - Issuing notifications on changes in files; - Regular checks on the status of applicants.
Beneficiaries of social aid	Reducing by an average of 8 days the processing time of the files (from 19 to 11 days), implicitly the number of phone calls from complainants dissatisfied with the duration of the analysis of the applications	
Operational efficiency, return on investment	Elimination of redundant operations and data. Reduction of applications for social assistance (following the intensification of counselling services)	

Source: own processing

5. DISCUSSIONS

In general, when discussing notions from the large family of typology generated by digitization/automation, etc., ideas related to easy data processing, intelligent systems for generating information and knowledge, technological progress with a direct effect on the efficiency and profitability of organizational processes are conveyed even at the definition stage. By way of example, we can mention:

- ✓ *Business Intelligence applications* – "automated systems for disseminating information to various sections of any industrial, scientific or governmental organization" (Heinze, 2014); "the set of concepts and techniques that support the business decision-making process" (Kemp and Dietz, 2009).
- ✓ *Data warehouses* – "a set of tools for querying, analyzing, and presenting information" (Kimball and Ross, 2002); "a collection of subject-oriented, integrated, historical, and non-volatile data intended to support managerial decision-making" (Inmon, 1992).

- ✓ *Big Data Analytics* – "advanced analysis techniques applied to large data sets" (Russom, 2011).
- ✓ *Cloud Computing* – "technical support for cloud services that provide real-time solutions over the Internet" (Bohm and Krcmar, 2011); "a new technology for hosting computing resources and delivering services over the Internet" (Abbasov, 2014).

On the other hand, from the definitions dedicated to RPA terminology as well as from the analysis of the functionality of this software solution, there is underlined the objective of "replacing" or "minimizing" the role of the human factor in carrying out repetitive and time-consuming operations (Hyun *et al.*, 2021; Lawton, 2021; Hsiung and Wuang, 2022; Atencio *et al.*, 2022; Fatima *et al.*, 2022; Sobczak, 2022). From the conceptualization phase, relieving employees of routine tasks and those who are at high risk of error leaves room for interpretation for at least two reasons: Is the entire human resource directly affected in terms of duties by the installation of RPA capable of adopting more complex tasks or tasks with higher creative potential? If the answer to the previous question is no (totally or partially), what personnel policies can management adopt to use the workforce thus deployed and which are in line with the objectives of the respective organization?

Beyond the perspective outlined by figures, from the point of view of human resources directly involved or affected by the automation process, the same studies highlight advantages such as:

- "Derobotization" of employees – eliminating boring and repetitive tasks, while developing an environment that encourages creativity.
- Employee flexibility – creating new levers and skills for working remotely and on online platforms (as demonstrated during the Covid pandemic) (Piroșcă *et al.*, 2021).
- Motivating employees – reconsidering job descriptions by converting them to more complex, more engaging tasks and at the real level of the intellectual capacities of the data subjects.

The case studies presented are examples of successful RPA implementation considering the results obtained through automation, organizations thus managing to streamline operations that, in the first phase, were large consumers of resources (human, material or financial) and that led to questionable final reports in terms of accuracy and timeliness.

Depending on the sector of activity and the profile of the organization, the introduction of RPA was mainly aimed at replacing manual operations and eliminating the specific risk of error. To reach such a result, the cases presented demonstrate a series of prerequisites necessary for this type of digitization:

- ✓ Standardization of processes – the operations concerned must be based on a precise set of rules.

- ✓ Operational volume – automation brings real benefits in the case of processing a considerable amount of information.
- ✓ Operational routine – the targeted processes must be of a high frequency, having an accentuated repetitive character.

Table 4. Comparative analysis on RPA impact

Organization	Targeted operations	Operational volume	Operational routine
Bancolombia	Back-office & front-office operations	249 processes/ operations	Filling in electronic forms Investment Portfolio Monitoring
Ronneby Municipality	Application Processing Renewal of applications Compliance control	450 files/month	Collection of data uploaded electronically or submitted on paper Verify documents
Mercedes-Benz AG	Updating the database on suppliers' certificates of conformity	28,000 positions in the database	Regular verification of certificate compliance based on checklist

Source: own processing

From the perspective of human resources directly affected by process transformations, things are different from one case to another depending on the complexity of the mechanisms needed to be digitized, the level of staff training and the post-automation transformations in the organizational chart or operational flow. Both in the case studies presented and, also, in the reviewed literature (Piroșcă *et al.*, 2021; Sobczak and Ziora, 2021; Atencio *et al.,* 2022 Bisht *et al.,* 2022; Cieslukovski *et al.,* 2022; Mohamed *et al.,* 2022; Tokarcikova, 2022) there is no complete information on the relocation of personnel replaced by software robots except in a few cases found mainly in public services.

In general, to assess the success of an RPA project, in addition to the financial results, e.g., ROI – Return on Investment, the FTE - full-time equivalent indicator is used to measure the entire work norms replaced by automation. Bancolombia declares 437 released FTEs at the branch level in the back-office and front-office areas, by including an artificial intelligence component. Thus, the relocation of staff to consulting seems to be a partially possible move since the consultancy is also carried out through a chatbot. Mercedes-Benz AG, in identifying a solution to eliminate any non-conformities of component parts suppliers and to permanently update its own database, supports the saving of 5,075 FTEs, by automating the processes within the

Quality Management department. The personnel policy in the context of the introduction of software robots is clearer within the municipality of Ronneby, an aspect highlighted not only by the case study presented or by the software provider, but also by the local press (Voister, 2020). In this case, we do not have information on released FTEs, but clarifications are made regarding the post-automation role of social workers within this public institution. Curiously, unlike the other two cases, the implementation of RPA was a lengthy process (from 2019 to 2021) and one that was carried out gradually. The explanation can be given by the fact that it is an activity with a high social impact and is subject to strict legislative regulations. At the same time, within the public service, the staff has higher education, being qualified in consultancy dedicated to individuals or families in financial impasse or looking for a job.

Table 5. RPA impact on HR

Organization	Released FTEs	Work freed up	Relocation of human resources
Bancolombia	437	72.000 hrs	Focus on increasing the skills of the digital employee No concrete data are available on the relocated staff
Ronneby Municipality	Unknown	64 hrs/ file	The team of 14 workers is divided into two working groups: file analysis and consultancy.
Mercedes-Benz AG	5.075	178 hrs	Staff are involved in the implementation of RPA The RPA solution is transferred to an MB subsidiary No concrete data are available on the relocated staff

Source: own processing

In the case of the public welfare service in Ronneby, the redistribution of human resources is beneficial in the long term for the local budget as the number of applications for financial aid may decrease as applicants are guided and supported in finding a job. Undoubtedly, RPA does not pose a threat to job security and contributes to increased job satisfaction for social workers who are relieved of administrative burdens. In the private sector, however, the reality can be different for several reasons:

- ✓ Financial reasons – e.g., in the RPA project, Bancolombia records ROI 1:14 and payroll savings of USD 2.2 million annually.
- ✓ Long-term strategies of organizations – Mercedes-Benz strengthens its position in the Chinese market.

- ✓ The COVID pandemic – caused a series of economic difficulties, forcing the operational resizing of companies.
- ✓ Emerging technologies – the generalized infusion of intelligent information processing tools determines the rethinking of human resources policies.

Regarding information technologies, it is not news that job security can be jeopardized by their adoption in the sphere of so-called "white collars". RPA solutions are primarily a threat to job description duties that require a medium level of professional training if viable relocation alternatives are not found within the organization or if employees are not engaged in retraining programs. Companies are more interested in developing a so-called "digital workforce" component in which the role of the human resource is dependent on the ability to adapt to new conditions. In the case of Mercedes-Benz or Bancolombia, the relocated staff may be involved in tasks that have arisen because of automation, such as maintaining the database, monitoring RPA processes, or using implemented IT tools (e.g., within Bancolombia, RPA has been bundled with other applications). These changes, however, depend on training in digital technologies, a minimum understanding of automation processes, the adoption of a specific language, the adoption of information processing tools.

6. CONCLUSIONS

It can be said that, in the current context of digitalization, process automation can become a disruptive factor for job security. Beyond other political, economic, or social convulsions that can give a character of general instability regarding HR strategies, excessive technology generates certain fears or, at least, raises questions about the fate of the targeted employees. Obviously, in the offers of RPA providers or in the information in any form of companies that have experimented with automation, there are appreciations about the fact that human resources are the main beneficiary as they are relieved of tedious and time-consuming tasks. It should be noted, however, that many of those employees have been hired or are trained for such activities, and any changes can have consequences such as: resistance to change - including sabotage of the project, inability to adapt to the new requirements and, finally, job loss. It is unrealistic, from our point of view, to consider that human resources will be able to fully adapt in the happy version in which the organization offers them this possibility.

The present work is marked by its own limits determined by a series of factors such as: small number of covered fields of activity or casuistry, lack of official financial accounting/HR data that denote possible personnel fluctuations, the pandemic period recently crossed which has the potential to divert certain results of the analyses on figures or situations from their true meaning. However, it is precisely these limitations in conjunction with the results presented that

encourage research in the direction of HR destiny in the context given by process automation and, especially, in the conditions in which RPA tools will acquire cognitive capabilities through the integration of artificial intelligence components.

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THE EFFECTIVE APPLICATION OF THE RULE OF LAW BY THE MEMBER STATES OF THE EUROPEAN UNION

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Abstract
The paper aims to explain, in the first part, the concept of the rule of law, as it is determined at the level of the European Union. From its creation until today, the principle of the rule of law has experienced a spectacular evolution and a very widespread in democratic states.
The second part the paper emphasizes some support mechanisms of the rule of law in the European Union while the last one refers to the analysis of how the member states of the European Union have effectively implemented the analyzed principle. In this sense, in our exposition, important decisions are analyzed, pronounced by the General Court and the Court of Justice of the European Union, with reference to the principles of legality and legal certainty, as well as the effective judicial protection. It was found that, although the rule of law is one of the essential values of the Union, which was constantly promoted by the Union bodies, it was repeatedly violated by the Member States; some of them even had vehement reactions related to the constraints endured in this regard.
The article is of real interest both for specialists in the field and, above all, for the Member States of the Union, which have the obligation to comply with the existing legal provisions of the European Union and the specific jurisprudence on the matter.
Keywords: *rule of law; application; European Union member states.*
JEL Classification: N44.

1. GENERAL CONSIDERATINS ON THE RULE OF LAW

The expression *rule of law*, created by German jurists in the 19th century and originally directly related to the state, has been explained as meaning a state subject to the law or legal order existing at a given time. Currently, *the rule of law* is considered a fundamental principle both in the legal order of states and in that of international organizations, which have, among their objectives, the defense of democratic values, in general, and the protection of the rule of law, in particular (Stiegel and De Schamp, 2023).

The concept of *the rule of law* was and is, permanently, also in the attention of specialists in the field, because it has a complex content, in a continuous transformation, which involves numerous demands, developed, extensively, in

multiple works and international conferences organized on this topic. This principle (which is related to all areas of development in a society or community) aims, *inter alia*: the placing laws at the top of the hierarchy of the sources of law; the concrete application of the principle of the separation of powers in the state, respecting all its requirements (the existence of different functions, exercised by distinct authorities within a state; the control, as well as the collaboration of the state bodies that exercise these functions); the enshrining and the guaranteeing the fundamental rights of citizens; the effective judicial protection; the media independence; the compliance with the principles of legality and legal security; in general terms, the promoting all democratic values.

Of a real use in explaining the analyzed principle is the document adopted by the "Venice Commission" (European Commission, 2016) within the Council of Europe, which offers a series of essential benchmarks in defining the term subject to examination (marks whose scope is detailed through many other concepts): *legality* (supremacy of the law, compliance with the law, relationship between international law and domestic law, law-making powers of the executive, law-making procedures, exceptions in emergency situations, duty to implement the law, private actors in charge of public tasks)*; legal certainty* (accessibility of legislation, accessibility of court decisions, foreseeability of the laws, stability and consistency of law, the principle of legitimate expectations, non-retroactivity, *nullum crimen sine lege and nulla poena sine lege* principles, the *ne bis in idem* principle)*; prevention of abuse or misuse of powers; equality before the law and non-discrimination* (equality in law, equality before the law, non-discrimination)*; access to justice* (independence and impartiality, fair trial, constitutional justice, if applicable); *examples of particular challenges to the rule of law* (corruption and conflict interest, collection of data and surveillance). The standards relating to the benchmarks are also determined in the aforementioned legal act.

2. SUPPORT MECHANISMS OF THE RULE OF LAW IN THE EUROPEAN UNION

The rule of law is referred to in the preamble of the Treaty on European Union (European Union, 2016): states confirm "their attachment to the principles of liberty, democracy and respect for human rights and fundamental freedoms and of *the rule of law*".

The rule of law is also mentioned in the preamble of the Fundamental Charter of Human Rights (European Union, 2012, pp. 391–407): "conscious of its spiritual and moral heritage, the Union is founded on the indivisible, universal values of human dignity, freedom, equality and solidarity; it is based on the principles of democracy and *the rule of law*".

Article 2 on the Treaty on European Union (TEU) enshrines the values, which are the basis of this regional organization, including the rule of law: "the

Union is founded on the values of respect for human dignity, freedom, democracy, equality, *the rule of law* and respect for human rights, including the rights of persons belonging to minorities". The consequence of violating these values is the initiation of the procedure provided for in the article 7 of the treaty. Thus, "the Council, acting by a majority of four fifths of its members after obtaining the consent of the European Parliament, may determine that there is a clear risk of a serious breach by a Member State of the values referred to in the article 2. Before making such a determination, the Council shall hear the Member State in question and may address recommendations to it, acting in accordance with the same procedure. The Council shall regularly verify that the grounds on which such a determination was made continue to apply. In the next phase, the European Council, acting by unanimity on a proposal by one third of the Member States or by the Commission and after obtaining the consent of the European Parliament, may determine the existence of a serious and persistent breach by a Member State of the values referred to in the article 2, after inviting the Member State in question to submit its observations. In another stage that follows in this procedure, after such a determination has been made, the Council, acting by a qualified majority, may decide to suspend some of the rights deriving from the application of the Treaties to the Member State in question, including the voting rights of the representative of the government of that Member State in the Council. In doing so, the Council shall consider the possible consequences of such a suspension on the rights and obligations of natural and legal persons. The obligations of the Member State in question under the Treaties shall in any case continue to be binding on that State. The Council, acting by a qualified majority, may decide subsequently to vary or revoke measures taken in response to changes in the situation which led to their being imposed".

Because it was considered that the procedure mentioned above is not sufficient, in 2020, the Council and the European Parliament have adopted the Rule of Law Conditionality Regulation. This normative act was contested by Hungary and Poland, before the Court of Justice of the European Union or CJEU, which ruled two relevant decisions in this sense (CJEU, 2022a and 2022b).

According to the article 19 of the Treaty on the European Union (TEU), Member States shall provide remedies sufficient to ensure effective legal protection in the fields covered by Union law. The expression *effective legal protection* also includes the obligation for Member States to ensure *effective judicial protection*, an essential requirement for respecting the rule of law. In the same vein, TEU enshrines the rule of law as an essential condition for the accession of a state to the European Union (article 49).

The principles of the EU Treaty regarding the external action of the Union are stated by the Article 21: "1.The Union's action on the international scene shall be guided by the principles which have inspired its own creation,

development and enlargement, and which it seeks to advance in the wider world: democracy, the rule of law, the universality and indivisibility of human rights and fundamental freedoms, respect for human dignity, the principles of equality and solidarity, and respect for the principles of the United Nations Charter and international law. 2. The Union shall define and pursue common policies and actions and shall work for a high degree of cooperation in all fields of international relations, in order to: […] consolidate and support democracy, *the rule of law*, human rights and the principles of international law. According to art. 23 TEU, the Union's action on the international scene, pursuant to this Chapter, shall be guided by the principles, shall pursue the objectives of, and be conducted in accordance with, the general provisions laid down in Chapter 1, that is, the provisions of the Article 21.

Starting from 2003, the examined principle was constantly under the attention of the European Commission, the Council and the European Parliament, which developed a series of important documents on the matter, which were analyzed extensively in another exposition. Based on the normative act issued in 2019 by the Union Executive (European Commission, 2019a), entitled *Strengthening the rule of law within the Union. A blueprint for action*, the latter has drawn up, starting in 2020, a report on compliance with the rule of law. The latter is one of the most important ways to uphold the rule of law.

In 2019, the European Commission, Directorate-General for Justice and Consumers requested a survey on the rule of law (European Commission, 2019b). This Eurobarometer survey shows the importance and urgent need to improve the content of the concept of the rule of law, which includes 17 principles, grouped into three important areas: *legality, legal certainty, equality before the law and separation of powers* (equality before the law; clarity and stability of the law; ease in following how parliament adopts laws; lawmakers act in the public interest; independent control on laws); *prohibition of arbitrariness and penalties for corruption* (clarity of public authorities' decisions; independent review of public authorities' decisions; unbiased decisions; making decisions in the public interest; acting on corruption; codes of ethics for politicians); *effective judicial protection by independent courts* (access to an independent court; length or cost of court proceedings; the independence of judges; the proper investigation of crimes; respect for and application of court rulings; codes of conduct for politicians). This document emphasizes the importance of the media and citizens in defending the principle under consideration. Most respondents involved in the above survey (27655 respondents) considered that: the requirements of the rule of law are essential or important; their compliance must be improved in the member states of the European Union; there is a need to better inform citizens about the essential values of the Union.

The Rule of law Report 2023 (European Commission, 2023a) makes an analysis of four pillars: national justice systems, anti-corruption frameworks, media pluralism and other institutional checks-and balances. The report mentioned above contains a general report on the rule of law in the EU, as well as separate chapters, which include detailed analyzes in the field related to each Member State. An evaluation of the recommendations from previous years' reports is also included in the report, around 65% of them being respected. It should be noted that, from 2023, the report also contains specific recommendations, which are addressed to the concerned states. Many of these have carried out multiple reforms in the field of justice related to important matters regarding the appointment and dismissal of judges or the legal status of the Councils for the Judiciary, which must benefit from the necessary resources to be effective and able to manage their budget independently. It is also emphasized that extremely long court proceedings and long delays negatively affect citizens' and businesses' trust in the national judicial systems.

The report indicates that a large part of Europeans is very skeptical of the measures promoted by states against corruption and believe that high-level corruption cases are not sufficiently prosecuted. Several Member States have promoted criminal law reforms to strengthen the fight against corruption, while others have experienced stagnation in this area. This year's recommendations aim to strengthening preventive frameworks, such as those governing lobbying and conflict of interest rules, as well as ensuring the effective investigation and prosecution of corruption cases. To prevent and eradicate corruption at the level of the Union, in May 2023, the Commission initiated a legislative proposal in this regard (European Commission, 2023b).

The analyzed report ruled that the Member States significantly improved the quality of their legislative processes, as well as the involvement of stakeholders in these processes. The Constitutional Courts have a decisive role in the system of checks and balances through the important decisions that were taken, especially regarding the organization of the national judicial systems. It is also stipulated that, in certain Member States, there is no official framework for the consultation of interested parties or it is not respected, and civil society organizations and human rights defenders have various obstacles in carrying out their work. The report drew the attention of the Member States regarding their implementation of the judgments of the European Court of Human Rights, the creation and the ensuring of an adequate framework of action for civil society, to provide it with effective ways, the involvement of all interested parties in the legislative process.

The EU Justice Scoreboard, which is drawn up annually, provides important information for the Rule of Law Report and for the European Semester - the EU's annual cycle of economic policy coordination. The 2024 edition of EU Justice Scoreboard includes several significant novelties. Among

these, we mention statistics on the accessibility to justice for children in civil and in criminal proceedings; notaries and their powers in succession procedures; the salaries of judicial and prosecutorial expert staff.

The EU Justice Scoreboard 2024 (European Commission, 2024) is divided into sections which relate to: efficiency of justice systems, quality and citizen-friendly justice systems and independence and justice systems. Regarding the first section (efficiency of justice systems), it was found that in 2022, civil and commercial cases were resolved in less than 1 year in most of the Member States and the lengths of proceedings decreased in 17 Member States, compared to 2021.

The EU Scoreboard therefore contains important information, indicating the progress, gaps and challenges faced by the Member States year after year. They can take over the best practice models in the field and thus determine new goals to achieve, for the best possible evolution of the national judicial systems.

Another way to defend the rule of law is represented by the Cooperation and Verification Mechanism for Romania and Bulgaria (CVM), created for the two states in question to undertake actions regarding the reform of the judicial system, effective measures against corruption and organized crime. This last field has referred only to Bulgaria. The analyzed mechanism was put into effect through the elaboration of reports by the European Commission for Romania and Bulgaria, starting in 2007. The latest reports, drawn up by the European Commission, in October 2019 (European Commission, 2019c), for Bulgaria and in November 2022 (European Commission, 2022), for Romania, established that the two states subject to examination satisfactorily fulfilled the reference objectives within the CVM, the commitments assumed at the time of accession to the Union European having been reached. As a result, the two decisions of the European Commission (European Commission, 2006a and 2006b), through which this mechanism was created, have been repealed by two other decisions (European Commission, 2023c and 2023d), elaborated on September 15, 2023, which produced legal effects from October 9, 2023.

3. JURISPRUDENCE OF THE COURT OF JUSTICE REGARDING THE GUARANTEE OF CERTAIN VALUES OF THE RULE OF LAW

In EU, the Court of Justice and the General Court have determined, in their jurisprudence, some principles that outline the content of the rule of law, such as: the principles of legality and legal security; prohibition of arbitrary executive power; the existence of independent and impartial courts; effective judicial control, which includes the guarantee of fundamental rights and equality before the law. Next, we shall analyze some relevant decisions, which reflect these requirements, with express reference to the effective jurisdictional protection, as well as to the principles of legality and legal security. Some of these will be

addressed in more detail, as they present important aspects that are directly related to the protection of the rule of law. In this regard, it is necessary to mention that the second subparagraph of Article 19(1) TEU requires Member States to establish the necessary remedies to ensure, in the areas covered by Union law, effective judicial protection; at the same time, Article 47 of the Charter confers on every litigant (the institutions of the Union and the Member States) the right to an effective remedy before a court and to a fair trial.

The effective jurisdictional control is part of the actual content of the rule of law, being an essential requirement for respecting the principle analyzed in the paper. The existence of a concrete control exercised by the courts has been enshrined, for a long time, in the jurisprudence elaborated at the level of the European Communities and, later, at the level of the European Union. In this sense, in the Case Les Verts/Parliament of 1986**,** the Court of Justice of the European Communities (CJEC, 1986a), the Court ruled that the European Economic Community is a community based on the rule of law, since neither its Member States nor its institutions can evade control, which aims at the conformity of their legal acts with the Treaty on the European Economic Community. Through Articles 173 and 184, on the one hand, and through Article 177, on the other, the Treaty established *a complete system of appeals and procedures, intended to entrust the Court of Justice with the control of the legality of the acts adopted by the institutions*. Natural and legal persons are thus protected against the situation in which acts of general applicability would apply to them, which they cannot challenge directly before the Court, given the special conditions of admissibility, provided for in the second paragraph of Article 173 of the Treaty.

Another significant judgment on the right to an effective remedy was the Johnston Judgment of 1986 (CJEC, 1986b). In this case, the Industrial Tribunal of Northern Ireland, in Belfast, referred several preliminary questions to the Court of Justice regarding the interpretation of the Council Directive 76/207/EEC of 9 February 1976 on the implementation of the principle of equal treatment between men and women. This directive determines a number of derogations from the prohibition of any discrimination based on sex. According to Article 6, any person who considers himself/herself aggrieved by discrimination must be able to exercise his/her rights through the courts.

Among the preliminary questions addressed to the Court, it is of particular importance for *the right to an effective remedy* if the applicant can rely, before the national courts of the member states, on the principle of equal treatment, enshrined in the applicable provisions of the directive. The court ruled that the judicial control imposed by the Article 6 reflects a general principle of law, which is the basis of the constitutional traditions common to the Member States. Based on this article, "every person has the right to formulate an effective action before a competent court against acts that he considers to be infringing on the

principle of equal treatment between men and women provided for by Directive 76/207. The member states have the obligation to ensure effective judicial control over compliance with the applicable provisions of Community law and national legislation, aimed at implementing the rights provided for in the directive".

In another important case from 1987 (CJEC, 1987), the Court of Justice decided: since free access to employment is a fundamental right, which the EEC Treaty confers individually for each worker in the Community, *the existence of a remedy of a judicial nature against any decision of a national authority refusing the benefit of that right is essential to secure for the individual effective protection for his right*. As the Court stated in its judgement of 15 May 1986 in the Case 222/84, commented above, that requirement reflects a general principle of Community law which underlies the constitutional traditions common to the Member States and has been enshrined in the articles 6 and 13 of the European Convention for Protection of Human Rights and Fundamental Freedoms.

In a 2008 Court decision (CJEU, 2008), it explains the purpose and the limits of the judicial review. Therefore, the aim of the control of legality is to ensure that the predetermined limits of the powers on the areas of competence of the different State authorities, organs or bodies are respected, and not to determine these limits. As the Spanish government pointed out at the hearing, *the existence of a judicial review is inherent in the existence of a rule of law*. The case-law of the courts of a Member State is important to ascertain the limits of an intra-State body's areas of competence, because the interpretation of case-law forms an integral part of the laws defining those areas of competence. However, the review decision is limited to interpreting the law establishing the limits of the areas of competence of such a body and cannot generally call into question the exercise of those powers within those limits.

In a 2013 case (CJEU, 2013a), the General Court decide that "the judicial review of the lawfulness of a measure whereby restrictive measures are imposed on an entity extends to the assessment of the facts and circumstances relied on as justifying it, and to the evidence and information on which that assessment is based. In the event of challenge, it is for the Council to present that evidence for review by the Courts of the European Union". For its part, in the same case, the Court of Justice specified that, when reviewing restrictive measures, the courts of the Union must, in accordance with the powers with which they are vested under the treaty, ensure a control, in principle complete, of the legality of all Union acts from the perspective fundamental rights, which are an integral part of the legal order of the Union. Article 52 paragraph (1) of the Charter of Fundamental Rights of the European Union admits restrictions on the exercise of the rights enshrined therein, if the respective restriction respects the substance of the fundamental right in question and if, respecting the principle of proportionality, it is necessary and effectively responds to objectives of general

interest, recognized by the Union (Tofan and Verga, 2023). Considering the adversarial principle, which is part of the content of the right to defense, the parties to a case must have the right to examine all documents or observations submitted to the court to influence its decision and to comment on them.

In another relevant judgment in the field from 2013, Khadi (CJEU, 2013b), the Court emphasized that the existence of a violation of the right to defense and the right to effective judicial protection must be assessed according to the specific circumstances of each case, particularly the nature of the act in question, the context of its adoption and the legal rules governing the respective matter. The effectiveness of the judicial review guaranteed by Article 47 of the Charter also requires that the Courts of the European Union are to ensure that the decision, which affects the person or entity concerned individually, is taken on a sufficiently solid factual basis. Thus, it is for the Courts of the European Union, in order to carry out that examination, to request the competent European Union authority, when necessary, to produce information or evidence, confidential or not, relevant to such an examination. It is the task of the competent European Union authority to establish, in the event of challenge, that the reasons relied on against the person concerned are well founded, and not the task of that person to adduce evidence of the negative, that those reasons are not well founded.

In the case finalized with the Judgment of June 4, 2013 (CJEU, 2013c), the Court analyzed the provisions of Directive 2004/38/EC. Article 31 of the normative act cited above obliges the Member States to establish, in domestic law, the necessary measures to allow Union citizens and their family members to have access to judicial procedures and, as the case may be, to administrative appeals, in order to appeal or lodge an appeal against any decision, which restricts their right to move and reside freely in the Member States for reasons of public order, public security or public health. At the same time, the fundamental right to an effective remedy would be violated, if a court decision were based on facts and documents, which the parties themselves or one of them did not have the opportunity to examine and which, therefore, they could not express their point of view. That is why the member states are obliged, first of all, to provide for an effective judicial control both regarding the existence and the validity of the reasons invoked by the national authority regarding the security of the state, as well as the legality of the decision taken pursuant to Article 27 of Directive 2004/38; secondly, the member states have the duty to prescribe techniques and rules regarding this control. In this sense, "it is necessary for a court to be entrusted with verifying whether those reasons stand in the way of precise and full disclosure of the grounds on which the decision in question is based and of the related evidence". Finally, the Court ruled that the articles 30(2) and 31 of Directive 2004/38/EC, read in the light of Article 47 of the Charter of Fundamental Rights of the European Union, must be interpreted as requiring the national court with jurisdiction to ensure that failure by the competent national

authority to disclose to the person concerned, precisely and in full, the grounds on which a decision taken under Article 27 of that directive is based and to disclose the related evidence to him is limited to that which is strictly necessary, and that he is informed, in any event, of the essence of those grounds in a manner which takes due account of the necessary confidentiality of the evidence.

In the same sense, through another decision from 2014 (CJEU, 2014), the Court ruled that, according to Article 47 of the Charter, which constitutes a reaffirmation of the principle of effective judicial protection, any person whose rights and freedoms are guaranteed of Union law are violated has the right to an effective appeal before a court, in accordance with the conditions established in the mentioned article.

In a case from 2015, (CJEU, 2015), the Court ordered that a regulation that does not provide for any possibility for the litigant to exercise legal means to have access to personal data, which concern him or to obtain the rectification or deletion of such data does not respect the substance of the fundamental right to effective judicial protection, as enshrined in Article 47 of the Charter.

Another important decision in the field under our analysis is the Case T-340/14 (CJEU, 2016). This concerned, among other things, a request, asking for the annulment of Council Decision 2014/119/CFSP of 5 March 2014 on restrictive measures against certain persons, entities and bodies in view of the situation in Ukraine, as well as the decision of its modification. Also, the cancellation of Regulation (EU) no. 208/2014 of the Council of March 5, 2014 on restrictive measures against certain persons, entities and bodies in view of the situation in Ukraine and the implementing regulation of the regulation in question has been requested. Communication of evidence during the proceedings was sufficient to guarantee the exercise of the right of defense and the right to effective judicial protection of the applicant. According to the examined decision, the respect for the rule of law is one of the primary values on which the Union is based, as is clear from Article 2 TEU as well as from the preambles to the EU Treaty and those of the Charter of fundamental rights. Respect for the rule of law is, moreover, a precondition for membership of the Union, under Article 49 TEU. The notion of the rule of law is also enshrined, under the alternative formulation of "rule of law", in the preamble to the European Convention on Human Rights. The Court also underlined that the case law of the Court of Justice and the European Court of Human Rights as well as the work of the Council of Europe, through the European Commission for Democracy through Law, provide a list non-exhaustive of the principles and standards that can be included in the notion of the rule of law. Among these are the principles of legality, legal certainty and the prohibition of arbitrary executive power; independent and impartial courts; effective judicial review, extending to respect for fundamental rights and equality before the law.

The Case Rosneft 2017 (CJEU, 2017) refers to a request for a preliminary ruling under the Article 267 TFEU from the High Court of Justice (England & Wales), Queen's Bench Division (Divisional Court), made by decision of 9 February 2015, received at the Court on 18 February 2015, in the proceedings between, on the one hand, *PJSC Rosneft Oil Company*, a company registered in Russia, and, on the other, *Her Majesty's Treasury, The Secretary of State for Business, Innovation and Skills and the Financial Conduct Authority* ('the FCA'), concerning restrictive measures adopted by the European Union and imposed on certain Russian undertakings, including Rosneft. This request for a preliminary ruling relates to the validity of certain provisions of Council Decision 2014/512/CFSP of 31 July 2014, concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine, as amended by Council Decision 2014/872/CFSP of 4 December 2014 and corrigendum ('Decision 2014/512'), and the validity and interpretation of Council Regulation (UE) No 833/2014 of 31 July 2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine and corrigendum, as amended by Council Regulation (EU) No 1290/2014 of 4 December 2014.

In this case, on 6 March 2014, following the unprovoked violation of Ukraine's sovereignty by the Russian Federation, the European Union suspended bilateral talks with it on visa matters and on the new global agreement, which was supposed to replace the EU Russia Partnership Agreement and stated that any other measure by the Russian Federation, which would be likely to destabilize the situation in Ukraine, would have considerable consequences for the relations between the Union and its member states, on the one hand, and the Russian Federation, on the other hand, in numerous economic fields. Decision 2014/512 specifically determined prohibitions on the export of certain sensitive products and technologies to the oil sector in Russia and restrictions on the access of certain operators in that sector to the European capital market. *Rosneft* is a company registered in Russia, which operates in the oil and gas sectors.

The Court ruled that, from the corroboration of Union legislation, the Court has such jurisdiction. Secondly, it was requested to establish whether the Court has the authority to control the legality of restrictive measures taken against natural or legal persons, measures provided for by this decision, when the Court is referred by a national court, which has doubts about the validity of the respective measures. The court answered affirmatively. In this sense, the Luxembourg Court concluded that the preliminary reference in the assessment of validity fulfills an essential function to ensure effective jurisdictional protection, where, as in the main case, both the legality of the national implementing measures and the legality of the decision underlying them, itself adopted in the field of CFSP, are brought back into question in a national jurisdictional procedure. The Court also emphasized that the very existence of an effective judicial control intended to ensure compliance with the provisions of Union law

is inherent in the existence of a rule of law. In the same vein, the Court ruled that the necessary coherence of the jurisdictional protection system requires, according to a constant jurisprudence, that the power to establish the lack of validity of the acts of the Union institutions, invoked before a national court, be reserved for the Court, in basis of article 267 TFEU (European Union, Treaty on the Functioning of the European Union). The same conclusion is required about decisions in the field of CFSP in respect of which the treaties give the Court a competence to control the legality. Likewise, the main objective of Article 267 TFEU is to ensure a uniform application of Union law by national courts, including Council decisions on taking restrictive measures against natural or legal persons. Therefore, divergences between the courts of the Member States on the validity of such decisions could compromise the very unity of the Union's legal order and undermine the fundamental requirement of legal certainty. The second preliminary question concerns the assessment of the validity of some provisions of the above-mentioned decision and regulation. Thus, the measures provided for in Articles 4 and 4a of Decision 2014/512 do not constitute restrictive measures against natural or legal persons, within the meaning of *the principles of legal certainty and the precision of the applicable law* (*nulla poena sine lege certa*). The Court emphasized that the foreseeability of the law does not prevent the person concerned from being determined to resort to adequate counseling in order to assess, at a reasonable level in the circumstances of the case, the consequences that may result from a certain act. In this case, it must be considered that the terms whose impreciseness is invoked by Rosneft, without presenting an absolute precision, are not such as not to allow the litigant to know which acts and omissions engage his criminal liability. It follows from the Court's jurisprudence that the principle of the precision of the applicable law cannot be interpreted in the sense that it prohibits the progressive clarification of the rules regarding criminal liability through jurisprudential interpretations, if they are reasonably foreseeable. The fact that the terms used in Regulation no. 833/2014 may be subject to further progressive clarification by the Court cannot prevent a Member State from adopting sanctions to ensure the application of the regulation. Therefore, the principles of legal certainty and the precision of the applicable law must be interpreted in the sense that they do not prevent a member state from imposing criminal sanctions, applicable in case of violation of the provisions of Regulation no. 833/2014. Thus, the Court ruled that the very existence of effective judicial protection "is of the essence of the rule of law".

Another request for annulment of the same normative legal acts mentioned above in the case of Andriy Klyuyev v Council of the European Union from 2016 was brought to the General Court of the Union by Viktor Fedorovych Yanukovych (CJEU, 2019a), former president of Ukraine. Among the reasons invoked, there is also the violation of the right to defense and the right to an effective remedy. In this sense, the Council argued that the maintenance of the

applicant's name on the list of those against whom restrictive measures were ordered following the acts of March 2015 is based only on the letter of October 10, 2014. Before adopting the decision to keep the applicant's name on the list, the Council communicated the letter of 10 October 2014 to the applicant. Also, by letter of 2 February 2015, the Council informed the applicant of its intention to maintain the restrictive measures taken regarding to him, notifying him that he can present observations. Transmission of all information to the applicant, which constituted evidence during the proceedings, was sufficient to guarantee the exercise of the applicant's right of defense and right to effective judicial protection. In this way, he invoked reason was rejected by the General Court.

In the Case C-619/18 R (CJEU, 2019b), the European Commission brought an action against Poland for violating the second paragraph of the article 19 from the TEU and the article 47 of the Charter of Fundamental Rights of the European Union. The Court of Justice established that the reduction of the mandate of judges at the Supreme Court violated the principle of irremovability of judges. The legal acts by which the President of Poland ordered the extension of the mandate of some judges of the Supreme Court beyond the retirement age were arbitrary, with no way of appeal against them.

On 30 January **2019**, in the Stavytskyi v Council judgment (CJEU, 2019c), the General Court ruled on the annulment action brought against Decision (CFSP) 2017/381 and Implementing Regulation (EU) 2017/374 by Mr. Erdward Stavytskyi, who had been kept on the list of persons, entities and bodies concerned by the restrictive measures adopted regarding the situation in Ukraine. The applicant, a former Minister of Energy and Coal Industry of Ukraine, had in fact been the subject of restrictive measures adopted by the Council because he had been the subject of criminal proceedings by the Ukrainian authorities for the misappropriation of state funds and public goods. The plaintiff essentially invoked: *the infringement of the obligation to state reasons; the unlawfulness, the disproportionality and the lack of legal basis of the relevant criterion; the manifest errors of assessment in applying that criterion to the applicant's case.* According to the Court's jurisprudence, the obligation to state reasons for normative legal acts provided by Article 296, second paragraph of the TFEU and Article 41, paragraph (2), letter (c) of the Charter must be adapted to the nature of the challenged act and the context in which it was adopted. The motivation of an act consists in the formal expression of the reasons on which this act is based. If these reasons are affected by errors, they affect the substantive legality of the respective act, but not its motivation.

To be able to establish that a misappropriation of public funds can justify an action of the Union within the framework of the CFSP, based on the objective of strengthening and supporting the rule of law, it is necessary at least that the disputed facts are likely to affect the fundamentals institutional and legal of the country concerned. The mentioned criterion must be interpreted in the sense that

it does not refer, in the abstract, to any act of misappropriation of public funds, but rather refers to acts of misappropriation of funds or public assets which, considering the amount or type of funds or assets misappropriated or the context in which they occurred, are at least likely to undermine the institutional and legal foundations of Ukraine, in particular the principles of legality, prohibition of arbitrariness of executive power, effective judicial review and equality before the law, and ultimately to undermine respect for the rule of law in this country.

We shall examine, in detail, a decision of the Court (Repubblika), which has a very special importance for the subject covered in this exposition. Thus, in case C 896/19 of April 20, 2021 (CJEU, 2021a), the request for a preliminary ruling concerns the interpretation of Article 19 TEU and Article 47 of the Charter of Fundamental Rights of the European Union. This request was made in a dispute between Repubblika, an association, registered as a legal person in Malta, whose object is to promote the protection of justice and the rule of law in this Member State, on the one hand, and the Prime Minister of Malta, on the other hand, in connection with an actio popularis, having as its object, among other things, the conformity with Union law of the provisions of the Constitution of Malta, which regulate the procedure for appointing judges. The Court also decided that, according to Article 19 paragraph (1) second paragraph of the TEU, it is incumbent on the member states to provide a system of appeals and procedures, which ensure effective judicial control in the areas regulated by Union law, as well as to ensure that the courts that are part of this system and that are likely to rule on the application or interpretation of Union law meet the requirements of effective jurisdictional protection. In this sense, the independence of judges in the Member States is of fundamental importance for the legal order of the Union in various ways. On the one hand, this is essential for the proper functioning of the judicial cooperation system, constituted by the preliminary reference mechanism provided for in Article 267 TFEU, since this mechanism can only be activated by a court that has the task of applying Union law, which fulfills among others this criterion of independence. On the other hand, the requirement of independence of the courts, which is inherent in the judicial activity, relates to the essential content of the right to effective judicial protection and to a fair trial, provided for in Article 47 of the Charter, which is of essential importance as a guarantor of the protection of all the rights conferred on litigants by Union law and the maintenance of the common values of the member states provided for in Article 2 of the TEU, in particular the value of the rule of law.

According to a constant jurisprudence of the Court, the guarantees of independence and impartiality required under EU law suppose rules, particularly as regards the composition of the body and the appointment, length of service and grounds for abstention, rejection and dismissal of its members, that are such as to dispel any reasonable doubt in the minds of individuals as to the

imperviousness of that body to external factors and its neutrality with respect to the interests before it. Pursuant to the principle of the separation of powers which characterizes the operation of the rule of law, the independence of the judiciary must be ensured in relation to the legislature and the executive.

In another case (CJEU, 2021b), Hungary brought an action for annulment against the European Parliament resolution on a proposal calling on the Council of the European Union to determine the existence of a clear risk of a serious breach of the values on which the European Union is founded, according to Article 7(1) TEU. It invoked before the Court, among others, the violation of the principles of legal certainty, equal treatment, democracy and sincere cooperation. The Court rejected all the pleas and ordered the payment of all court costs by Hungary.

4. CONCLUSIONS

The phrase rule of law is an extremely complex notion, whose content is constantly enriched with new nuances of the requirements it implies. The analyzed principle covers all areas of development of a state or an international organization, which promote, in various ways, democratic values. In this sense, as presented in this presentation, the European Union benefits from a series of mechanisms to defend the rule of law, such as: the Rule of Law Report, the EU Justice Scoreboard, the Cooperation and Verification Mechanism for Romania and Bulgaria (CVM). Such ways of supporting the examined principle are also provided by art. 7 of the Treaty on the European Union, as well as the Rule of Law Conditionality Regulation.

This exposition considered, in particular, the way in which some requirements of the rule of law were transposed into practice, such as the principles of legality and legal security, effective judicial protection.

From the analysis of the examined decisions, it appears that various aspects of the content of the rule of law were violated especially by the Member States and, in some situations, even by Union institutions. Also, the Union's jurisprudence in the field acquires a special significance also by the fact that it contributes to clarifying the meaning of many notions related to the rule of law, which were explained by the Union courts, in some cases even in detail, especially when formulating some requests for preliminary questions.

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WHAT IS THE IMPACT OF HEALTH DEFINITION? A CONCEPTUAL FRAMEWORK FOR HEALTH AND HEALTH STATUS

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Abstract
Health is complex, multidimensional and hard to define. Health is a separate concept from health status since health is dynamic and health status suggests the ability to measure. Some of the dimensions of health appear in definitions and literature. The inability to define health may lead to some problems in measuring health status as a statistical variable, a perspective that underlines the importance of a clear definition, as complete as possible, appropriate to the context for which the analysis is made. Current definitions do not address all dimensions of health. More broad definitions that capture more dimensions of health are essential to support health policy decision-making and researchers. Several analyses use some variables related to dimensions of health (e.g. extracted from WHO definition - social, mental and physical). A clearer definition makes it easier monitor and meet the objectives. In this study, the health and health status are defined first, and then some dimensions from definitions of health and from literature are debated. The results consist in this collection of dimensions: physical, mental, social, functional, subjective, religious, environmental, emotional, intellectual. Definition created is as follows: "Health is a complex, multidimensional concept that can be affected by a multitude of factors such as physical, social, mental, religious, intellectual, subjective, environmental, and broadly it links to the idea of pain or suffering in any way, but also the well-being and happiness, i.e. holiness for those who have it.". It is important to have a complex definition to support health policy decision-making, which leads towards improving the health status of the population.
Keywords: *health dimensions; health statistics; health policy decision-making; health status.*
JEL Classification: I10.

1. INTRODUCTION

Health is a complex, hard-to-define concept with many dimensions, and capturing all aspects in a single definition is challenging (Van Druten *et al*., 2022). According to the literature, several definitions (World Health Organization, 1948; Ahmed, Coelho and Kolker, 1979; World Health Organization, 1984), and approaches (Brooks, 1994; Ebrahim and Bowling,

2005; Stokes, Noren and Shindell, 1982) are available, perspectives that underline the fact that it is difficult to provide a definition that is valid in any context. That is ideal, but when it comes to health, it is more difficult to provide a fully comprehensive definition. A popular, valid and debated definition is the one offered by the World Health Organization (WHO), which states in its 1948 Constitution: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 1948). This definition is also used in the Dictionary of Health Economics (Culyer, 2005), which indicates that it is valid and well accepted. It is noted that few dimensions are included – physical, mental and social. In contrast to the WHO (1948) definition, Hippocrates defined health as a steady state between body, mind and environment. Health is different from health status. The concept of "health status" suggests the notion of measurement, while "health" is a general, dynamic concept. Some dimensions can also be identified from definitions and approaches to health status, which is also a complex concept.

2. HEALTH DIMENSIONS

The fact that health status is a complex concept can be proven by the following definitions that deal with the concept differently, but also capture different types of measurement: „Health status refers to your medical conditions (both physical and mental health), claims experience, receipt of health care, medical history, genetic information, evidence of insurability, and disability" (Healthcare.gov, 2024), „Health status is a measure of how people perceive their health - rating it as excellent, very good, good, fair, or poor" (Centers for Disease Control and Prevention, 2024). It is observed that health status has many directions, it can include lots of indicators. Stewart and Ware (1992) stated that health status is a multidimensional concept, which requires several indicators that are usually included in health surveys, and which may be questions about the incidence and prevalence of disease, the state of physical, cognitive, emotional and social functioning, disability. To shape a more comprehensive definition of health, it is also necessary to consider some existing health dimension schemes that are available. Most of them consider already the three dimensions from WHO definition.

In terms of terminology, according to the Dictionary of Health Economics (2005), a health dimension is a characteristic, attribute or domain specific to the assessment of health status, and the attribute can form components of a health measure (Culyer, 2005). Dimensions can be selected for a particular research direction in the study. Stoia and Domnariu (2014), in their article on the dimensions of health and their influence on the work environment, based on the definition provided by the WHO, present a scheme of the dimensions of health, which includes the social, physical, emotional, intellectual and spiritual domains.

These have been aligned with the analysis of the work environment. Van Leeuwen and colleagues (2018) display a schema that capture the physical, mental and social dimensions in relation to HRQoL (health-related quality of life). It can be seen in Murdoch-Flowers *et al*. (2017) study of Type 2 Diabetes that the dimensions used resulted from the processes they applied to improve the health status of the chosen community. These are the mental, physical, social and spiritual dimensions.

The three dimensions resulting from the WHO definition have gained popularity in health research, but there are other valuable sets of dimensions to consider. A well-known survey is the SF-36. It considers two dimensions-physical and mental (Ware *et al,* 1993), with eight health domains: physical functioning (10 items); physical role limitations (four items); bodily pain (two items); general health perceptions (five items); energy/vitality (four items); social functioning (two items); emotional role limitations (three items) and mental health (five items) (Burholt and Nash, 2011). The European Health Interview Survey (EHIS) has a different design and consists of the following modules: health status, health care, health determinants, and core social variables (European Union, 2020). Within this framework, domains such as physical and sensory functional limitations, social support, environmental exposures, mental health etc. can be inferred. The National Health Interview Survey (NHIS) includes several sections from which many domains can be deduced, such as physical, mental, social, economic, emotional functioning (United States Census Bureau, 2023). Being healthy does not only imply a biological normality, but also a spiritual, mental and even social one (Daniliuc, 2016). In accordance with these dimensions, I have created for this paper a running definition that draws multiple points at once: "Health is a complex, multidimensional concept that can be affected by a multitude of factors such as physical, social, mental, religious, intellectual, subjective, environmental, and broadly it links to the idea of pain or suffering in any way, but also the well-being and happiness, i.e. holiness for those who have it.". In perspective, these dimensions are important variables in studies and statistical analyses. Some of these dimensions are reflected in the definitions. Hence, focusing on definitions may be an important step for improving the health statistics.

According to Goldsmith (1972), the inability to define the concept of health leads to obvious problems in measuring health status, a perspective that highlights the importance of a clear definition, as complete as possible, appropriate to the context for which the analysis is being made. As per Madans (2001), the starting point for health surveys is the WHO definition, which highlights the multidimensionality that requires different methodologies. Measuring health status is important because it underpins the decisions of several categories of health representatives. Madans (2001) points out that health survey information is used by public health, elected representatives to inform

health policy and legislation, researchers to better understand population health status, determinants and the health care system. It is therefore important that surveys are well chosen, tested and validated to obtain good results that will inevitably lead to good health policy decisions.

A clear definition of health and a clear differentiation of the concepts of health and health status is a step towards a research direction, such as updating a health measure that incorporates several dimensions observed in the set definition. The health definition mainly affects the dimensions included in research for measuring health status. In this study, the set definition includes the three dimensions from WHO definition and the religious, intellectual, subjective, environmental domains. Besides these, other indicators such as pain, well-being and happiness are pointed. This definition is not limited to a fixed number of dimensions; instead, it gives the flexibility to use other dimensions, which best suits for any research direction.

3. CONCLUSION

This study aimed to create a definition of health that covers as many dimensions as possible. In the first step, a distinction between health and health status was made and the connection between definitions and health dimensions was observed. This study brought to light health dimensions from definitions, studies and surveys to have a better view of health status. The results showed that besides the three key dimensions from WHO definition, there are also dimensions such as functional, subjective, religious, environmental, emotional, and intellectual among others. The idea of happiness, well-being, pain and suffering are also mentioned.

This research has significant implications regarding the impact of the definition on research. These outcomes may improve the research results which may contribute to better health policy decision making. This research has an informative character on the health dimensions, but also has the purpose of releasing a new definition of health to help further research. Future research should investigate more the way that health dimensions are selected studies. All in all, this study emphasizes the importance of a comprehensive definition to address multiple dimensions of health status.

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THE DEVELOPMENT OF EMPLOYEES' ENGAGEMENT IN RELATION TO ORGANIZATIONAL DIMENSIONS

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Abstract
Employees' engagement is the employees' state of mind in performing the job requirements with great energy, enthusiasm, and full commitment to the organization and its results. This article presents that the definitions of engagement have expanded over the years. Engagement has an impact on the employees' productivity and, therefore, it affects the behaviors expected from managers. The aim of this article is to present a systematic review of the development of employees' engagement in relation to the organization dimensions. The results of this review aim to lead managers seeing engagement management as an organizational need. In addition, the article leads to manage engagement in several organizational dimensions - managerial, psychological and as an internal organizational communication issue. Also, as entail a need for continued research of organizational engagement to provide managers with tools for promoting engagement and, accordingly, for enhancing the employees' productivity.
Keywords: *employees' engagement; productivity; engagement dimensions; managerial role; internal communication.*
JEL Classification: M50.

1. INTRODUCTION

Employees' engagement to the organization is becoming an issue that concerns managers and organizations all over the world (Gallup, 2023), and is regarded as the third most important trend associated with organizations (Goodman *et al.,* 2009). The importance of the topic has emerged considering the connection between employees' engagement and essential organizational issues, including employees' productivity (Gruman and Saks, 2011), reducing burnout at work. Unlike employees who experience burnout, engaged employees feel more energetic at work and intend performing tasks and missions (Schaufeli *et al.,* 2008).

Furthermore, literature maintains that there is more than one definition of employees' engagement and present several definitions in terms of human research (Markos and Sridevi, 2010). Gallup organization (2023) has defined employees' engagement as the involvement and enthusiasm for work. Gallup attributes employees' engagement to their positive emotional attachment and

commitment to work. According to these views, engaged employees demonstrate a high level of activeness and manifest joy in performing their work. Welch (2011) indicates that employees' engagement is a two-way relationship between employers and employees. In addition to the model conceived by Kahn (1990), which defined the psychological conditions of meaningfulness, safety, and availability, Luthans and Peterson (2002) described employees' engagement as a psychological state characterized as a will for work.

Employees' engagement is symbolized by the cognitive, emotional, and physical involvement of the individual employee during role performance. Furthermore, employees' engagement is achieved when employees have a positive attitude towards the organization for which they work, understand and align themselves with its values, and exert extra effort towards the accomplishment of organizational goals. Other authors (Welch, 2011) state that there has been a superposition between engagement and other organizational concepts, such as job satisfaction.

Due to the importance of employees' engagement, organizations continue addressing the issue from different aspects. Saks and Rothman, (2006) refer to the absence of a universal definition of employees' engagement as a 'controversial issue'. The importance of the issue increased especially after COVID-19, when many organizations combined hybrid work. Hence, it became necessary to manage employees remotely while maintaining the motivation and connection to the organization in which they worked. Managers are required to maintain a continuity of work and business focus, preserve the organizational spirit and flow of information, as well as strengthen the organization's DNA (EL Din Abdel-Raheem and Saad, 2019).

Moreover, the challenge of the issue and the current lack of engagement in organizations around the world have led to a recent global study conducted in 2023 by the Gallup Company: only 23% of the world's employees were engaged at work in 2022. Even though it is the highest level since Gallup has begun measuring global engagement in 2009, it is still a low level of engagement. Furthermore, it illustrated that 52% of global employees recurrently looked for different jobs. Over the years, employees' engagement has become a 'C-suite issue' (CO Managers) and should be treated in a proactive way (Deloitte, 2022).

The present article argues that employees' engagement is an important organizational issue that should be understood and addressed by managers. This is meaningful since employees' engagement relates, among other issues, to employees' organizational productivity. The research method is systematic literature review. The article presents the development of the engagement concept in three aspects: emotional, managerial, and organizational communication. The second part of the article presents systematic literature

review regarding the potential of employees' engagement's contribution to productivity.

2. THE METHODOLOGICAL APPROACH OF THE SYSTEMATIC LITERATURE REVIEW

For performing a systematic literature review, an extensive review of information dealing with employees' engagement was done. The information was based on articles, studies, and books from several sources and several periods, to examine the development of the concept. The PRISMA chart in Figure 1 describes the hierarchy of information collected and read in the process of writing the article.

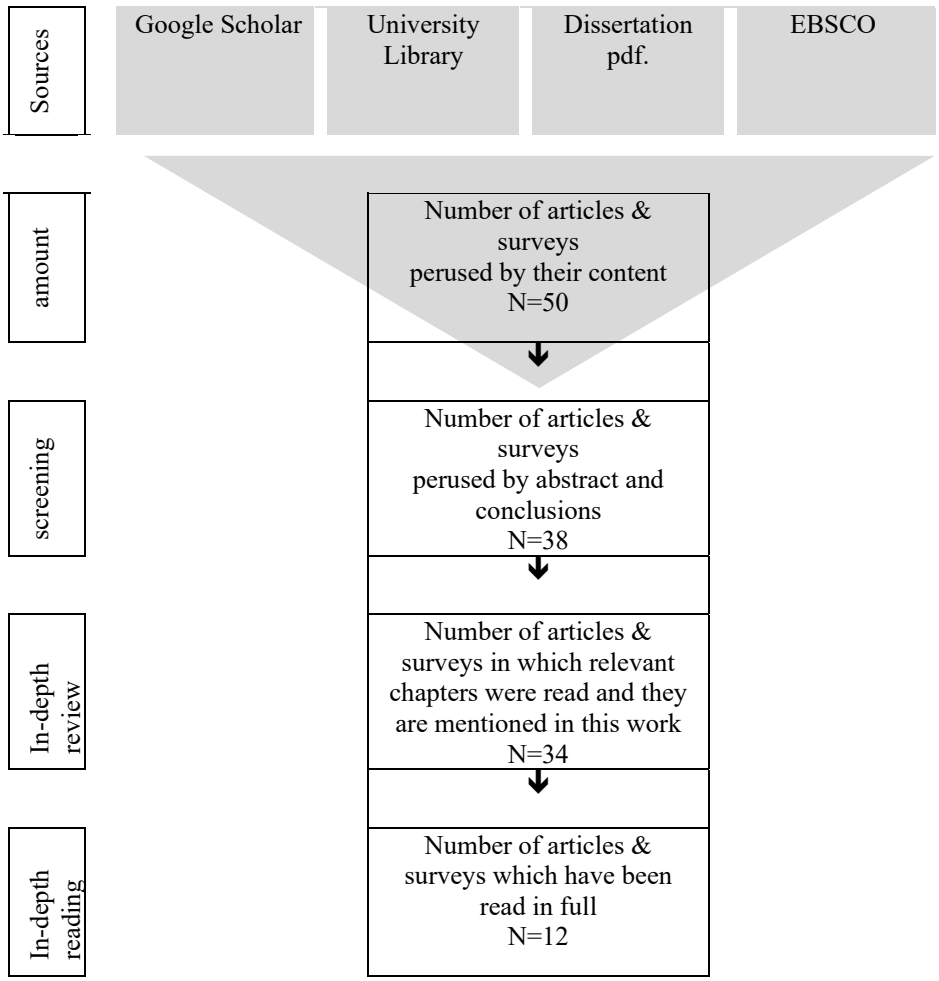

Figure 1. PRISMA Chart

The PRISMA chart shows the way the information flows through the phases of this systematic review.

3. THE EVOLUTION OF EMPLOYEES' ENGAGEMENT

Already in 1966, the term 'engagement' was attributed a meaning even without defining it as a concept. Katz and Kahn (1966) referred to employees and their relationship with effectiveness at work. They argued that engagement was manifested when employees performed actions that transcended the formal requirements. They used the word 'harnessing' to describe the engagement.

In the early 2000s, the term 'employee engagement' received an explicit identity in business literature. One of the fields to which the concept is linked is employees' burnout (Schaufeli *et al.,* 2008). Over the years, the concept was attributed different meanings in different organizational contexts. At the same time, in most cases, it has become evident that there is no single definition of engagement, and different aspects have related to the term or affected it. Different parties use different scales and different types of measurement for measuring engagement (Robertson and Cooper, 2010).

There are several factors that contribute to employees' engagement. Anitha (2014) focused on seven factors found as valid determinants of employees' engagement: Work environment, Leadership, Team and co-worker relationship, Training and career development, Compensation or payment, Organizational policies, procedures, structures, and systems, Workplace well-being, such as work environment that refers to the various aspects of organizational context. Anitha (2014) emphasized that work environment was found to be one of the meaningful determinants of employees' level of engagement.

After the COVID-19 pandemic and the dealing with employees in hybrid work, it appears that employees' engagement has received a new description. Employees that are not engaged, take part in the activities of the organization but without passion in relation to the organization and its goals (Chanana and Sangeeta, 2021).

3.1 Emotional and psychological aspects of employees' engagement

Being one of the initial practitioners in the field of connectedness, Kahn (1990) defined the emotional and psychological aspect as the first among list of motivations for engagement. He suggested that there were three psychological needs for making employees accomplish their role performance: meaningfulness (at work), safety (as a social matter), management and organizational behavior. The definition by Schaufeli *et al.* (2002) extended the emotional aspect of employees' engagement. The researchers argued that employees' engagement was a positive attitude towards work, described as vigor, energy, and enthusiasm of employees. González-Romá *et al.* (2006), took this aspect one step forward and defined engagement as the opposite of burnout.

Saks and Rothman (2006) extended the emotional aspect and defined employees' engagement as the psychological presence at the work role. They set a new way of defining the emotional aspect, distinguishing between job engagement and organizational engagement. Another development of the emotional aspect is based on the relation between employees' engagement and the organizational values and goals. Beloor *et al.* (2017) argue that in order to increase the level of the engagement to the work role, it is important to match the workplace and the employees' values.

In 2021, the empirical literature indicated a new stage of emotional aspect: passion. Chanana and Sangeeta (2021) posited that passion presents engage employees. They mentioned that unengaged employee used to participate but without passion for the organizational goals.

To sum up, the development of the psychological aspect of employees' engagement indicates a transition from dealing with the satisfaction of the employees' basic needs, e.g., security, to strengthen engagement, to a stage where the need to connect to the values of the organization is addressed, to evoke 'passion' for work as a manifestation of a high level of engagement.

3.4 Managerial aspects in employees' engagement

Bakker *et al.* (2007) conducted a study among 3437 employees from around the world. Their findings showed that, regarding managerial aspect, promoting a team atmosphere, clarity of duties, and allocation of resources to employees had a positive effect on the level of employees' engagement. A leap forward in addressing the managerial aspect and its impact on engagement was indicated in the research conducted by Papalexandris and Galanaki (2009). They examined the effect of managers and their characteristics on the engagement and, having examined 51 CEOs, they suggested that when managers behaved as 'mentors' to their employees, the employees feel more engaged.

Taipale *et al.* (2011) presented a later approach that related to job demands from the employees versus the resources provided to the employees. A survey performed among about 7800 employees in Europe showed that the job demands, and the resources employees received for the purpose of performing their job, affected the level of engagement. Three years later, Sarti (2014) asserts that managers' support was clearly related to the level of employees' engagement to the organization.

The managerial aspect continued to be examined, exploring which component had a stronger effect on engagement, the level of strict job requirements or the resources provided to the employees. The research conducted by Gan and Gan (2014) indicated that demands caused burnout (and did not affect engagement), while the issue of resources provided to the employees, affected both the engagement and the burnout level.

The issue of providing resources to employees and investing in them for the purpose of performing their jobs was also investigated from the aspects of learning and enrichment resources for employees. Sarti (2014) explored the issue among 167 caregivers in Italy. The research found that providing opportunities for learning considerably affected the level of employees' engagement, while financial reward and feedback on activity had no effect on engagement. At the same time, it is noteworthy that those results are related to 'caregiver population' that usually acts out of humanity and values.

Following the COVID-19 pandemic and the transition to hybrid work that integrated work from home and at the workplace, new methods for strengthening organizational engagement, even in remote management, were examined (Shaik and Makhecha, 2019).

The new work style has also led to new management styles that have an impact on the engagement and relationships between the employees and the organization (Moore *et al.,* 2020). During the COVID-19 pandemic, there has been a transition from a direct management style focused on performance, to a style that is more people-oriented. There was more attention on sharing and an attempt to enhance team collaboration. Managers put an emphasis on listening to employees. The managers themselves received tools from human resources, to adopt authentic and direct management approaches. Moore *et al.* (2020) also argued that there was shift to personal performance management and distribution of individual compensation. Later, a new definition was conceived, increasing the connection between job satisfaction and engagement to the organization (Chanana and Sangeeta, 2021).

To sum up, the development of the managerial aspects indicates transition from articles referring to the management of team spirit and group management, to articles referring to individual management with goals and individual rewards as affecting the level of engagement.

3.5 Internal communication aspects in employees' engagement

Both organizational communication (sent to the employees by the CEO or the Internal Communication Unit) and leadership communication - sent by direct managers to their employees, are defined as promoting employees' awareness and understanding of organizational goals (Welch, 2008).

Communication led by managers affects the level of engagement, since leaders in organizations are the mediators between the organization and its stakeholders, the employees being one group of them (Pugh and Dietz, 2008). Based on this leaders' responsibility, their communication abilities, i.e., managers communicating with their direct employees, have been acknowledged as an important driver of engagement in organizations (Welch, 2011). Welch stated that internal communication could effectively explain the organization's values to its employees, involving them in organizational goals and establishing

a link between the two. He developed a model that explained how communication contributed to the attainment of employees' engagement. In the model, engagement is represented through three dimensions: emotional, cognitive, and physical. The model links internal communication to the three dimensions of senior management leadership communication:

- Encourage commitment to the organization.
- Enhance a sense of belonging to the organization,
- Promote organizational issues like awareness of changing organizational environments and understanding the organizational goals.

Later, other studies have consistently shown that communication plays an important role in employees' engagement (Verčič *et al.,* 2012). They expanded and referred to the effect of channels and types of communication. Various internal communication activities, such as open channels of communication, constant feedback, and shared knowledge had a positive impact on work engagement. Furthermore, Verčič *et al*. indicated that internal communication satisfaction played a vital role in increased levels of employees' engagement. After COVID-19, internal communication was defined as having a strong impact on employees' engagement, leading to their performance, job satisfaction, and productivity at work (Wiradendi Wolor *et al.,* 2022).

To sum up, over the years, articles have illustrated that the impact of corporate communication on the level of engagement has been enhanced.

3.6 Engagement and productivity

Schaufeli *et al.* (2002) defined employees' engagement as a positive approach to work and as a state that enhances employees' productivity and reduces burnout. The connection was strengthened by Saks and Rothman (2006), who conducted a study among about 100 employees of various organizations in Canada. The findings showed that both the type of job and the level of engagement affected the employees' performance results. Chughtai and Buckley (2011) added another factor in the relationship between engagement and productivity, namely the need to learn organizational goals. That is, when there is a high connection level and the employees are familiar with the organizational goals, there is an increase in productivity.

A broader effect of engagement on performance was presented by Shantz *et al.* (2013), in a study conducted among about 280 employees at a consulting company in England. The findings indicated that being engaged resulted in a high level of performance, as well as in a high level of good citizenship. Lee *et al*. (2014) added to the relationship level the need for supportive organizational communication. The researchers argued that improving the quality of internal communication, combined with increasing training and compensation, would improve employees' productivity.

To sum up, over the years, articles have shown a development according to which engagement affects not only organizational productivity but also the good citizenship of the employees.

3.7 Table of concepts

The focus of the empirical literature on the topic of engagement stems from studies that illustrate the relationship between employees' engagement and productivity. The term 'employee engagement' has received diverse references over the years, as various aspects that affect engagement have gradually been introduced.

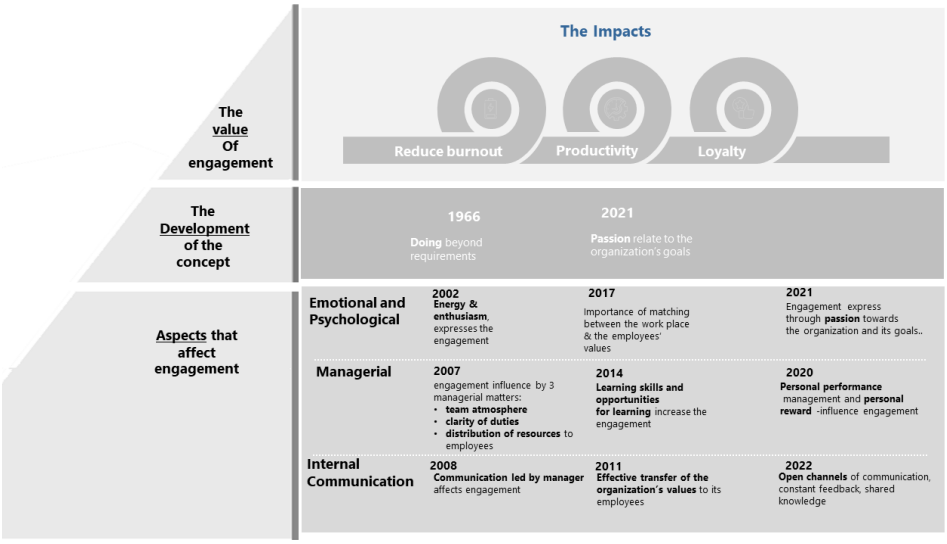

Figure 2. The pyramid aspects – A personal perspective based on the literature review

Figure 2 shows the three aspects presented in this article with reference to employees' engagement: emotional and psychological aspects, managerial aspect, and internal communication aspect. All three aspects are believed to increase the engagement and, consequently, increase employees' performance.

Table 1 summarizes the views about employees' engagement and the definition of the aspects related to engagement as presented in this article. The second line shows an example of the development of the aspect's definition over the years as it appears in this literature review.

Table 1. Summary of the aspects related to employees' engagement as presented in this article

	Employees' Engagement	Emotional and Psychological aspects	Managerial aspect	Internal communication aspect
General definition	Positive emotional approach and employees' commitment to their work	Meaningfulness (at work), safety (as a social matter), management, and organizational behavior	The effects of managerial demands from employees, combined with investment in employees' development	Employees' awareness and understanding of organizational goals
Changes in definitions over the years	1966: Doing actions that go beyond the formal requirements (Katz and Kahn). 2021: Passion in relation to the organization and its goals (Chanana and Sangeeta).	2002: Energy enthusiasm of employees (Schaufeli *et al.).* 2021: Passion manifested (Chanana and Sangeeta).	2007: Promotes a team atmosphere, clarity of duties (Bakker and Demerotti). 2020: Personal performance management and individual compensation (Moore *et al.)*	2011: Effective transfer of the organization's values to its employees (Welch). 2017: Open channels of communication, constant feedback, shared knowledge (Vercic and Vokic)

4. CONCLUSION

This article reviews the analyze the meaning and importance of employees' engagement to the organization. The literature review presented here shows that employees' engagement does not have a single definition and the reference to it has evolved over the years. The development of the concept engagement in the articles perused in this article, and affected by mainly three aspects related to engagement, i.e. behavioral, managerial, and internal communication, demonstrate that researchers have added dimensions over the years, as well as deepened the meaning of engagement and the factors that affect it and are related to it. Hence, engagement evolved from a definition referring to the description of the employees' activity: doing above and beyond their job expectations, a description of the employees' level of emotional connection to the organization, as well as identification with the organization and its goals. Furthermore, this article shows that dealing with engagement is important, due to its effect on

organizational productivity. Managers are expected to adopt behaviors and perceptions that aim to affect productivity.

In present days, employees work in a hybrid way, i.e., from home and at the workplace. Thus, managers are expected to create engagement by adding digital and remote tools and to connect the factors that affect engagement. These factors include managing the demands from employees, the allocation of resources, and internal communication.

Thus, engagement is strengthened, affecting the employees' productivity. The results of this review lead managers to see engagement management as an organizational need. In addition, the article leads to the management of engagement in several organizational dimensions - managerial, psychological and as an internal organizational communication issue. Also, as entail a need for continued research of organizational engagement to provide managers with tools for promoting engagement and, accordingly, for enhancing the employees' productivity.

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